

**Auguste Comte and John Stuart Mill**  
**On Sexual Equality:**  
**Historical, Methodological and Philosophical Issues.**

Vincent Philippe Emmanuel GUILLIN

London School of Economics  
and Political Science

Thesis submitted to the University of London  
for the completion of the degree  
of a Doctor of Philosophy

2005

UMI Number: U213342

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

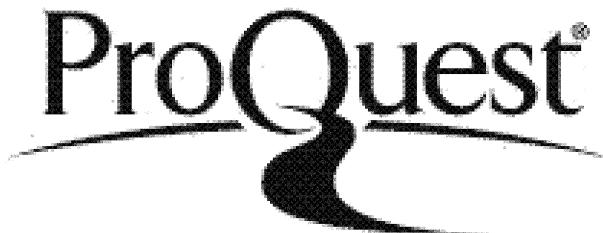
In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI U213342

Published by ProQuest LLC 2014. Copyright in the Dissertation held by the Author.  
Microform Edition © ProQuest LLC.

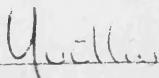
All rights reserved. This work is protected against unauthorized copying under Title 17, United States Code.



ProQuest LLC  
789 East Eisenhower Parkway  
P.O. Box 1346  
Ann Arbor, MI 48106-1346

I hereby certify that the work presented in this thesis is my  
own.

The Candidate:

  
\_\_\_\_\_  
Vincent Guillain

THESES

F

8569



1088848

### **Abstract:**

My thesis intends to show how a detailed study of the issue of sexual equality in the correspondence between Auguste Comte and John Stuart Mill can shed light (1) on the general epistemological, methodological, political, social, and moral disagreements existing between Comte and Mill, and (2) on the evolution of Mill's arguments for the emancipation of women.

I start with a summary of the circumstances which led Comte and Mill to address the topic of sexual equality and I introduce their respective views on the subject prior to the start of the correspondence in the early 1840s. I then review the various biological arguments adduced by Comte in support of his belief in the natural intellectual inferiority of women and single out his commitment to phrenology as a crucial element for his case for women's subjection. I present Mill's rejoinder to Comte's phrenological case and explain how it relates to Mill's defense of associationist psychology and the conception of the "logic of the moral sciences" developed in his *System of Logic*. I then turn to Comte's sociological arguments for the subjection of women. I show how they in fact rely on a biologically inspired conception of human "development", and present the interpretation of the historical record Mill opposes to Comte. The subsequent chapter introduces Mill's pet project of Ethology, which he thought would provide proper knowledge of human nature capable of adjudicating the sexual equality debate. Furthermore it analyses the methodological obstacles which prevented Mill from developing this new 'science of the formation of human character'. I conclude by showing how his failed attempt at founding Ethology forced Mill to find (most notably in his *Subjection of Women*) alternative arguments for the emancipation of women and investigate how they tally with his mature ethical and social views on human nature.

## Table of Contents:

<b>Acknowledgments</b>	p. 7
<b>Abbreviations</b>	p. 8
<b>Introduction</b>	p. 9
<b>I - Comte and Mill on Sexual Equality : Context and Problems</b>	p. 13
A –The Beginnings of the Comte-Mill Correspondence	p. 13
B – From Divorce to Human Nature	p. 16
C – The “Scientificisation” of Politics: Prospects and Problems	p. 18
1 – Comte against Divorce: The Defence of Family as the Basic Social Unit	p. 18
2 – Mill’s Feminism: Is Mill’s Liberal Naturalism Consistent?	p. 26
<b>II - The Female Brain and the Subjection of Women: Biology, Phrenology and Sexual Equality</b>	p. 39
A – Setting the Grounds of the Debate	p. 39
B – The Theoretical Relevance of Biology: Philosophical Issues	p. 43
C – The Varieties of Biological Arguments for the Subjection of Women	p. 46
D – Female Phrenology	p. 50
<b>III - The Phrenological Controversy</b>	p. 61
A – Comte and The Phrenological Support for Women’s Subjection	p. 62
B – Comte’s Methodological Appraisal of Phrenology	p. 64
C – Mill on Phrenology	p. 74
1 – The Scientific Nature of the Phrenological Hypothesis	p. 76
2 – Phrenology, An Unsubstantiated Hypothesis	p. 82

<b>IV - The Explanation of Moral Phenomena: Comte and Mill on the Architectonics of the Moral Sciences</b>	p. 89
A – The Explanation of “Moral” Phenomena	p. 90
B – Mental Differences: A Case of Composition of Causes	p. 96
C – The Centrality of Psychology in the Explanation of Moral Phenomena	p. 103
D – The Explanation of Moral Phenomena and the Method of Residues	p. 109
<b>V - A Never Ending Subjection? Comte, Mill and the Sociological Argument against Sexual Equality</b>	p. 122
A – “Method” and “Doctrine”: Mill’s Qualified Appraisal Of Comte’s Contribution to Sociology	p. 124
B – The Static Argument for Women’s Subjection	p. 127
C – The Shortcomings of the Static Argument	p. 133
D – The Dynamic Argument	p. 136
1 – The Basics of Social Dynamics	p. 136
2 – What History Tells us	p. 138
E – The Shortcomings of the Static Argument	p. 145
1 – Mill’s Alternative Ethological Account of Women’s Lasting Subjection	p. 145
2 – Sociology, Ethology and the Inverse Deductive Method	p. 147
3 – The “Biologizing” of Sociology	p. 150
<b>VI - The Ethological Fiasco: The Methodological Shortcomings of the Millian Science of the Formation of Character</b>	p. 156
A – The Need for Ethology	p. 157
B – Mill’s Style and Ambition as a “Moral” Scientist and Social Reformer	p. 160
C – Ethology and the Deductive Method	p. 169
D – The Ethological Fiasco: Complementary Explanations	p. 177

<b>VII - How To Discover One's Nature: Mill's Argument for Emancipation in the <i>Subjection of Women</i></b>	p. 190
A – Inequality, Justice and Expediency	p. 193
B – Inequality and History	p. 195
C – Inequality and the Science of Human Nature	p. 197
1 – Inequality and Biology: The “Craniological” Argument for Women’s Subjection	p. 198
2 – The Acknowledgments of the Ethological Failure and Its Consequences	p. 203
3 – The Unnaturalness of Women’s Subjection	p. 205
D – The Analogical Argument for Women’s Subjection	p. 211
E – Mill on “Feminine” Traits: Logical Inconsistency or Rhetorical Ingenuity?	p. 215
<b>Conclusion</b>	p. 231
<b>Appendix I: Comtean Studies (1993-2005)</b>	p. 240
<b>Appendix II: Comte and Mill on Biology</b>	p. 256
<b>Appendix III: Comte’s Anatomical, Physiological, Developmental and Comparative Arguments for the Subjection of Women</b>	p. 269
<b>Appendix IV: The Phrenological Sources of Comte</b>	p. 288
<b>Appendix V: A Historical Account of Mill’s Acquaintance with Phrenology</b>	p. 298
<b>Appendix VI: Mill and the Legacy of Associationism</b>	p. 312
<b>Bibliography</b>	p. 316

### Acknowledgments:

I am indebted to many people for their help during the writing of this thesis.

First of all, I would like to thank Prof. N. Cartwright for having agreed to supervise my work and for her unfailing support, her expert comments, her enlightening suggestions, and her concern for things that fall outside the domain of academic preoccupations.

I would also like to thank my second supervisor, Mr A. Voorhoeve, whose close reading and minute analysis of the various drafts of this thesis saved it from a good many mistakes and always kept me on the path of philosophical analysis when I was tempted to wander away.

I greatly benefited from the congenial and stimulating intellectual environment of the Department of Philosophy, Logic, and Scientific Method of the London School of Economics and Political Science. I would like to thank Prof. J. Worrall, Director of the Doctoral Programme, for his encouragements and patience. I owe a great debt to the administrative staff of the Department for its efficiency in dealing with all sorts of problems (J. Bohannon, T. Doyle, A. Pili, J. Rapkin, T. Scurfield, B. Tennis, K. Tiller, A. Wapplington,).

In the final year of my PhD, I had the opportunity to work as a Research Associate for the Centre for Philosophy of Natural and Social Science. Thanks to Dr S. Hartmann, Dr. E. Montuschi, and D. Rejman for taking me on board.

The generous financial and material support of the following institutions has greatly helped me to start and complete my thesis on time: the Arts and Humanities Research Council, the Graduate Research Fund and the Graduate Travel Fund of the LSE, the Forum for European Philosophy, the Royal Institute of Philosophy and the Maison d'Auguste Comte.

Thanks to G. Looren for making the journey between Paris and London shorter.

I would also like to thank the following libraries and research centres, and their staff, for their help in locating primary materials: Maison d'Auguste Comte, Paris (A. Giusti); Somerville College, Oxford (Miss P. Williams); The Wellcome Library for the History of Medicine, London; The British Library of Political Science and Economics, London; the British Library, London; Senate House Library, London; Bibliothèque Nationale de France, Paris; Bibliothèque de la Sorbonne, Paris.

Throughout the years, many individuals were kind enough to let me benefit from their expertise and advice, for which I am most grateful: D. Andler, C. Audard, T. Ball, J.-F. Braunstein, J. Carroy, L. Daston, S. Dupouy, A. Fagot-Largeault, P. Fontaine, J. Gray, I. Hacking, A. Harrington, S. Laugier, R. Plas, B. Saint Sernin, L. Snyder.

The following people made my stay in London an incredibly fruitful experience: P. Beckmann, , G. Contessa, P. Dietsch, P. Dorstewitz, L. Farmakis, D. Fennell, G. Jones, K. King, S. Larski, A. L. Lim, L. McClimans, M. Morganti, M. Polak, Y. Ramati, D. Ronnegard, M. Rossi, A. Saaristo, S. Steed, C. Stephen, M. Sivarajah, A. Virdi, I. Votsis, G. Zouros.

Finally, I would like to thank those closest to me for their support and affection: my partner Frédérique, my family and my friends. Above all, my thoughts go to my grandmother Herminie Lasselain.

## Abbreviations :

All references to the Comte-Mill correspondence are made to the following edition: O. A. Haac (ed.), *The Correspondence of John Stuart Mill and Auguste Comte*. Translated and edited by O.A. Haac, with an introduction by A. Kremer-Marietti. New Brunswick & London: Transaction Publishers, 1995. The form of referencing is as follows: Comte to Mill, October 5, 1843; in Haac [ed.], p. 188. It indicates the author and the addressee of the letter, its date, and the page in Haac's edition of the correspondence.

All references to Comte's *Cours de philosophie positive* (1830-1842) are made, for Lessons 1 to 45, to A. Comte, *Philosophie première. Cours de philosophie positive, leçons 1 à 45*. Edited, with introductions, by M. Serres, F. Dagognet & A. Sinaceur. Paris: Hermann, 1975 (abbreviated *PP*); and, for Lessons 46 to 60, to A. Comte, *Physique sociale. Cours de philosophie positive, leçons 46 à 60*. Edited, with an introduction, by J.-P. Enthoven. Paris: Hermann, 1975 (abbreviated *PS*).

All references to Mill's *System of Logic* (1843) are made to the edition of the book in the *Collected Works of John Stuart Mill* (J. M. Robson [ed.]): J. S. Mill, *A System of Logic, Ratiocinative and Inductive, Being a Connected View of the Principles of Evidence and the Methods of Scientific Investigation*. Edited, with a textual introduction, by J. M. Robson and with an introduction by R. F. McRae. Toronto & London: University of Toronto Press and Routledge & Kegan Paul, 1973 (abbreviated *SL*). The form of referencing is as follows: J. S. Mill, *SL*, VI, IX, 1, p. 897; it indicates the book, chapter, section and page of the extract quoted. Since I primarily refer to the 1843 edition of the *System*, quotes taken from later editions are indicated.

Unless otherwise indicated, all translations from the French are mine.

## Introduction :

During the last ten years, a considerable amount of work has been devoted to the different aspects of Auguste Comte's life, his thought, and the theoretical, ideological, cultural, and practical influence of his positivism. This attempt to revive the interest in Comte's philosophy after decades of indifference or contempt has resulted in a flow of contributions, within which no recess of the Comtean corpus seems to have escaped the zeal of commentators. However, there is a topic that has received hardly any attention, that of Comte's views on women<sup>1</sup>.

Of course, the reader conversant with Comte's writings will not fail to remark that if there is one question on which Comte is irremediably outdated, it is indeed on the sexual equality issue: neither his uncompromising plea for women's subjection, nor his obstinate opposition to divorce, nor his alleged demonstration of women's intellectual inferiority would convince anybody that it is still worth reading Comte's ponderous volumes. It should not therefore come as a surprise that those who are eager to defend the actuality or relevance of Comte's philosophy might prefer to avoid addressing his views on women for fear of compromising his intellectual rehabilitation.

However, I argue that, despite its unattractiveness, Comte's treatment of the issue of sexual equality offers an interesting vantage point from which to assess the consistency of his ideas. For it is a distinctive feature of Comte's "positive philosophy" that it is structured as a system in which "politics" depends on "philosophy": practical measures must derive from a theoretically-based insight and piecemeal interventions must be replaced by a comprehensive planning of social phenomena. The architecture of Comte's works itself – centered around the two 'massifs' of the *Cours de philosophie positive* and the *Système de politique positive* (the *Cours* being itself renamed by Comte *Système de philosophie positive* after the publishing of the *Politique positive*) – illustrates his cravings for a systematic philosophy conceived, as he maintains in the foreword to the *Cours*, in an Aristotelian manner: "the general system of human conceptions"<sup>2</sup>. In short, one may say that Comte intends to ground the social, political, cultural, and religious organization of modern societies on an encyclopaedia informed by the discoveries of the positive sciences and the sociological laws of the development of mankind. Accordingly, and given Comte's insistence on the systematic nature of his thought, one might expect a survey of his

views on sexual equality to shed some light on the way he articulated his “philosophy” and his “politics”, knowledge and action.

The benefit of approaching Comte’s philosophy *via* its treatment of sexual equality is that Comte had addressed the problem in a correspondence with another luminary of the nineteenth century, namely John Stuart Mill. Contrary to Comte’s, Mill’s political writings have never ceased to attract readers, most notably because of his powerful case for individual freedom and liberal principles. In particular, his outspoken plea for women’s emancipation gained him the title of one of the early figures of modern feminism. However, when Millian scholars study Mill’s views on sexual equality, they generally tend to emphasize the political aspect of the question but gloss over the epistemological and methodological dimensions of the problem. Yet Mill, just as Comte, defended the idea that sound policies should be premised on a reliable knowledge of human and social phenomena. In the case of Mill’s thought too, “philosophy” and “politics” should not be divorced if one wants to gain an adequate picture of Mill’s ideas. A close reading of his correspondence with Comte enables one to grasp the connections between these different features of Mill’s works.

The ambition of my thesis is to show that an analysis of the Comte-Mill correspondence on sexual equality can contribute to a better understanding of both thinkers, not only with regard to the political component of their philosophy, but also with regard to their methodology for the human sciences and how the former relates to the latter. More precisely, it brings out the crucial role played by biology in Comte’s social thought and investigates to what extent this distinctive feature, which has generally been overlooked, can be reconciled with Comte’s plea for an autonomous sociology. Furthermore, it explains the evolution of Mill’s argument for the emancipation of women from the *System of Logic* (1843) to the *Subjection of Women* (1869). In the course of doing so, it provides an original explanation of the failure of Mill’s pet project of an Ethology and defends Mill’s mature feminist views in the *Subjection of Women* against various charges of inconsistency.

My work primarily intends to be a philosophical analysis of the conceptual ins and outs of the discussion Comte and Mill had on sexual equality. But I am also convinced that a proper grasp of this debate cannot be obtained without setting it in its historical context. Hence the appeal, throughout my thesis, to various political, social, cultural and scientific elements so as to shed light on the intellectual

background of the Comte-Mill correspondence. Although the label is not fashionable today, I believe this methodological approach qualifies my work as a contribution to the field of the history of ideas.

I will start by demonstrating that the issue of sexual equality was a primary concern of both thinkers and that they both considered a scientifically based approach to the problem as a necessary ingredient of its resolution. It will be also shown that they radically differed about the nature of this scientifically based approach and its practical outcomes, but that their respective accounts were not free from shortcomings (**Chapter I: Comte and Mill on Sexual Equality. Context and Problem.**). I then turn to Comte's exposition of his various biological arguments for the subjection of women and single out the one based on phrenology as the main biological support of his case for women's subjection (**Chapter II: The Female Brain and the Subjection of Women. Biology, Phrenology and Sexual Equality**). In the subsequent chapter, I will review Comte's appeal to phrenology to substantiate his case for women's and will show that his reliance on phrenology in the case of sexual equality was just a particular instance of a more general endorsement of the new "physiology of the brain" as a legitimate approach to the study of mental phenomena. I will also introduce the exact content of the various criticisms levelled at phrenology by Mill and will show to what extent they were compatible with his methodology (**Chapter III: The Phrenological Controversy**). **Chapter IV (The Explanation of Moral Phenomena. Comte and Mill on the Architectonics of the Moral Sciences)** will present the theoretical framework in which Mill thought the sexual equality issue could be adjudicated and will contrast it with Comte's: whereas Comte gave precedence to biology, Mill preferred to emphasize the role of the environmental factors which he thought were responsible for women's subjection. Comte's non-biological arguments for women's subjection will be reviewed in Chapter V (as well as Mill's objections), where it will be shown that Comte's sociological arguments were in fact suffused with biological assumptions (**Chapter V: A Never Ending Subjection? Comte, Mill, and the Sociological Argument against Sexual Equality**). The next chapter will scrutinize the key theoretical element in Mill's case for women's emancipation, namely his "Ethology" or "science of the formation of character" and will analyse various explanations as to why it never developed into a proper research programme, as Mill expected (**Chapter VI: The Ethological Fiasco. The Methodological Shortcomings of the Millian Science of the Formation of Character**). Eventually, I will show how Mill overcame the ethological failure in his

*Subjection of Women* and came up with new and convincing arguments to support his feminist plea (**Chapter VII: How To Discover One's Nature. Mill's Argument for Emancipation in the Subjection of Women**).

---

<sup>1</sup> See Appendix I for a bibliography of Comtean studies since 1993. As for sexual equality, the scarce secondary literature mostly focuses on the sources of Comte's views on women and how they relate to the broader intellectual, social and political context within which they had been developed (see M. Pickering, "Angels and Demons in the Moral Vision of Auguste Comte", *Journal of Women's History* 1996, 8, pp. 10-40; A. Le Bras-Chopard, "L'idéal féminin d'Auguste Comte. Convergences et dissonances avec ses contemporains socialistes", in M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), *Auguste Comte Aujourd'hui*. Paris: Kimé, 2003, pp. 170-183). A. Petit and B. Bensaude-Vincent explore the views of Comte in the *Système de politique positive* but do not consider the *Cours de philosophie positive*, thereby eschewing the consideration of the methodological aspect of the question of sexual equality (A. Petit & B. Bensaude-Vincent, "Le féminisme militant d'un auguste phallocrate (Auguste Comte, 'Système de politique positive')", *Revue philosophique* 1976, 3, pp. 293-311). S. Kofman's *Aberrations. Le devenir-femme d'Auguste Comte* (Paris: Aubier-Flammarion, 1978) addresses some of the problems I am interested in but does so from a psychoanalytic perspective that I do not endorse.

<sup>2</sup> A. Comte, *Philosophie des sciences*. Edited with an introduction and notes by J. Grange. Paris: Gallimard, 1996, p. 45.

## I – Comte and Mill on Sexual Equality : Context and Problems.

Although the topic of sexual equality quickly became a crucial element of the discussion between Comte and Mill, many other questions were addressed in their letters, and it is likely that their willingness to correspond with one another was motivated by other reasons than the expected benefit of a discussion on women's condition. Accordingly, it will be useful to provide an account of the beginnings of the correspondence (IA) and of the circumstances that led them to address the issue of sexual equality (IB), as well as a historical and doctrinal presentation of their views on the subject prior to the correspondence (IC). The aim of this chapter is to demonstrate that the issue of sexual equality was a primary concern of both thinkers and that they both considered a scientific approach to the problem as a necessary ingredient of its resolution. It is also shown that they radically differed about the nature of this scientific approach and its practical consequences. In the course of this discussion, the various problems associated with Comte's (IIC1) and Mill's (IIC2) respective ways of solving the issue of sexual equality are introduced.

### A – The Beginnings of the Comte-Mill Correspondence.

What were Mill's intentions when he took the initiative of sending his first letter to Comte on November 8, 1841? For want of textual evidence, one may conjecture that Mill, who was revising the draft of what would eventually appear in 1843 as the *System of Logic*, was eager to benefit from the comments and expertise of the author of the *Cours de philosophie positive*<sup>1</sup>, one of the few recent books - along with Herschel's *Preliminary Discourse on the Study of Natural Philosophy* (1830) and Whewell's *History of the Inductive Sciences* (1837) and *Philosophy of the Inductive Sciences* (1840) – that studied the logic and reasoning at work in the natural sciences. However, Mill was certainly attracted to Comte because of something that was present in both Herschel's and Whewell's writings but remained undeveloped. For, like Herschel and Whewell, Mill thought that the methods exemplified by the different sciences could be applied to the study of social phenomena. As R. Yeo has shown, the 'public discourse' of science in the 1830s underlined the

accessibility, singularity, and transferability of scientific method “beyond the study of nature to the study of society” (R. Yeo, “Scientific Method and the Rhetoric of Science in Britain, 1830 – 1917”, p. 263)<sup>2</sup>. Yet, Herschel’s pronouncements in the *Discourse* remained programmatic: it was hoped that the success of the methods of the natural sciences would help transform legislation and politics into “experimental sciences” (J. Herschel, *A Preliminary Discourse*, p. 73)<sup>3</sup>, but no clue was given as how to bring about such a change. As for Whewell, although he insisted on the desirability of turning these subjects into scientific inquiries, he was also wary of not pushing the analogies between the physical and the moral sciences too far; in particular, he remained suspicious of the importation of the concepts and methods of the former into the latter<sup>4</sup>. By contrast, Comte was a consistent advocate of what I shall call “the scientificisation of politics”: he not only preached the extension of a scientific approach to social phenomena; he also attempted to establish the laws of these phenomena and to infer from them appropriate policies. It is likely that such a plan appealed to Mill, since it constituted a way to fulfil his hope of contributing to the happiness of mankind<sup>5</sup>.

As for Comte, it is also difficult to state the reasons that prompted him to enter into an exchange with an unknown English correspondent. However, Mill’s deferential and somewhat submissive tone in his first letters may have convinced Comte that he was dealing with a foreign disciple<sup>6</sup>. After all, Mill praised Comte’s distinction between the temporal and spiritual powers, shared his belief in the necessity of the true social science he was trying to establish while they corresponded (Comte was about to finish the sixth volume of the *Cours*, which contained the final part of his sociology), agreed globally with his appraisal of the intellectual and moral advancement on the Continent and in England, and also felt the need for a moral regeneration.

On a more personal note, Comte also appreciated Mill’s friendly concern for his troubled marital relation with his wife Caroline Massin, which his correspondent expressed as early as July 1842:

“You doubtless know me well enough by now to believe I am sincere when I tell you how sad I felt upon learning how the inveterate distaste you feel in a position, so little suited to your taste, has now been compounded by moral pain. I do not yet dare to ask, here, for more detail than you convey of your own accord. Later perhaps I shall have secured the right to share in your suffering. As far as relieving it when it is real, it is ordinarily fatuous to think oneself capable of that” (Mill to Comte, July 11, 1842, in Haac [ed.], p. 83).

As for what regards Comte's "position", Mill was referring to the difficulties encountered by the former student of the *Ecole polytechnique* to secure a full-time professorship in his home institution<sup>7</sup>. But what about the "moral pain" mentioned by Mill? At first, Comte was quite reluctant to write about it, but he appreciated Mill's tact (Comte to Mill, July 22, 1842, in Haac [ed.], p. 88). However, he eventually gave way to his correspondent's well-intentioned curiosity about the cause of his "moral suffering" (*Id.*). In his next letter, Comte exposed extensively the details of his intimate life:

"Our personal friendship (...) causes me not to wait any longer to give you an important piece of personal news. A fundamental change, more favorable than unfavorable, has occurred in my household since my last letter. Madame Comte has left me voluntarily and probably irrevocably. For seventeen years I have been married, as a result of an unfortunate love to a woman of rare moral and intellectual qualities, but brought up under blameworthy principles and with a false notion of the essential function that her sex must play in the human economy. Her total lack of affection for me has never made it possible for me to overlook either her resistance to my authority or her despotic character. There have been none of the compensations of a loving disposition, the only special quality in which women are irreplaceable, and the power of which modern anarchy prevents them from appreciating as they should.

Thus, my philosophical endeavors have been carried on and completed not only in the face of material difficulties, as you know, but also in the midst of more painful and absorbing disturbances, the result of an almost constant civil war of the most intimate kind, the confrontation in the home. The event which has just taken place makes me hope that from now on, even if I lack the happiness at home for which I was made but which I had to give up a long time ago, I shall at least have the sad peace of my loneliness that now completely envelops me" (Comte to Mill, August 24, 1842, in Haac [ed.], p. 98).

As it now clearly appears, Comte's difficult personal situation (both with regard to the means for securing his livelihood and to his marriage with Caroline Massin), the need for solace it induced in him, and his longing for intellectual recognition, certainly contributed to his decision to go on with the correspondence. However, what is of interest to us here is not so much the accuracy of Comte's account of his estrangement from his wife<sup>8</sup>, but rather the discussion it initiated between the two thinkers, since Comte's effusions about his personal difficulties led them to address the issue of divorce and, by extension, that of the condition of women.

## B – From Divorce to Human Nature.

Besides its importance for the understanding of the relationship between Comte and Mill, the exposition of his “personal secret” (Comte to Mill, August 24, 1842, in Haac [ed.], p. 99) by Comte provides us with a convenient starting point for our investigation. For the long passage quoted above was not only intended as a *pro domo* pleading but also as a reasoned and impartial appraisal of the causes which prompted Caroline’s departure. There always could be, Comte maintained, an intellectual and practical benefit to an analysis of the intimate details of one’s existence if it was done philosophically. That was exactly what he intended to do in his letters to Mill and it was even to become one of the mottos of the Religion of Humanity, namely “Live Openly”<sup>9</sup>.

In such a perspective, Comte’s narrative of his domestic situation must be taken as a genuine piece of objective analysis. According to Comte, Caroline was endowed with “rare moral and intellectual qualities” (*Ibid.*, p. 98)<sup>10</sup>. But he also held that her incapacity to fit her role as a woman within the domestic sphere caused the failure of their marriage. It was Caroline’s insubordination, her “despotic character” (*Id.*), her “total lack of affection” (*Id.*), which constituted as many obstacles to the fulfillment of her duties as a wife. In brief, Caroline’s assertiveness was a symptom of her ‘manhood’. She was abnormal, Comte argued, to the extent that she failed to comply with the norms proper to her social role, namely as a source of affective support within the household, “the only special quality in which women are irreplaceable” (*Id.*) as Comte put it. And, as he suggested, since his wife had been “brought up under blameworthy principles and with a false notion of the essential function that her sex must play in the human economy” (*Id.*), it was to be feared that her misconduct was not purely idiosyncratic but resulted from an erroneous appraisal, characteristic of the “modern anarchy” (*Id.*), of women’s social role and status<sup>11</sup>.

Of course, all this may sound like the grandiloquent pronouncement, made under the cloak of an alleged objective perspective, of a deserted man turned bitter, but one has to keep in mind that it had been Comte’s constant preoccupation to present the events of his entire life in the light of his own philosophy. Such an explanation certainly had a ‘therapeutic’ value for its author, by exempting him from considering his possible responsibility, but it was much more than that, for Comte really thought that one ought to live by one’s principles: his system was

intended to provide one with both an interpretative framework to apply and a set of moral injunctions to practise. In that sense, the previous biographical account paved the way for a genuine sociological analysis.

That Mill understood Comte's confession in this way – as a private matter that must be dealt with as objectively and rationally as possible – was attested by his reply to his French pen-mate regarding the practical outcome of the situation. Given the absence of children, Mill thought that separation was the best solution available. However, he immediately qualified his view with respect to Comte's own principles:

“Such incompatibility, which often exists without either one side or the other being truly and seriously at fault, has so far led me to believe that the question of divorce is moot, just like a number of other issues of private morality, on which you have pronounced judgment and decided a long time ago. I am far from harboring opinions contrary to yours. I have, truthfully, no fixed opinion here and tend to believe ... [words missing in the manuscript] for, to arrive at a definitive judgment, one needs a more profound knowledge of human nature<sup>12</sup>, both in its general and in its particular applications.

My conversion in this matter is perhaps reserved for your *Political Treatise* [i.e. Comte's *Système de politique positive*, eventually published between 1851 and 1854, after the end of the correspondence]” (Mill to Comte, September 10, 1842, in Haac [ed.], p. 101-2).

At this point, one may say that the truly philosophical part of the discussion concerning sexual equality, and the cognate questions of the destination of marriage and possibility of divorce, has been engaged, and that Mill's statement set up the terms in which it was to be broached. First of all, Mill was aware that the issue of divorce, in the present state of affairs existing in the most advanced European countries, was *par excellence* a vexed one for it touched upon the religious nature of the marital bond and the patriarchal organization of the relations between the sexes. Accordingly, prudence should prevail regarding these matters. Secondly, he also knew that Comte considered his views on that issue to be the only “scientific” alternative to traditional justifications for the indissolubility of marriage. Thirdly, Mill's alleged agnostic stance rested on the firm belief that any claim for or against should rest on a proper and comprehensive “knowledge of human nature, both in its general and in its particular applications”. Finally, Mill did not regard Comte's published writings on the subject to have settled the question definitively; hence his appeal to Comte's future *Système de politique positive* for better arguments. Accordingly, the correspondence was to serve for both as a test for their respective methodologies for the human sciences, their conceptions

of women's nature and social position, and the accounts they offered for their relations.

In other words, the consideration of what could have seemed a mere personal or legal matter sparked a debate on the foundations and methods of the science of human nature. In this lay the appeal of "the scientificisation of politics": it promised that the "art" of politics would eventually find its basis in science.

### **C – The "Scientificisation of Politics": Prospects and Problems.**

Mill's willingness to engage with Comte in this discussion about divorce, and the latter's eagerness to take it up, did not only reflect the personal nature of their correspondence but also their shared belief that the post-revolutionary era called for a moral regeneration. For both, the French Revolution of 1789 was a necessary historical step to the extent that it enabled Western European societies to get rid of an outdated social and political system. It furthered the development of science, industry, and trade, by challenging the traditional order of human relations upheld by the domineering classes of the *ancien régime*, particularly the landed nobility and the Church. However, this progressive influence of the revolutionary ideals was merely transitional, for it was first and foremost negative or critical: it had destroyed the *ancien régime* but failed to provide the guidelines for a renovated social organization. Such an incapacity was blatant, as the repetitive failure of the succeeding forms of political institutions in France or the limited modifications of the electoral franchise brought about by the 1832 Reform Bill in England illustrated. A new set of moral and social ideas was needed, and both Comte and Mill thought they could take part in its elaboration.

#### **1 – Comte against Divorce: The Defence of the Family as the Basic Social Unit.**

For Comte, the debate about divorce was one symptom of the "modern anarchy" characterizing the transitional nature of the post-revolutionary era. The inability of theology or metaphysics to defend the principle of the indissolubility of marriage offered an opportunity to demonstrate that positive philosophy could provide human institutions with a rationale that would make them immune to all sorts of attacks. Even more so if one followed Comte in maintaining that the

family was the primary element of social life. Hence the urgency of setting it on a secure theoretical footing.

This concern surfaced in the Fiftieth lesson of the *Cours de Philosophie Positive* entitled “Preliminary Considerations on social statics, or general theory of the spontaneous order of human societies”, which is a key element of the “dogmatic part of social philosophy” (as opposed to the “historical part” introduced in the fifth and the sixth volume), and which was published towards the end of 1839 in the fourth volume of the *Cours*. It was certainly from that lesson that Mill drew the impression that divorce was an issue on which Comte had “pronounced judgment and decided a long time ago” (Mill to Comte, September 10, 1842, in Haac [ed.], p. 101). Family was indeed central to Comte’s social statics.

To put it briefly, social statics is the synchronic study of all the elements out of which societies are made, whereas social dynamics study the evolution of these societies. Accordingly, one of the goals of social statics is to identify the elements constitutive of social phenomena, that is individuals, families, and societies themselves. Individuals are described as endowed with a natural instinct for sociability, characterized by the preeminence of affective faculties over intellectual ones, and led in their actions by the consideration of their well-being. As for the family, it constitutes the first form of society, for only such an association enables the social dispositions inherent in individuals to thrive. They develop by way of the rudimentary division of labour existing between husband and wife, which foretells the hierarchical cooperative system to be found in societies proper. As Comte put it, “the family spontaneously presents us with the genuine necessary germ of the diverse essential dispositions characterizing the social organism” (A. Comte, *Physique Sociale*, p. 183)<sup>13</sup>, “domestic life [being] the constant basis of social life” (*Ibid.*, p. 184). Accordingly, since the family, as conceived by Comte, is a strictly patriarchal association (in which the husband – or the father - provides for the needs of his dependants and supervises all activities, while the wife takes care of the household), and given that society is just a development of the organizational features of the domestic realm, subordination – of wife to husband, of children to parents – is to be mirrored at the level of society itself:

“Whatever empty notions are to be formed today about social equality, any society, even the most limited, necessarily and obviously presupposes not only diversities but also some inequalities: for there could not exist a genuine

society without a permanent cooperation to a general operation, carried on by way of distinct and suitably subordinated means. Now, the most complete realization possible of such elementary conditions inevitably belongs to the family only, in which nature has borne all the essential costs of the institution" (*Ibid.*, p. 249).

So, far from being a side issue raised for the sake of comprehensiveness, the vindication of the patriarchal model of the family is central to Comte's project of social regeneration: if society is to be organized authoritatively according to a subordination principle, and if the family is indispensable both as a source and as a model for the application of this principle to society at large, any attack on the basic structure of the family has to be opposed. Comte certainly regarded the evolution of French legal arrangements concerning divorce that was brought about by the Revolution as a symptom of such a disruptive trend. And even though divorce had been abrogated by the time Comte was writing, its possible rehabilitation remained in his eyes a threat to customary mores<sup>14</sup>.

Comte's fear of a rehabilitation of divorce was certainly aroused by the intense militant activity of these "bold sophists", as he called them, "who have directly attempted to axe metaphysically down to the elementary roots of social order by rehearsing with an undeniable timeliness ancient aberrations" (*Ibid.*, p. 185)<sup>15</sup>. There was indeed, in the first third of the nineteenth century in France, a vast movement – both political and philosophical – which vigorously denounced the social evils created by the prohibition of divorce and the received conception of marital relations. However, Comte overstated his case when he claimed that those who advocated the rehabilitation of divorce were by the same token intending to destroy the family. To the contrary, the "divorciers", as Francis Ronsin recalls<sup>16</sup>, repeatedly voiced their attachment to the traditional monogamist family, which only the Saint Simonians<sup>17</sup> and the Fourierists<sup>18</sup> (at least the few who endorsed the whole doctrines of Enfantin and Fourier without reservations) questioned.

The goal of this movement was to regenerate the familial institution, especially through a reform of the legal dispositions concerning marriage. However, their attempt differed radically from that of Comte, for they refused the latter's principle of subordination and placed their hope in a more balanced relation between husband and wife, which would be characterized by a respect for the individual's rights to begin and end the relation at his or her own will (if there were children, provisions being made for their education and with their interests in

view) and a share in the decisions concerning the household. But this conception of marriage assumed that women had the same rights as men to choose the life they wanted to live, and that along with their male counterparts they partook in the intellectual and moral capacities enabling them to do so. By contrast, because he held women to be deprived of the very capacities that would allow them to be treated on a par with men, Comte categorically refused this conception of marriage.

Once set in context, the issue of divorce appears as only one element of a much broader social question: with the French Revolution and the spreading of its principles all over Europe, the issue of sexual equality had the occasion to surface on the forefront of the political debate. If the fall of the *ancien régime* meant that the only ground for distinguishing between individuals was merit, and that any distinction based on birth, wealth, or religion was illegitimate, should not the principle of equality be applied to relations between the sexes? If the characteristic of modern societies was to replace the “law of the strongest” by the “rule of law”, why would the domestic sphere be exempted from such a movement of emancipation? If the lower male elements of society had been emancipated, why would the same process not occur for women?

How was Comte to counter such claims? Simply by turning the subordination of one sex to the other into a “universal natural disposition” (*Ibid.*, p. 184). The demonstration of such a proposition was the burden of the Fiftieth lesson of the *Cours de Philosophie Positive*, whose argument can be summarized as follows. Mankind is a sociable species that demands to be organized in a hierarchic manner (the subordination principle) so as to satisfy the needs of its members. This hierarchic structure rests in its turn on the respective capacities of the different individuals (their “nature”), which define their social role and status. There exists a sex-based distinction according to which males are endowed with character traits appropriate for intellectual and supervisory tasks proper to the public sphere whereas women’s distinctive traits fit them for the role of men’s affective auxiliaries in the private sphere. For clarity’s sake, one could venture the following formalization of Comte’s argument:

1. In order to satisfy the needs of their members, societies have to be organized hierarchically in all their aspects (public and private)

2. There exist natural differences that make males fit for supervision and women for obedience.

---

3. Societies should be organized according to the patriarchal model.

What would it take for Comte's argument to be sound? At first sight, once the premises are granted, the conclusion seems to follow. But what about the premises? As to the first, one may be surprised that the subordination principle, which has proved an efficient tool – through division of labour and the hierarchic structure of cooperative endeavours - for the maximization of the material well-being at the level of the community, is extended to the private sphere. Should not individuals be left free to decide to whom they want to be associated with and on which terms (equalitarian or not)?

However, if we stick to Comte's ideas, we ought to refuse such restriction of the scope of application of the subordination principle, for he argued that all social interactions must be conducive to an increase in well-being for society at large: the positivist motto "*Vivre pour autrui*" ("Live for Others") exacts from individuals that their altruism extends outside the circle of their relatives.

So, let us assume for the sake of argument that the first premise is true: one may thus maintain that the subordination principle still applies to all social interactions. Obviously, the practicability of Comte's organisational proposal depends on the availability of knowledge of human capacities and abilities that would enable him to cash out empirically his factual premise ("males are fit for supervision and women for obedience"). Accordingly, if one wants to refute his argument, perhaps it would be worth leaving aside the first premise (which is not entirely counter-intuitive and benefits from some empirical support) and taking the second as the primary target.

What Comte needs in order for his argument to be sound is a premise establishing that men are endowed with specific character traits enabling them to carry out supervision duties in ways unavailable to women. The hierarchical organization should be based on natural differences in capacities, if such

differences exist. These features, Comte finds in the biological make-up of individuals.

“The sound biological philosophy, especially with regard to the important theory of Gall, begins to be able to treat as it scientifically deserves these chimerical revolutionary pronouncements concerning the alleged equality of the two sexes, by demonstrating directly, either by way of anatomical examination, or by way of physiological observation, the radical differences, both physical and moral, which, in all animal species, and particularly within the human race, separate one from the other, notwithstanding the common preponderance of the specific type” (*Ibid.*, p. 254).

Now, what is puzzling in Comte’s argument is not so much its explicit endorsement of Gall’s pseudo science of phrenology or the social and political views it is intended to support, but rather its reliance on biology. And this is puzzling because it sits ill with the “encyclopaedic scale of the sciences” that structures the *Cours de philosophie positive*.

As is well-known, Comte endorsed a non-reductionist view of science, according to which each science depends on another for its methods and doctrines but is nonetheless irreducible to it because its object displays new features requiring a specific approach and giving rise to new laws<sup>19</sup>. The conclusion of the *Cours*’ First Lesson nailed down Comte’s conviction unambiguously: the very project of a single unified and all-encompassing science he regarded as illusory.

Comte held such an ideal to be out of reach:

“I am utterly convinced that these attempts to explain all phenomena by way of a single law are highly chimerical, even when conceived by the most competent minds. Our intellectual resources are too narrow, and the universe is too complex, to leave us hope that such a scientific perfection is within our reach” (Auguste Comte, *Philosophie première*, p. 40)

To illustrate Comte’s non-reductionist views, let us take the example of biology. It depends on physics and chemistry because physical and chemical laws apply to living bodies, but they also exhibit specific phenomena (which are relative to their “organization”, like reproduction or pathologies) which have laws of their own and require an original method to be studied (Comte singles out comparison as the distinctive method of biology). As he puts it, organic phenomena

“are indeed obviously more complicated and more specific than the others [inorganic phenomena]; they depend on the latter, whereas the latter do not at all depend on them” (*Ibid.*, p. 55).

Similarly, if one considers the study of man, a distinction must be drawn between the features of the individual in itself and the features of the individual *qua* belonging to a sociable species. To biology (“organic physics”, as Comte puts it) belong considerations of the first kind, whereas “social physics” (what he would later call “sociology”) take charge of the second kind of phenomena. But the same kind of dependence that exists between physics and chemistry on the one hand and biology on the other hand also obtains between “organic physics” and “social physics”:

“The second order of phenomena is obviously more complicated and more specific than the first; it depends on the latter without influencing it. (...) In all social phenomena, one first observes the influence of physiological laws on the individual, and then the influence of something specific which modifies their effects, and which is related to the action of the individuals on one another; in the human species, that action is radically complicated by the action of each generation on the one following it” (*Ibid.*, p. 57).

Accordingly, though he stresses the importance of biology for sociology, Comte nonetheless advocates the irreducibility of the latter to the former and argues that what make social phenomena specific are their collective (the interaction of individuals gives birth to a *sui generis* kind of features) and historical dimension.

“the necessary subordination between these two studies does not, as a few eminent physiologists had been led to believe, constrain one to view social physics as a mere appendix of physiology. Even though the phenomena are certainly homogeneous, they are not identical, and the separation of the two sciences is truly fundamental. For it would be impossible to treat the collective study of the species as a pure deduction from the study of the individual, since the social conditions, which modify the action of physiological laws, must be considered first. Consequently, one must found social physics on a body of direct and specific observations, without neglecting, as required, the intimate and necessary relation it entertains with physiology as such” (*Id.*)

These developments of the *Cours*, which theorized both the status of the science of social phenomena as a specific discipline and the relative independence of the different sciences in the encyclopaedic scale, have led to consider Comte as one of sociology’s forefathers<sup>20</sup> and as an early advocate of the “disunity of science” thesis<sup>21</sup>. However, Comte’s treatment of the sexual equality issue seems to challenge both descriptions.

As I will argue throughout my thesis, it was indeed the case that Comte gave precedence to biology over sociology in the settlement of the sexual equality debate. As the formalized version of Comte's argument indicated, the onus of his demonstration lay with the biological premise. What he chose to argue from to adjudicate the issue of women's role in society was not an account of the nature and history of inter-individual interactions (as would be required of sociology by Comte's own admission) but a biological account of character traits. And even in what Comte took to be his properly sociological argument for subjection, his ideas were suffused with biological assumptions.

If this is the correct interpretation to give of his argument for women's subjection, Comte's conception of an autonomous sociology, understood as "the collective study of the [human] species" in which "the social conditions (...) must be considered first", is seriously endangered since we have an instance of a sociological problem in which sociology adds nothing to biology, except a few lights on the way social conditions have troubled the natural manifestation of people's capacities. But surely, this does not fit Comte's ambitious expectations for sociology.

This discrepancy between Comte's methodological principles (his endorsement of the "disunity of science" thesis and his promotion of sociology as a specific discipline) and his actual manner of solving the issue of sexual equality (the bypassing of sociology in favour of biology) was not without compromising the "scientificisation of politics". For the appeal of this project lay in the deduction of the practical measures of the "arts of politics" from a political science *sui generis*. Comte's standing as a positive philosopher also depended on his ability to claim for himself the discovery and establishment of sociology as an independent science, but his treatment of the sexual equality issue belied his aspiration to originality. On the other hand, Comte did not take women's subordination to be an adventitious element of his social theory that could be disposed of without harmful practical consequences.

Accordingly, Comte's predicament was the following: either he stuck to his methodological principles but gave up his belief in women's subordination; or he retained his biological demonstration for the latter but failed to live up to the standards of his own methodology. Yet, a third way was also conceivable, in which Comte would have it both ways: by finding independent and genuine sociological

support for his belief in the necessary subordination of women. This last possibility would have attracted him incomparably more than either of the branches of the previous alternative, for it would have singled him out as a true positive social philosopher. The interest of the correspondence with Mill lies in its ability to provide some hints as to why Comte failed to escape this predicament.

## 2 – Mill’s Feminism: Is Mill’s Liberal Naturalism Consistent?

Mill shared with Comte the prospect of a “scientificisation of politics”. His ambition was to take part in such a movement by extending the methods of the natural sciences to the objects of the moral sciences: Mill regarded the first five Books of his *System of Logic* as so many necessary steps towards Book VI, which contained his reflections “On the Logic of the Moral Sciences”:

“Here, therefore, if anywhere, the principles laid down in the preceding Books [of the *Logic*] may be expected to be useful” (J. S. Mill, *SL*, VI, I, 1).

Mill undoubtedly agreed with Comte that the issue of divorce, and by extension that of sexual equality, would benefit from the “scientificisation of politics”, for he argued that “to arrive at a definitive judgment [regarding this matter], one needs a more profound knowledge of human nature, both in its general and in its particular applications” (Mill to Comte, September 10, 1842, in Haac [ed.], p. 102). Notwithstanding this methodological agreement, Mill did not think that a scientific appraisal of the question of sexual equality would lead to the practical conclusions upheld by Comte. To be sure, Mill adopted an agnostic stance at the opening of the debate: “I am far from harboring opinions contrary to yours. I have, truthfully, no fixed opinion here” (*Ibid.*, p. 101-2). But such an attitude may be ascribed to Mill’s desire not to compromise an exchange which he regarded as potentially beneficial for his own intellectual development. For, by the time he started corresponding with Comte, Mill was already a convinced – if not yet outspoken – supporter of women’s emancipation.

A study of Mill’s early public and private writings indicates that by 1841 Mill had made up his mind regarding the sexual equality debate. Of course, his position did not have the logical and rhetorical consistency it finally gained with

*The Subjection of Women* (1869). But many arguments and numerous factual examples he resorted to in this book seem to have originated years before its publication, mostly in the 1830s as textual evidence indicates. Accordingly, he was well equipped to engage with Comte.

Without entering into the historical details of the genesis of Mill's early feminism, one may single out three main components of his views on sexual equality: the conviction that women were exposed to unjust discrimination<sup>22</sup>; the analysis of the sources of their subjection, especially in marriage<sup>23</sup>; and the search for possible ways of improving their plight<sup>24</sup>. These three elements can be found in one single piece by Mill entitled "On Marriage", written in 1832-1833<sup>25</sup>, and which has the advantage of presenting us with an articulated version of Mill's views on sexual equality. However, since the logical structure of this essay is not obvious at first sight, I will reformulate Mill's argument independently of its actual exposition.

According to Mill, rather than tackling the issue of the nature of social arrangements (and especially marriage) headfirst, one should rather turn to the social agents on which they depend in order to define what suits their nature best:

"The question is not what marriage ought to be, but a far wider question, what woman ought to be. Settle that first, and the other will settle itself. Determine whether marriage is to be a relation between two equal beings, or between a superior and an inferior, between a protector and a dependent; and all other doubts will be easily resolved" (J. S. Mill, "On Marriage", p. 42).

One should not be misled by Mill's somewhat confusing terminology. For he starts with what apparently resembles a normative question ("what woman ought to be"), and then goes on showing that there "is no natural inequality between the sexes" (*Id.*), that is by stating a matter of fact. The ambiguity can be dispelled if one clearly identifies Mill's goal in that instance and rephrases his argument. One may surmise from the previous quotation that Mill wants to define the appropriate nature of marriage and considers the following alternative: either marriage is an equalitarian relation or it is not. If it is not, a cause must be found to this inequality.

Here, the pattern of reasoning is the one typically used by Radicals: individuals should be treated equally unless good cause can be shown to do otherwise. Now, the decisive step is taken when Mill argues that there is no natural inequality between the sexes. In fact, Mill does not say that the natural fact of equality is the source of positive normative considerations on women (what a

woman “ought to be” in the sense of, say, what are the values she must conform to), but rather that the natural fact of equality disqualifies a certain number of actions or institutions because they are detrimental to the happiness of women. For instance, if marriage is considered a relation between a superior and an inferior, there must be evidence of either the superiority of one partner or the inferiority of the other. Since there is no such evidence, one ought not view marriage as a relation of dependence. Hence Mill’s conclusion:

“a woman ought not to be dependent on a man, more than a man on a woman, except so far as their affections make them so, by a voluntary surrender, renewed and renewing at each instant by free and spontaneous choice” (*Id.*)

We encounter here the first tenet of Mill’s feminism, i.e. his conviction that social arrangements founded on a principle of sexual subordination are discriminatory.

Consider now the factual premise on which Mill’s argument for equality rests. In this regard, Mill is extremely confident: “But in this question there is surely no difficulty” (*Id.*). However, since the inference developed by Mill is not that straightforward, let us repeat the structure of his argument: either marriage is an equalitarian relation or it is not. If it is not, a cause must be found for this inequality. What about physical (what Mill calls “natural”[*Id.*]) inequality? After all, if we are talking about a dependence relation, it would be sensible to conjecture that the dependence might be relative to a superiority based on physical strength. Here, Mill’s reply is twofold. Firstly, he claims that physical strength cannot be counted as a legitimate measure of superiority. Secondly, he maintains that, even if it were the case, it is not sure that men would be entitled to govern women.

The second assertion is undoubtedly the weaker<sup>26</sup>, and that is certainly why he chooses to argue for the first. Consequently, he challenges the very fact that superiority could be based on physical strength. His transition is rather astute, for he knows who he has to convince, i.e. English Victorian males who think that their superiority is not that of the body but that of the soul. And “if bodily strength is to be the measure of superiority, mankind are no better than savages” (*Id.*). Equate “mankind” with England, and the argument based on the conflation of superiority and physical strength is defused. Hence the following historical claim:

“Every step in the progress of civilization has tended to diminish the deference paid to bodily strength, until when now that quality confers

scarcely any advantages except its natural ones: the strong man has little or no power to employ his strength as a means of acquiring any other advantage over the weaker in body" (*Id.*)

Without question, Mill's claim draws on a point which is at the heart of the philosophy of history and political philosophy of the Enlightenment: namely, that the advent of modernity is coeval with the demise of the "law of the strongest" and the rise of the "rule of law". Authority is now entrusted to those who are entitled to it by their personal merit. But the change is also certainly even more visible if one considers industry, in which the use of machinery has radically modified the importance of manual and physical labour in production. In short, Mill wants us to understand that superiority based on strength is something of the past. And gone with it is the idea that marriage is a relation "between a superior and an inferior, between a protector and a dependent" (*Id.*)<sup>27</sup>:

"in the progress of civilization, the time has come when women may aspire to something more than merely to find a protector. The condition of a single woman has ceased to be dangerous and precarious: the law, and general opinion, suffice without any more special guardianship, to shield her in ordinary circumstances from insult or injury: woman in short is no longer a mere property, but a person, who is counted not solely on her husband's or father's account but on her own. She is now ripe for equality" (*Ibid.*, p. 49).

However, from the fact women's subordination cannot be grounded on mere physical inferiority, it does not follow, as Mill seems to have it, that subordination should be discarded altogether. For, even if their physical inferiority is disregarded as a relevant factor, it may well be the case that there exists another reason that would legitimate women's subjection to men. The obvious candidate is intellectual or moral inferiority: if women lack certain capacities or character traits usually associated with the exercise of autonomy, then they should be subjected to those who are endowed with them, *i.e.* males. Accordingly, if Mill wants his argument to be valid, he needs to add a premise to the effect that women are not intellectually or morally inferior to men. Then the inference would hold.

Unfortunately, no such premise is to be found in Mill's essay. One may thus surmise that the correspondence with Comte would enable him to elaborate this premise and that it would rest, in the last resort, on this "more profound knowledge of human nature" (Mill to Comte, September 10, 1842, in Haac [ed.], p. 102). What would it look like? Given Mill's empiricist and associationist leanings, one can conjecture that the best candidate would consist in an environmentalist theory of human capacities, stating that under normal conditions (for instance, the

absence of any inborn physical deficiency affecting one's intellectual faculties), men and women subjected to a similar range of psychological stimulations (affective, moral, rational) display on average the same capacities and that any difference observed in their achievements is due to unrecorded environmental stimulations. As the reader familiar with the *System of Logic* knows, such a theory falls within the realm of Mill's pet project of an Ethology, the science of the formation of characters.

What is of interest to us here is that, even if Mill fails, in the piece "On Marriage" to establish the intellectual equality of men and women, he nonetheless provides his readers with an ethological rationale as to why women are still subjected to men in a time when they are more or less freed from physical constraint. This means that, although one still lacks the experimental setting appropriate to the demonstration of the natural equality of men and women, one can still rely on an ethological analysis to assess the sources of women's subjection, i.e. the second tenet of Mill's feminism.

Mill regards women's education as one of the main causes of their subjection, which usually takes the form of them being confined to the household and its domestic chores, with no hope for an independent existence. He details this reproductive mechanism when he comes to inquire into the "means by which the condition of a married woman is rendered artificially desirable" (*Id.*). After having set aside unlikely explanations (it cannot be because of an improvement of women's legal or civil condition subsequent to marriage, for there is none), he points out what he thinks is the main cause of the enduring attraction of marriage:

"It is not law, but education and custom which make the difference. Women are so brought up, as not to be able to subsist in the mere physical sense, without a man to keep them" (*Id.*)

Since girls are brought up in the idea that they are destined to be men's dependents in all decisive regards (security, subsistence, affection), they do not feel - and they are prevented by their parents and acquaintances from realizing it – the urge to develop character traits such as self-reliance, fortitude, or initiative. To the contrary they are prompted to cultivate alleged feminine character traits such as patience, temperance, or benevolence for relatives, which suit their social position. Therefore they end up being convinced that they do not partake of these qualities so highly praised in men, and imagine that their mere existence is impossible

without them. Such is the trick of men-governed societies: to convince women that they are not fit for autonomy because of their intellectual capacities and that they benefit from the system of dependence to which they are subjected (*Id.*, p. 41-2).

Given Mill's endorsement of women's cause, the previous ethological analysis leads us naturally to the third tenet of his feminism, the search for possible ways of improving their plight. If women are to further their social position, Mill maintains, they must be educated so as to be able to earn by themselves their livelihood, that is by getting trained in a certain profession. By the same token, they might be able to develop the character traits associated with such a training (perseverance, ingenuity, etc.), which are certainly elements partly constitutive of autonomy and independence<sup>28</sup>, and might be able to express, on a par with men, the full range of their intellectual capacities.

Now, in a society where marriage has become a matter of choice and not of necessity, what about divorce<sup>29</sup>? Mill lists three main arguments in favor of indissolubility. First, he acknowledges the fact that repeated failures in finding the right match may contribute to the moral debasement and disillusionment of those who fail to encounter the appropriate partner. Secondly, in case the couple has children, he invokes the necessity of guaranteeing for them a familial environment in which they will thrive. Thirdly, he underlines the fact that if one is not bound and can substitute one partner for another, that could tend to prevent one's moral improvement, for one could always put the blame on the other. Now, Mill maintains one should not fear that people will part with each other on the first instance of disagreement. For, in a "tolerably moral state of society" (*Ibid.*, p. 48), promiscuity will still be an object of moral reprobation. As for children, Mill ventures that the new modalities of marriage (in which the partners are free to enter or not into the relation), by elevating the morality of individuals, will lead couples to have children if and only if they are sure that their affection for each other is true and durable. And if they decide to divorce, he hopes that they will eschew total separation for the children's good. But Mill sees no serious reasons for refusing the possibility of divorce. Hence his conclusion:

"The arguments, therefore, in favour of the indissolubility of marriage, are as nothing in comparison with the far more potent arguments for leaving this like the other relations voluntarily contracted by human beings, to depend for its continuance upon the wishes of the contracting parties" (*Ibid.*, p. 49).

As I hope my reconstruction of the essay “On Marriage” illustrates, Mill viewed the issue of women’s emancipation as a central social question deserving a full-length analysis. Just as Comte, Mill thought that the practical issue of divorce, and by extension that of the appropriate structure of family, could only be settled by an inquiry into the nature of women’s intellectual capacities, which would rely primarily on an ethological basis. Once this knowledge would be made available to the public, it would bring drastic reforms with regard to women’s social position. As far as Mill was concerned, he surely hoped the “scientificisation of politics” would lead to such an outcome.

Finally, one cannot ignore that Mill also had reasons, besides his political and scientific concerns for social issues, to address the question of divorce: he was himself taken in a platonic love-affair with Harriet Taylor, the attractive and intellectually stimulating wife of a well-to-do wholesale druggist he had met in the early 1830s and who remained married to her husband till his death in 1849). Her relation with Mill was attracting its fair share of gossip from their friends and intimates, to such an extent that Mill, partly because of the tittle-tattle, progressively withdrew from society to some kind of seclusion during the 1840s (he broke up with a large number of his old acquaintances and resigned from the editorship of the *London and Westminster Review* in 1840). John Taylor, who respected Mill’s eminence as a thinker, was quite ready to accommodate the wishes of his wife, as long as the bounds of morality and decency were observed. But divorce was out of question for both, John Taylor being quite wary of his public reputation and Harriet being tied by a strong affection to her children. An agreement was finally reached: Mill could visit Harriet when her husband was not in, and join her discreetly when she was outside of London for short vacations and travels abroad, but she would continue to live with Taylor. Yet, it is likely that Harriet and John Stuart’s passionate love could hardly content itself with such a makeshift compromise. However, they were so eager not give a handle to calumny or controversy that they respected scrupulously the terms of the agreement with John Taylor to the very day of the latter’s burial. For all that, they did not find the situation less absurd or revolting, but they managed to transform their feelings of anger and injustice into the positive resolution of furthering the emancipation of women and the improvement of society<sup>30</sup>. Mill’s reflections on sexual equality were his theoretical contributions to the cause.

However, whilst Comte's answer to the problem of sexual equality threatens the consistency of his system, Mill's case in "On Marriage" fails to provide a sound argument for women's emancipation: the ethological premise establishing the intellectual equality of men and women is lacking. Accordingly, one of the goals of this thesis will be to trace the origin, development, and fate of this "Ethology" in Mill's writings, most notably the correspondence with Comte and the *System of Logic*. But, besides this historical and conceptual inquiry, I will also attempt to uncover the tensions that may exist between Mill's views on sexual equality and the general orientation of his philosophy.

As John Skorupski argues<sup>31</sup>, Mill's philosophy is best described as a "liberal naturalism", that is as a philosophy which views human beings as natural entities living in a natural world and asserts that an autonomous exercise of one's natural capacities is conducive to one's happiness. In this last respect, liberalism insists on the moral importance not only of letting the individual develop her capacities but also of letting her choose which capacity(s) she wants to develop, as the case of women's emancipation illustrates. Now, a certain interpretation of naturalism seems to belie Mill's ethological project.

As an epistemological thesis, naturalism maintains that the whole behavior (individual and social) of human beings is amenable to the same kind of knowledge as the natural world. Accordingly, the knowledge of human beings is to be modeled on the natural sciences (such as physics, chemistry, and biology) and is to take the same form (reliance on empirical testing, nomological nature of its general statements, predictive dimension). As the following quote from the first chapter of Book VI of the *System of Logic* illustrates, Mill is entirely supportive of that epistemic facet of naturalism:

"if what has been pronounced "the proper study of mankind" is not destined to remain the only subject which Philosophy can not succeed in rescuing from empiricism; the same process through which the laws of many simpler phenomena [material] have by general acknowledgment been placed beyond dispute, must be consciously and deliberately applied to those more difficult inquiries [about human beings] (...); it is by generalizing the methods successfully followed in the former inquiries, and adapting them to the latter, that we may hope to remove this blot on the face of science" (J. S. Mill, *SL*, Book VI, Chap. I, Sect. 1, p. 834).

But naturalism can also be taken as an ontological thesis, which in its extreme reductionist form considers the behavior of human beings as the direct or

unmediated effect of the operation of laws and mechanisms proper to the natural sciences, and in the last resort physics. Now, it is very likely that a biological approach to the problem of sexual equality – which was Comte's – will be favored by the naturalist, who maintains as a matter of principle that human capacities are dependent on the biological make-up of their bearers for their existence and on their environment for their expression. As I will try to show in my thesis, if Mill refuses the reduction of biology to sociology, which was characteristic of Comte's treatment of the sexual equality issue, it is not because he contradicted his self-professed naturalism but because his conception of human nature and scientific explanation could not be accommodated within the limits of the biology of his time.

The last point of historical and philosophical interest I will review in my thesis is that of the evolution of Mill's feminism. At the time of the *System* and the correspondence with Comte, Mill took to be the key to help resolve the difficult question of sexual equality, namely his pet project of ethology, never got off the ground in the following years. Given the centrality of ethology in Mill's case for women's emancipation and the role he ascribed to it in his architectonic of the "moral sciences", it will prove interesting to inquire into the reasons of such a damaging intellectual failure. But another problem resulted from the failure: was Mill left with no argument to support his feminism? I will argue that Mill was able to overcome this predicament and came up with convincing arguments that took stock (and put to good use) the ethological failure. In particular, I will show that the *Subjection of Women*, which presented Mill's mature feminist views, developed a new way of addressing the problem, which supposed that the liberal component of Mill's philosophy, and especially its emphasis on the necessity of letting individuals engage in "experiments in living", constituted the proper experimental setting in which to adjudicate the sexual equality issue. In that instance, it was for Mill's political philosophy to be productive of a certain knowledge of human nature.

---

<sup>1</sup> Mill first started reading Comte in 1828-9 after his French friend Gustave d'Eichthal communicated him the *Système de politique positive* (a short tract published by Comte in 1822 as the *Plan des travaux nécessaires pour la réorganisation de la société* while he was still associated with St Simon and his school). As he told Comte in his first letter (Mill to Comte, November 8, 1841, in O. A. Haac [ed.], *The Correspondence of John Stuart Mill and Auguste Comte*. Translated from the French and edited by O.A. Haac, with an introduction by A. Kremer-Marietti, New Brunswick & London: Transaction Publishers, 1995, p. 35), Mill came across the first two volumes of the *Cours de philosophie positive*, on the philosophy of mathematics and the philosophy of astronomy and physics (respectively published in 1830 and 1835), in 1837; by late 1838, he got hold of the third volume on the philosophy of chemistry and biology published in 1838, as a letter to Molesworth indicates

(“Have you seen the third volume, the philosophy of chemistry & physiology? I have been almost as much struck with it as with the others & and have learnt as much from it, though there are more questionable things in the former two, but *even on these* he has shaken me”, Mill to Sir William Molesworth, October 19, 1838; in J. S. Mill, *The Later Letters of John Stuart Mill. 1849-1873*. Edited by F. E. Mineka and D. N. Lindley, London & Toronto: University of Toronto Press – Routledge & Kegan Paul, 1972, p. 1988; see Mill to John Robertson, October 10, 1838; in J. S. Mill, *The Earlier Letters of John Stuart Mill. 1812-1848*. Edited by F. E. Mineka, with an introduction by F.A. Hayek, London & Toronto: University of Toronto Press – Routledge & Kegan Paul, 1963, pp. 388-9). Eventually, the third letter of Mill to Comte suggests that, by the end of 1841, he had read the volumes published in 1839 and 1841, for he expressed to the latter that he had been “impatiently awaiting the publication of the volume [the sixth, published in July 1842] which will complete your great work, and then of the special treatise on politics which is to follow and where I expect to find insights on many questions raised in your fourth and fifth volumes; so far they have only roused my intellectual interests without satisfying them fully” (Mill to Comte, December 18, 1841, in Haac [ed.], p. 43-4). As J. M. Robson recalls, “Mill (...) was immensely impressed by the sixth [volume of the *Cours*], which led him, in January, 1843, into a “remaniement complet” of the concluding chapters of Book VI” (J. S. Mill, *A System of Logic, Ratiocinative and Inductive, Being a Connected View of the Principles of Evidence and the Methods of Scientific Investigation*. Edited, with a textual introduction, by J. M. Robson and with an introduction by R. F. McRae. Toronto & London: University of Toronto Press – Routledge & Kegan Paul, 1973, pp. lxviii-lxix; for the detail of Mill’s revisions of Book VI, see p. lxxv-lxxvi), that is the chapters dealing with the methods of the moral sciences.

<sup>2</sup> R. Yeo, “Scientific Method and the Rhetoric of Science in Britain, 1830-1917”, in J. A. Schuster & R. Yeo, *The Politics and Rhetoric of Scientific Method: Historical Studies*. Dordrecht & Lancaster: Reidel, 1986, pp. 259-97.

<sup>3</sup> J. Herschel, *A Preliminary Discourse on the Study of Natural Philosophy*. Foreword by A. Fine. Chicago & London: The University of Chicago Press, 1987.

<sup>4</sup> On Whewell’s ambivalence, see R. Yeo, *Defining Science. William Whewell, Natural Knowledge, and Public Debate in Early Victorian Britain*. Cambridge: Cambridge University Press, 1993, pp. 193-201 and 231-41.

<sup>5</sup> See J. S. Mill, *Autobiography and Literary Essays*. Edited, with an introduction, by J. M. Robson and J. Stillinger. Toronto & London: University of Toronto Press and Routledge & Kegan Paul, 1981, Chap. III. On Mill’s early conceptions of the logic of the moral sciences, O. A. Kubitz, *Development of John Stuart Mill’s System of Logic*. Urbana: The University Press of Illinois, 1932, chap. I and chap. V (pp. 203-5).

<sup>6</sup> At the beginning of the correspondence Comte sent his wife a letter, dated March 3, 1842, in which he talked of the “voluntary subordination Mill overtly profess[ed]” to him (A. Comte, *Correspondance générale et confessions*. Tome II, avril 1841- mars 1845. Edited, with an introduction, by P. E. de Berrédo Carneiro and P. Arnaud. Paris – La Haye: Mouton, 1975, p. 114).

<sup>7</sup> Appointed as tutor in analysis and mechanics (1832) and admission examiner to the Ecole (1840), Comte failed twice to be elected – first as the successor of Navier in 1836, and then as the successor of Poisson in 1840 – to a chair in Mathematics. Consequently, he was forced to take a third job as substitute professor in a preparatory school for the *Ecole polytechnique*.

<sup>8</sup> Considering the austerity and rigidity usually associated with Comte’s name, the story of his marriage with Caroline Massin sheds a refreshing light on the life of the founder of positivism: he met her in 1821 while visiting the Galeries de Bois of the Palais Royal in Paris, where she was – Comte suggested – prostituting herself; they saw each other quite regularly during six months, at least when Comte could afford it, but she put an end to the “affair” when she deserted him for Antoine Cerclet – a liberal political activist who would eventually become secretary of the *Présidence* of the *Chambre des Députés* and *maître des requêtes* at the *Conseil d’Etat* under the July Monarchy -, who bought for her a reading room (*cabinet de lecture*). That was where Comte met her again at the end of 1822. By the fall of 1823, they made up with each other, and got civilly married on February 19, 1825. Despite genuine affection on both sides, the subsequent years saw their relations deteriorating (Caroline abandoned the couple’s abode three times – in 1826, 1833, and 1838) up to the point where she definitively left, with no hope of return as she has been warned by her husband, in August 1842. On this episode of Comte’s life, see M. Pickering, *Auguste Comte, An Intellectual Biography*. Cambridge: Cambridge University Press, 1993, pp. 315-26.

<sup>9</sup> “Live Openly” was, with “Order and Progress” and “To Live for Others”, one of the three mottos printed on the front page of the *Système de Politique Positive* (see A. Comte, *Système de politique positive. Traité de sociologie instituant la religion de l’humanité*. Paris: Société positiviste, 1929).

<sup>10</sup> In a later letter, Comte would recall that she “really possesse[d] more intellectual strength, more depth, and, at the same time, more good judgment than most so justly praised members of her sex” (Comte to Mill, 5 Oct., 1843; in Haac [ed.], p. 190).

<sup>11</sup> Comte issued a similar analysis less than a decade later, when his former disciple Littré tried to mitigate his hostility towards his wife: Comte reminded him that it was “the very exceptional nature of this [i.e. Caroline] anti-feminine type” (Comte to Littré, 6 César, 63; in *Testament d'Auguste Comte, avec les pièces qui s'y rapportent. Publié par ses exécuteurs testamentaires conformément à ses dernières volontés*. Paris : 1884, p. 48) that compromised their marriage.

<sup>12</sup> In his edition, Haac adds between brackets the relative clause “than I have” to indicate that Mill was merely pointing out his own incapacity to judge this question for want of a proper knowledge of human nature. However, nothing in the French original suggests that Mill intended to restrict such an incapacity to his own case: the sentence “pour en décider irrévocablement, il faudrait attendre une connaissance plus profonde de la nature humaine” (as it is given in A. Comte, *Correspondance générale et confessions. Tome II. Avril 1841- mars 1842*, p. 367) means that nobody is presently in command of such a knowledge of human nature.

<sup>13</sup> A. Comte, *Physique sociale. Cours de philosophie positive, leçons 46 à 60*. Edited, with an introduction, by J.-P. Enthoven. Paris: Hermann, 1975.

<sup>14</sup> Before the fall of the *ancien régime*, marriage was considered an irrevocable engagement administered by the Catholic Church. Under Canonic Law, the only way out for spouses was judicial separation, which allowed them to live separately but preserved the marital tie by prohibiting remarriage. The law of September 20<sup>th</sup>, 1792 authorized divorce quite liberally. Despite the opposition of a large segment of public opinion and of its redactors, Bonaparte decided to preserve it in the *Code civil* (1804), even though it was much more strictly regulated. The possibility of repudiating one's spouse for mere incompatibility of temper was suppressed, but it was still possible to divorce on grounds of fault (adultery, conviction including a penalty involving the loss of civil rights, aggravated intemperance, maltreatment or abuse). It was also possible to divorce by mutual consent – so that spouses were not forced to state in public the grounds for separation –, but this last option was severely qualified and matched with heavy financial penalties. Finally, divorce was pronounced by a court of justice, and not just by the registrar as was the case in the previous dispositions. Notwithstanding the fact that these procedures were less and less resorted to during the Empire, the attack on divorce launched at the beginning of the Restoration secured its abolition, following a request made by the conservative Louis de Bonald, on May 8, 1816. Only judicial separation remained, but it was hardly used. Afterward, republicans and liberals fought for the restoration of divorce, but succeeded only sixty-eight years later with the passing of the Naquet law, on July 27, 1884.

<sup>15</sup> These “ancient aberrations” refer primarily to Plato’s advocacy of the community of women in the *Republic*.

<sup>16</sup> F. Ronsin, *Les Divorciaires. Affrontements politiques et conceptions du mariage dans la France du XIX<sup>e</sup> siècle*. Paris : Aubier, 1992.

<sup>17</sup> F. E. Manuel, *The Prophets of Paris*. Cambridge: Harvard University Press, 1962. Besides Manuel, one may consult the following secondary literature for more details on Saint Simonian conceptions of women and family: S. K. Grogan, *French Socialism and Sexual Difference : Women and the New Society, 1803-1844*. London; Macmillan, 1992; C. G. Moses, “Saint Simonian Men / Saint Simonian Women: The Transformation of Feminist Thought in 1830s’ France”, *Journal of Modern History* 1982, 54, pp. 240-67. It has to be noted that Comte had been an intimate of Saint Simon’s between 1817 and 1824, and that, even after his break-up with his former mentor, he kept in touch with some of the Saint Simonians. For a narrative of these tormented relations, see F. Manuel, *The Prophets of Paris*, chap. 4; M. Pickering, *Auguste Comte*, chap. 3, 4 & 5.

<sup>18</sup> On Fourier, see J. Beecher & R. Bienvenu, eds, *The Utopian Vision of Charles Fourier. Selected Texts on Work, Love, and Passionate Attraction*. London: Jonathan Cape, 1972; J. Beecher, *Charles Fourier. The Visionary and His World*. Berkeley & Los Angeles: University of California Press, 1986; S. K. Grogan, *French Socialism and Sexual Difference*.

<sup>19</sup> The encyclopaedic scale and the principles of its construction are presented in the Second Lesson of the *Cours*, entitled “Exposition of the plan of this course or general considerations on the fundamental hierarchy of the positive sciences”; in A. Comte, *Philosophie première. Cours de philosophie positive, leçons 1 à 45*. Edited, with introductions, by M. Serres, F. Dagognet & A. Sinaceur. Paris: Hermann, 1975, pp. 42-64.

<sup>20</sup> See for instance J. Heilbron, *The Rise of Social Theory*. Translated by S. Gogol. Cambridge: Polity Press, 1995. For Heilbron, Comte’s distinctive conception of sociology matters “not because Comte’s sociological insight were of such great significance, but because he introduced a new

---

theoretical orientation. Comte was the first to advocate an uncompromising scientific approach without taking refuge in any of the established sciences. He developed a theory of science in which the idea of relative autonomy played a central role. This attributed to social science a territory of its own and gave it the task of developing its own proper theories and methods" (pp. 7-8).

<sup>21</sup> Most notably I. Hacking in "The Disunities of the Sciences", in P. Galison & D. J. Stump, *The Disunity of Science. Boundaries, Contexts, and Power*. Stanford: Stanford University Press, 1996, pp. 37-74, who maintains that in the *Cours de philosophie positive*, Comte "wanted to dismiss one model of unity, namely derivation of all laws from one fundamental law of nature" (p. 38). Similarly, J.-F. Braunstein remarks that "Comte's scientific philosophy is a 'philosophy of the sciences' and not a philosophy of science" (J.-F. Braunstein, "La philosophie des sciences d'Auguste Comte", in P. Wagner [ed.], *Les philosophes et la science*. Paris: Gallimard, 2002, p. 792).

<sup>22</sup> See for instance Mill's strictures upon his father's *Essay on Government* with respect to James Mill's exclusion of women from suffrage, in J. S. Mill, *Autobiography and Literary Essays*, p. 107.

<sup>23</sup> Cases in point are to be found in an article entitled "Periodical Literature: Edinburgh Review" included in the first issue of the *Westminster Review* (1824), in J. S. Mill, *Autobiography*, pp. 291-325; and in a 1826 book review on "Modern French Historians", in J. S. Mill, *Essays on French History and French Historians*. Edited, with a textual introduction, by J. M. Robson. Introduction by J. C. Cairns. Toronto & London: University of Toronto Press and Routledge & Kegan Paul, 1985, pp. 15-52.

<sup>24</sup> In the so-called "Yale fragment", which is an early version of the *Autobiography*, Mill argued that he had held his convictions about sexual equality "from early boyhood" (J. S. Mill, *Autobiography*, p. 252). The following episode supports his account and illustrates the practical aspect of Mill's commitment. On a day of 1823, on his way to work at India House, the seventeen years old Mill came across the body of a strangled newborn child in St. James' Park. For Mill, such an horror was certainly the sinister proof of the soundness of Malthus' views, which he discovered while studying economics with his father and discussing with several of James Mill's intellectual companions (Bentham, Ricardo, etc.): since families of workers tend to increase the number of their members in order to maximize their income by putting their children to work, and thereby lower the wages by way of the introduction on the market of cheap unqualified labour, the growth of food supply would not be able keep up with the unchecked growth of population; hence the terrible conditions of existence of the labouring classes and the temptation to resort to infanticide so as to alleviate one's plight. But the young Mill was also convinced that knowledge (of contraception) and foresight could prevent such atrocities and defuse Malthusian pessimistic predictions. He and a friend therefore decided to distribute to "maid-servants" a pamphlet addressed to "Married People" and written by Francis Place, one of his father's intimates, who advocated birth-control and explained the use of the "sponge". Mill and his friend were arrested and sentenced to two weeks' imprisonment for distributing obscene literature (but maybe because the lord mayor in charge of their case realized that they were merely trying to prevent homicide or because he knew that John was the son of James Mill, both boys were released after only two days). To be sure, Mill's plea for birth control was primarily linked to his commitment to the improvement of the conditions of existence of the working classes, but it is also very likely that he came to understand on that occasion that as long as women would be considered as mere child-bearers and deprived of any control whatsoever over reproduction, such an improvement would not obtain.

When Mill died in 1873, this story resurfaced in his obituary in *The Times*, which quoted the verses Thomas Moore had dedicated to the incident fifty years before:

"There are two Mr M. Is, whom those who like reading  
What's vastly unreadable, call very clever;  
And whereas M. I senior makes war on *good breeding*,  
M. I junior makes war on all *breeding* whatever."

On this, one can consult N. Capaldi, *John Stuart Mill. A Biography*. Cambridge: Cambridge University Press, 2004, pp. 41-2.

<sup>25</sup> For more details on that piece, see J. M. Robson's textual introduction to J. S. Mill, *Essays on Equality, Law, and Education*. Edited, with a textual introduction, by J. M. Robson. Introduction by Stefan Collini. Toronto & London: University of Toronto Press and Routledge & Kegan Paul, 1984, pp. LVIII - LX.

<sup>26</sup> What is one to make of the following claim? "There is no natural inequality between the sexes; except perhaps in bodily strength; even that admits of doubt" (J. S. Mill, *Essays on Equality, Law, and Education*, p. 42). To be sure, one would certainly be able to find, in England at that time, some women who are stronger than some men. But certainly, in a society where the majority of men are employed in more or less physical labor, it would be very doubtful that on average men were not stronger than women. Perhaps, Mill could have objected that the strength of men being linked with

---

labor, if women were employed in the same capacity, they would also develop their physical qualities and be on a par with men.

<sup>27</sup> For want of space, the historical account of marriage proposed by Mill cannot be assessed here. To put things shortly, Mill contends that “for a long time the indissolubility of marriage acted powerfully to elevate the social position of women” (*Ibid.*, p. 40). For, prior to the institution of marriage as an indissoluble tie, the law of the strongest applied to marital matters, enabling men to take whatever woman they could, but also to repudiate her as soon as she did not fulfil their expectations. Because it was based on pure physical strength, the relation was by essence asymmetric. With the institution of an irrevocable vow, women could at least, and despite the fact that they were still chosen by men, secure a minimum of permanency for their situation and subsistence: they could not be repudiated by a pure act of whim.

<sup>28</sup> However, Mill also qualifies the extent to which women will be entitled to compete with men in worldly matters:

“It does not follow that a woman should *actually* support herself because she should be *capable* of doing so: in the natural course of events she will not. It is not desirable to burthen the labour market with a double number of competitors. In a healthy state of things, the husband would be able by his single exertions to earn all that is necessary for both; and there would be no need that the wife should take part in the mere providing of what is required to support life” (*Ibid.*, p. 43).

This restriction is surprising: would not it be strange to train women and not let them enter the job market? Surely, professional training is in itself a good school for the will and the understanding, the necessary ingredients of autonomy. However, it would also be sensible to venture that these faculties are better exercised in real-life situations than in classrooms. If independence is what is really aimed at, why not giving it a fair try? Mill justified his reluctance by arguing that, from a purely economic point of view, a flood of freshly trained women pouring on the market would be the cause of a lowering of wages. In any case, it has to be noted that Mill’s own words indicates that there is no necessary link between the fact of being a woman and that of being excluded from effectually practicing a certain profession: Mill says that it “does not follow that a woman should *actually* support herself because she should be *capable* of doing so: in the natural course of events she will *not*” (*Id.*). But Mill never maintained that a woman *ought not* support herself even if she is *capable* of doing so. Maybe he would prefer that she abstains from it, but he never regarded this exemption as mandatory: “The great occupation of woman should be to *beautify* life (...). If in addition to this activity of her nature demands more energetic and definite employment, there is never any lack of it in the world” (*Ibid.*, p. 44). One can certainly question Mill’s claim that it is in the nature of woman to “*beautify*” life (after all, why cannot men do it?), but his argument in no way legitimates the exclusion of women from professional practice.

<sup>29</sup> Even if divorce had been authorized in England since the seventeenth century, it could only be pronounced on grounds of adultery and after so complex and so expensive a procedure (which only Parliamentary dispositions could achieve) that it had been very exceptionally appealed to (only 110 divorces had been pronounced between 1800 and 1850). Accordingly, Mill was primarily advocating a simplification of the procedure itself.

<sup>30</sup> See F.A. Hayek, *John Stuart Mill and Harriet Taylor. Their Correspondence and Subsequent Marriage*. London: Routledge & Kegan Paul, 1951; N. Capaldi, *John Stuart Mill*, Chap. 4; and J.E. Jacobs, *The Voice of Harriet Taylor Mill*. Bloomington: Indiana University Press, 2002.

<sup>31</sup> J. Skorupski, *John Stuart Mill*. London: Routledge, 1989, Chap. 1, and “Introduction: The Fortunes of Liberal Naturalism”, in J. Skorupski (ed.), *The Cambridge Companion to John Stuart Mill*. Cambridge: Cambridge University Press, 1998, pp. 1-34.

## II - The Female Brain and the Subjection of Women: Biology, Phrenology and Sexual Equality.

As argued in the previous chapter, the challenges posed to “positive philosophy” and “liberal naturalism” by the sexual equality issue originate in the respective ways Comte and Mill provide for the articulation of the biological and sociological levels of analysis. To put it briefly, my claim is that Comte failed to live up to the methodological standard he set for sociology when he maintained that biology could settle the question of sexual equality, whereas Mill, despite his self-professed naturalism, refused to consider as sound arguments based on biology.

In what follows, I attempt a systematic reconstruction of the Comte-Mill correspondence that adduces textual and argumentative evidence in support of these claims. This chapter starts with an account of how the issue of sexual equality was first introduced by Mill in the correspondence (IIA), and how Comte responded by emphasizing the importance of biology for the appropriate handling of the discussion (IIB). I then turn to Comte’s actual exposition of his various biological arguments for the subjection of women (IIC), and eventually single out the one based on phrenology as the main biological support of Comte’s case for women’s subjection (IID).

### A – Setting the Grounds of the Debate.

Mill’s attempt to introduce the issue of sexual equality in the correspondence was a cautious one, for it was only touched upon at the beginning of the summer of 1843, almost one year and a half after his exchange with Comte had begun. Despite some disagreements<sup>1</sup>, the general impression one gets from the letters up to this date is that of a general convergence of opinions on most matters, speculative and practical. However, one also discerns in Mill a growing desire for intellectual recognition. The letter of August 12, 1842, was a watershed, for it renounced the somewhat submissive tone Mill had adopted thus far. Mill wanted to be treated as a fellow thinker and not as a pupil. Time was ripe, he thought, for a genuine discussion:

<sup>1</sup>“It has (...) always been my desire to engage in a true, frank and rather systematic comparison of our ideas, be they philosophic or sociological” (Mill to Comte, 12 August, 1842; in Haac [ed.], pp. 91-2)

Mill acknowledged that the imminent publication of the sixth volume of the *Cours* completed Comte's first philosophical *grand œuvre*, and thus testified to the systematic dimension of his reflections. But he also regarded his work as a systematic endeavour, which would soon materialize for the public in the *System of Logic*, the originality of which he was eager to defend. Accordingly, Mill suggested that Comte acquaint himself with Mill's writings (which demanded an infringement of the latter's "cerebral hygiene" that prevented him from reading anything else than poetry and a few scientific reports), so that they could direct their discussion "from the start towards points of real and basic difference" (*Ibid.*, p. 92), whose very existence Mill claimed he could not yet determine. But that he was searching for them, the following pronouncement undoubtedly demonstrated:

"I know that I have come ever closer to your ideas as I have come to know them better, but you realize as a geometer that a constant decrease is not always a decrease without limit" (*Id.*).

As we also know, Mill used Comte's confession as a pretext for raising the issue of divorce, and ventured that perhaps it would have been worth reconsidering the whole problem of the relations between the sexes anew<sup>2</sup>. Deeply moved by Mill's concern, Comte replied that he was sure that his correspondent would eventually surrender to the views he first presented in the *Cours*:

"As for our lack of agreement in the matter of divorce, I am convinced that, in spite of my personal case, which fortunately is exceptional though not as rare as it ought to be today, it will not take me long to persuade you to adopt my view, for it is of great import to society that marriage be indissoluble. This is the ultimate and indispensable attribute of monogamy as an institution, an essential condition of the definitive [human] economy" (Comte to Mill, 30 September, 1842; *Ibid.*, p. 105).

Comte concluded that, if they had the chance to discuss this issue face to face, he had no doubt he would convert Mill to his opinion on "this important point of social organization ... without waiting for the *Treatise on Political Polity*<sup>3</sup> where ... this essential point will be appropriately clarified" (*Id.*). The follow-up to this opening came one year later in June of 1843, when Mill first voiced his objections.

Taking advantage of Comte's positive reception of his *System of Logic*<sup>4</sup>, Mill thanked "the most competent judge, indeed the only one so far competent on any question of systematic methodology" for the "high praise" (Mill to Comte, 15

June, 1843; *Ibid.*, p. 164) he kindly gave to his book, and insisted on the spontaneous convergence that characterized their respective views:

“Such harmony would in itself almost constitute sufficient proof of the truth and even of the timeliness of the new philosophy, leading others to judge that it is of the kind to create true convictions in anyone possessing the necessary positive background and native intelligence” (*Ibid.*, p. 165).

But it was the very way Mill specified the extent of their agreement which gave the correspondence a new turn:

“Henceforth, reassured as to questions of methodology – where I fear no further differences of opinion of any importance, be it on the general theory of positivism, or on its particular application to the social sciences – all I need still hope for is an equally perfect agreement with respect to social doctrine” (*Id.*)

Consequently, whilst acknowledging the extent of his agreement with Comte on methodological matters, Mill also specified the nature of what he considered to be possible sources of disagreement, even if he took the trouble of venturing that, perhaps, his lack of conviction regarding issues Comte held to be already settled was due to an insufficient intellectual development. Yet, he nevertheless chose to state them explicitly:

“As to the doctrines of static sociology, which you did not invent but took over from old social theories, though you gave them support with your customary energy and philosophical conviction, there remain some areas of real disagreement between us. ... While I fully recognize, for instance, the social necessity for the basic institutions of property and marriage<sup>5</sup>, and while I accept no utopia concerning either one, I am still inclined to believe that these two institutions may be destined to undergo more serious modifications than you seem to think, even though I feel quite unable to foresee what these will be” (*Id.*).

He finally alluded to what they already touched upon in the correspondence and even “confessed” one of his theoretical “sins”:

“the question of divorce is for me undecided, in spite of the powerful arguments in your fourth volume, and I am subject to an even more fundamental heresy, since I do not, in principle, acknowledge the necessary subservience of one sex to the other” (*Id.*).

Mill concluded on these “questions of major importance”, without giving more details. One may nonetheless infer from these last two quotations a plausible interpretation as to the terms in which he intended to address the issue of sexual equality.

From the previous statements, one may conceive at least two ways of tackling the problem. The first approach relies on the social and political outlook John Stuart Mill inherited from Bentham and his father James Mill. In a Utilitarian perspective (that of “social necessity”), the value of legal and political arrangements (such as marriage or divorce) is assessed with respect to their contribution towards the “greatest happiness of the greatest number”, to use the Benthamite motto. If the institutions surveyed prove more detrimental than beneficial to the welfare of the community and its members, then such a diagnostic would prompt their reformation or abandonment: as Mill put it, the outcome of such an evaluation process may result in “serious modifications” (*Id.*).

Now, the drawback of the Utilitarian approach is that it may be reconciled with the paternalistic argument for women’s subjection. For the latter claim rested on the premise that women, because they lacked the intellectual resources to do so, were unable to promote their own interests and, accordingly, what was best for them was to be decided by men. So, it was not that women’s interests were not considered, but just that women were not to do the considering. The search for the “greatest happiness of the greatest number” took into account their well-being, but sacrificed their autonomy, that is a key element of Mill’s moral and political conceptions.

Such a shortcoming explains why Mill made the Utilitarian perspective depend on a more fundamental approach to the problem, that of the study of human nature, and, particularly of the nature of women, as his “confession” to Comte testified: “I am subject to an even more fundamental heresy, since I do not, in principle, acknowledge the necessary subservience of one sex to the other” (*Id.*). If it was “more fundamental”, it was because Mill’s belief in the natural equality of the sexes required his rejection of any legal, political, or social arrangements based on the alleged inferiority of women. As he already told Comte with regard to the issue of divorce, what was needed was “a more profound knowledge of human nature” (Mill to Comte, September 10, 1842; *Ibid.*, p. 102). But what would be the nature of this “knowledge of human nature”, Mill did not say.

Comte showed no sign of concern with Mill’s alleged “heretical” views: their complete agreement on method and social dynamics encouraged him to think that Mill would soon break with his opinions and convert to his views. In his reply to Mill’s letter of June 29, 1843, he attempted, in his unrivalled patronizing manner,

to explain to his correspondent that he was just going through a normal transition in his intellectual development:

"I have myself once passed through a rather analogous mental situation, although perhaps my studies in biology moved me faster away from it. To my eyes, this is an inevitable phase in the present-day development of emancipated minds, a stage of thought which momentarily concedes essential ideas to negative philosophy, notions the theory of which has unfortunately remained so far under the dangerous hegemony of theological conceptions, but which basically contain no major fault besides this disastrous association" (*Ibid.*, p. 171).

Buried in this statement is the first indication in the correspondence of the biological dimension of the sexual equality issue. Comte's emphasis on the role that his "studies of biology" played in his own intellectual development was meant to imply that he considered the appropriate theoretical elaboration of social phenomena, including those concerning the social condition of women, to be dependent, in a way to be specified, on biology. The "knowledge of human nature" Mill was calling for, Comte held it to be primarily biological. So perceptive a reader as Mill could not have missed such a crucial feature of Comte's developments in the Fiftieth Lesson of the *Cours de philosophie positive*. If Mill was to refute the claim about female inferiority, Comte's biological premise had to be challenged. The ensuing correspondence proved that it was indeed one of the primary targets of Mill's objections.

## B – The Theoretical Relevance of Biology: Philosophical Issues.

The choice to focus primarily on the biological aspect of the debate was thus first dictated by Comte's own line of argument in the *Cours*. But it is also very likely that Mill's eagerness to defuse Comte's case for women's subjection drew him to question the relevance of biological data with regard to the sexual equality issue.

Echoing Comte's pronouncement in the *Cours* with regard to the ability of "the sound biological philosophy" (A. Comte, *PS*, p. 186) to demonstrate the natural inferiority of women, Mill concurred with his French addressee that in principle biology certainly had a bearing on the problem. Yet he did not regard it as presently capable of solving it conclusively:

"Should we not come to agree on the matters in question, our dissent would almost prove that the principles of biology on which their resolution

ultimately depends are not as yet sufficiently developed" (Mill to Comte, 13 July, 1843; in Haac [ed.], p. 173).

Therefore, Mill agreed with Comte that the resolution of the sociological issue of sexual equality "ultimately depend[ed]" on biology; yet, as things stood, biology was not able, in his eyes, to provide acceptable evidence for or against the hypothesis of natural equality<sup>6</sup>.

On the other hand, Comte tirelessly voiced throughout the correspondence his belief in the capacity of biological data to settle the question definitively, as the three following quotations illustrate:

"As imperfect as biology may still be in every respect, it seems to me that it can already firmly establish the hierarchy of sexes" (Comte to Mill, 16 July, 1843; *Ibid.*, p. 179).

"the subjection of women (...) is directly based on a natural inferiority which nothing can undo and which is even more pronounced among humans than among the other higher animals" (Comte to Mill, 6 October, 1843; *Ibid.*, p. 191).

"the preliminary insights which we have derived from biology alone and which take on greater importance, especially for the problem at hand [that of sexual equality], are already far more advanced than you seem to admit, in spite of the rather unsatisfactory state of our biological studies" (Comte to Mill, 14 November, 1843; *Ibid.*, p. 207).

In short, *quid juris*, Comte and Mill acknowledge the importance of biology for the sexual equality debate; *quid facti*, Comte failed to convince Mill that biological data had settled the case.

As to the disagreement about the conclusive nature of biological evidence, Mill attributed it to the backward state of biology itself: the recently coined term of "biology", expressed the belief entertained by physicians and physiologists alike that the phenomena characteristic of living beings were specific and could not be studied only with the practical and theoretical resources of the inorganic sciences. However, the unity denoted by the word was merely ideal, since biology still referred to an incredibly diverse batch of inquiries (systematics, natural history, botany, anatomy, physiology, etc.), which was certainly not in the 1840s on a par with physics in terms of theoretical cohesiveness. What was more, as Mill told Comte in a previous letter, the medical dominion over biological studies hampered their development:

“As for biology, it remains here, even more than in your country, in that provisional state described so well by you, and even by Bacon – a state in which science is not as yet separate from the corresponding art [of medicine]. Except for descriptive natural history, which has made great strides here in the last twelve or fifteen years, the study of biology is scarcely pursued except by physicians and surgeons who, if they are competent, are soon absorbed by the strain of their profession, which is especially hard in our country” (Mill to Comte, 28 Jan., 1843; *Ibid.*, p. 129).

Comte treated quite off-handedly Mill’s remark on the immaturity of biology and ascribed the reluctance to consider biological data as acceptable evidence to his addressee’s scientific and philosophical education:

“It seems to me ... based on the fact that you do perhaps not take the whole body of biological studies, including those carried on today, into as complete and intimate considerations as that of inorganic notions – the various categories of which have been familiar to you for a long time, as your treatise so clearly indicates” (*Id.*)

This easy agreement reached on the theoretical relevance of biology must not obscure the fact that such a stance was fraught with problems both for Comte’s “positive philosophy” and Mill’s “liberal naturalism”. On the one hand, Comte’s primary reliance on biology to adjudicate the sexual equality debate clashed with his own prescriptions as to the alleged autonomy of sociology, for he repeatedly presented biological data as sufficient evidence for the subjection of women: the extracts of correspondence quoted above merely echoed the Fiftieth Lesson of the *Cours* in which Comte maintained that sociology would “supplement” (*compléter* in French) the “essential scientific assessment” (A. Comte, *PS*, p. 186) provided by biology in the case at hand. But then, what about the alleged autonomy of sociology? Could Comte justify such a serious infringement of the principles of his “positive philosophy”? Turning to Mill, one might wonder how his claim that the sociological issue of sexual equality “ultimately depend[ed]” (Mill to Comte, 13 July; 1843; in Haac [ed.], p. 173) on biology tallies with his pet-project of ethology, i.e. an independent science of the formation of character. How would the latter coexist with the “sufficiently developed” (*id.*) biology Mill himself considered capable of deciding the sexual equality issue?<sup>7</sup>

## C – The Varieties of Biological Arguments for the Subjection of Women.

Any philosophical correspondence, because it includes many elements foreign to purely speculative matters and sometimes lacks a unitary design, demands a certain amount of interpretation and gap filling. For his part, Comte candidly acknowledged that his letters were no exception to this rule:

“they were not preceded by any special preparation. I wrote them without first making a draft (...) and in the simple inspiration of the moment” (Comte to Mill, December 23, 1843; *Ibid.*, p. 215).

However, given the highly systematic cast of Comte’s mind, one may reasonably hope that a sustained line of reasoning could be unearthed from his letters. And it is indeed the case that, with respect to the biological arguments for the subjection of women, a somewhat systematic reconstruction of his position can be obtained through the analysis of passages taken from three of his letters to Mill (July 16, 1843; October 5, 1843; and November 14, 1843). For the sake of clarity, I quote these extracts (three of which have the advantage of stating explicitly the source of his arguments) below and prefix to them a passage of the *Cours*, in order to show that Comte’s position did not vary between the publication of the latter and the start of the correspondence with Mill:

“The sound biological philosophy, especially with regard to the important theory of Gall, begins to be able to treat as it scientifically deserves these chimerical revolutionary pronouncements concerning the alleged equality of the two sexes, by demonstrating directly, either by way of anatomical examination, or by way of physiological observation, the radical differences, both physical and moral, which, in all animal species, and particularly within the human race, separate one from the other, notwithstanding the common preponderance of the specific type. Comparing, as far as possible, the analysis of the sexes with that of the ages, positive biology eventually tends to represent the feminine sex, primarily in our species, as necessarily living, comparatively with the other sex, in a sort of state of continuing childhood, which removes it further, in all the more important respects, from the ideal type of the race” (A. Comte, *PS*, p. 186).

“As imperfect as biology may still be in every respect, it seems to me that it can already firmly establish the hierarchy of sexes, proving both anatomically and physiologically that for almost the entire animal chain, and especially in our species, the female sex constitutes a sort of state of radical childhood, which makes it essentially inferior to the corresponding organic type” (Comte to Mill, 16 July, 1843; in Haac [ed.], p. 179-80).

“Even if the analysis of anatomy had not as yet sufficiently clarified the explicit demonstration that our species is organically superior to the rest of

the animal kingdom (something which in fact has become demonstrable quite recently), the study of physiology would leave no doubt here, if only because man has progressively obtained the ascendancy [over all other species]. Things stand about the same way in the matter of the sexes, though to a much lesser extent" (Comte to Mill, October 5, 1843; *Ibid.*, p. 191).

"...one can consider that this doctrine [the physiology of the brain of Gall and Spurzheim] has already sufficiently established the basic principle of the hierarchy in the family [the subordination of one sex to the other], at least as far as biology can do" (Comte to Mill, November 14, 1843; *Ibid.*, p. 208)

"Even before biological theory was suitably developed by Vicq d'Azyr and Bichat, and above all independently from the physiology of the brain, we already find a respectable work (...) which had already tried to base this principle [the subordination of one sex to the other] simply on the dominant idea of the physical functions [proper to man and woman]: It is the short treatise by a physician from Montpellier, Roussel, entitled *Système physique et morale de la femme*, published in 1775" (*Id.*).

"Comparative Biology seems moreover to me to leave little doubt concerning this matter. If one follows the lessons of Monsieur de Blainville, for example, even though he proposes no express thesis of any kind here, it is impossible not to see emerge, from the whole of zoological studies, the general law of the superiority of the masculine sex in all the upper ranges of the hierarchy of living beings. One would have to descend among the invertebrates to find – and even there very rarely – any notable exceptions to this great organic principle, which, besides, shows that the difference between the sexes increases with the degrees of complexity of the organism" (*Id.*).

At first glance, this harvest of quotations might seem difficult to order into an intelligible set of well-articulated arguments. Comte indeed appealed to different disciplines (anatomy, physiology, comparative anatomy, physiology of the brain), invoked various methods (comparison of different kinds: inter-sexual, inter-age, and inter-specific), and referred to now outdated sources (Gall, Spurzheim, Roussel, de Blainville). Furthermore, he took for granted that his addressee would have no problem locating evidence for such intriguing a claim as that which maintained that the female sex was characterized by "a sort of state of continuing childhood" (Comte to Mill, 16 July, 1843; *Ibid.*, p. 180) in the biological literature, thereby assuming a familiarity foreign to the modern reader.

To make sense of these data, one must provide a comprehensive interpretative framework within which the variety of biological arguments in support of the subjection of women is laid out, related to its putative primary sources when possible, and eventually assessed in view of Comte's thesis of the inferiority of women. In this last regard, it is useful to restate what Comte needed to establish for his argument to be successful: what was to be proved was that women were deprived of, or significantly less endowed with, the specific character traits which enabled men to fulfil their social role. Among the various character

traits associated with male dominance, those depending on intellectual capacities (the various powers of abstraction, inference, comparison, foresight) and determinations of the will (perseverance, attention, authority) were those which anti-equalitarians of Comte's brand were most eager to see ascribed to a greater extent to men. Moreover, in order to render women's subjection perennial, it had to be proven that the character traits in question could not be acquired or significantly developed through exercise by women. Hence, their grounding in the immutable biological "organisation" of women. Innate inferiority with regard to intellect and willpower: such was the claim on which Comte's argument for the subjection of women was premised.

Once the content of the premise required by Comte's argument has been ascertained, the definition of the interpretative framework within which it could be established follows "naturally", so to speak: since inferiority denotes the property of an object of being in a lower position or state in degree, rank, quality, amount, etc, comparatively to some other object, and with reference to one feature common to them both, the appropriate manner of assessing this relational property is by way of comparison. Accordingly, what Comte intended to do was to compare the character traits respectively typical of men and women and ascribe the observed differences to the differences existing between the male and female biological make-up. And for Comte indeed, comparison was the method of biology *par excellence*:

"it is only in the study (...) of living bodies that the comparative art properly speaking can reach its full and characteristically philosophic development" (A. Comte, *PP*, p. 699).

But if comparison was used to settle the issue of sexual equality, by the same token it meant that the latter problem was primarily a biological one.

Out of the five modes of biological comparison<sup>8</sup> introduced by Comte, only three were referred to in the different quotations dealing with the issue of sexual equality: "comparison between the sexes" (second mode); "comparison between the diverse phases of development" (third mode), and "comparison between all the organisms forming the biological hierarchy" (fifth mode; *Ibid.*, p. 702). Moreover, Comte argued that the greater the scope of a classification, the better for its scientific value: hence, the results obtained through the fifth mode

were deemed superior to those obtained through the third, those of the third to those of the second<sup>9</sup>.

With this knowledge of the methods resorted to by Comte, we can now turn to the different biological arguments he invoked in support of the subjection of women. The following chart offers a synoptic reconstruction of Comte's claims as they appeared in the *Cours* and in the correspondence with Mill:

Intra-Specific Comparison (2 <sup>nd</sup> Mode of Comparison: Between the Sexes)			Inter-Specific Comparison (5 <sup>th</sup> Mode of Comparison: Between all living beings)	
			(2 <sup>nd</sup> Mode of Comparison: Between the Sexes)	
Anatomy	Physiology	Developmental Studies 3 <sup>rd</sup> Mode of Comparison: between the various phases of development	Anatomy	Physiology
CPP	CPP (Gall)	CPP	CPP	CPP
		July 16, 1843	July 16, 1843	July 16, 1843
	Oct. 5, 1843			(Oct. 5, 1843)
	Nov. 14, 1843 (Roussel; Gall & Spurzheim)		Nov. 14, 1843 (De Blainville)	Nov. 14, 1843 (De Blainville)
[Virey]	[Cabanis]	[Roussel, Cabanis, Virey]		

The first row distinguishes the two main comparative modes through which Comte hoped to end the debate: the intra-specific comparison of men and women would prove the inferiority of the latter, whilst the inter-specific comparison would confirm the previous conclusion by making it a particular case of a broader one, namely that female inferiority is a natural law applying to the whole world of sexually-differentiated living beings (hence the necessity of limiting the fifth mode of comparison to dimorphic species).

The second row details the different disciplines within which the comparison is undertaken: whereas anatomy focuses on the structural differences between the two sexes, physiology pays attention to the particular functions they

respectively exhibit. As to the comparison between the diverse phases of development, it distinguishes the sexes with respect to the way they develop through time.

The next four rows list the presence or absence of the different lines of reasoning in Comte's writings (CPP stand for *Cours de philosophie positive*; the letters are referred to by date), and mention within brackets the explicit references made to the works of life scientists. The last row provides possible sources or illustrations for Comte's claims.

Since the debate in the correspondence focused on the support phrenology allegedly gave to the subjection of women, my analysis will be primarily concerned with this aspect of the discussion. However, Appendix III lists the other biological arguments Comte invoked to support his claims and explains why Mill did not feel compelled to challenge them.

#### **D – Female Phrenology.**

As suggested above, Comte found in phrenology support for his claim that there exist natural and irreducible differences in intellectual and volitional powers between the sexes legitimating the paternalistic organization of society. But what was phrenology?

To put things shortly, it may be defined as a naturalistic attempt to account for the nature, variety, and development of human mental powers. A set of five main tenets summarises the gist of this approach: (1) penchants, moral qualities and intellectual faculties are inborn, both in man and animals (Innateness); (2) the brain is the organ of all penchants, qualities, and faculties (Localization); (3) each penchant, quality, or faculty is localized in a specific part - its so-called specific "organ" - of the brain (Modularity); (4) the development of a penchant, quality, or faculty is proportional to the volume of the organ in which it is localized (Proportionality); (5) since the shape of the skull reveals that of the brain, it is possible to assess the relative development of each penchant, quality, or faculty just by observing the conformation of the head (Cranioscopy).

Notwithstanding the disrepute into which it fell in later days, this theory, originated at the close of the eighteenth century by the Viennese physician F. J. Gall (1758-1828) with the active collaboration of his disciple J. G. Spurzheim

(1776-1832), continued to evoke passionate interest and bitter controversies throughout Europe (especially in German-speaking states, France, and England) and the United States until 1850. It then progressively faded away from the public and scientific scene so as to become almost completely extinct by the start of the twentieth century<sup>10</sup>. The reasons why Gall's theory appealed to many were diverse, but can be summarized under three main heads: metaphysical, methodological, and social.

Metaphysically speaking, the most ardent materialistic supporters of phrenology took its emphasis on the material dependence of mind on brain to be the final blow to the old-aged conception of the soul as immaterial, notwithstanding Gall's cautious qualifications as to the agnostic stance of phrenology in matters ontological: his claiming that "the brain was the organ of the mind" was his manner of accommodating the concerns of those who doubted the religious orthodoxy of the new science. For, if the mind was nothing over and above the brain, it would perish with it, which clashed with the spiritualist dogma of the immortality of the soul; furthermore, if the mind was equated with the brain, psychological phenomena would be governed by laws as deterministic as the ones that applied to material phenomena, thereby rendering otiose the idea of free will.

As far as methodology was concerned, phrenologists claimed that the theoretical tenets developed by Gall and Spurzheim gave birth to a properly scientific study of the mind. By assuming – through the Innateness Thesis – a functional continuity between animals and humans with regard to mental phenomena (the latter merely developing what was already present, albeit less markedly, in the former, even if some intellectual faculties seemed to appear only in man), phrenology fitted well the highly naturalistic bent typical of early nineteenth-century biology, especially in France and England where the comparative method was heralded as the key to a better understanding of organic phenomena. Gall's masterstroke was to include mental phenomena in the latter's realm, via his Localization Thesis (2). Moreover, by emphasizing the power of the instinctual and affective drives in man, he broke with an overly intellectualistic depiction of mankind.

However, the Localization Thesis merely amounted to the formal assumption of the dependence of mental phenomena on brain phenomena. Gall's theory became genuinely informative only because it included the Modularity

Thesis (3), according to which the brain was composed of several organs that were the substratum of the different mental dispositions. Only when a detailed account of the number, relations, and localizations in the brain of these dispositions was given, could phrenological conjectures be considered scientifically progressive. To be sure, many objected to Gall, even among his most faithful supporters, that his phrenological charts were proved wrong or inaccurate. But they were proved wrong because they were falsifiable. They were false but nevertheless scientific hypotheses, if by “scientific” one understood “amenable to empirical testing”.

The Proportionality Thesis (4) also contributed to substantiate the phrenologists’ claim that their approach was thoroughly empirical, since it enabled them both to resort, at least in theory, to comparative observations in order to assess the differential development of one’s mental capacities and to account for the variety of individual characters. However, they usually did not consider their acknowledgment of the fact of inter-individual differences as a threat to their project of a genuine science of man, for it was fortunately the case that the differential development of each mental capacity was lawlike. Phrenologists thus found a balance between generality (the lawlikeness of mental development) and specificity (the ability to identify the idiosyncratic character of a given subject).

Unfortunately, the material evidence on which phrenology intended to base its conclusions proved elusive, for, as Gall himself sadly recognized, it was almost impossible to observe the brains of individuals *in vivo* or just after their death because of religious and moral prejudices. Moreover, in the latter case, the likely alterations of the cortex provoked by the fatal disease or accompanying the death process itself (about which little was known) were also regarded as serious observational predicaments. Hence the appeal to cranioscopy (5), that is the semeiological practice of inferring from the flat and salient parts of the cranium the relative development of the corresponding parts of the cerebrum. Based on a quite popular embryological thesis according to which the bones of the dome of the cranium bore the imprint of the underlying cerebral cortex, Gall’s cranioscopic thesis had the further advantage of considerably extending the stock of subjects available for study, for even the dead – or rather their skull – could contribute to the enterprise.

Finally, it was the prospect of the possible applications of this new science of human capabilities to the art of government that drew to it a considerable

number of politicians, enlightened civil servants, and social reformers. For it rendered possible scientific reorganization of society by ascribing to individuals specific roles that would take advantage of their talents whilst mitigating the negative effects of their flaws. Teachers and physicians would thus assess the abilities and disabilities of their pupils or patients and counsel them on the proper career or way of life. Entrepreneurs would select knowingly their employees and place them at their appropriate place in the production process so as to maximize outputs. Statesmen would grant political rights and electoral franchise only to those who could exercise them fully and responsibly, and put in charge of matters of public concern individuals capable of dealing with these tasks. Thanks to phrenology, judges would be able to distinguish between the criminal penchant of the hardened convict and the momentary lapse of the occasional offender and to proportionate rationally the respective sentences of both in accordance with their dangerousness for society. The inventory of the possible social applications of phrenology was almost endless and testified to its potential usefulness.

To be sure, phrenology could serve a wide variety of political interests. In Restoration France, it became the flag of those who wanted to get rid of the last vestiges of *Ancien Régime* social hierarchy, some Republicans included. In England at the time of the first Reform Bill, as R. Cooter has argued in his *Cultural Meaning of Popular Science*, it was used as a tool to legitimate the existing social order and to pacify the relations between the working, middle, and ruling classes.

However, what was common to these different discourses was the idea that phrenology, understood as the naturalistic science of human capacities, could provide a scientific tool for an organization (or reorganization) of modern societies based on the adequate knowledge of what was held to be the proximate cause of actions in human individuals, namely mental dispositions. But, contrary to the Enlightenment belief of an indefinite intellectual and moral progress of mankind, phrenologists, even when they granted the possibility of shaping one's personality, severely limited the scope of educational endeavours. The most one could attempt was to develop one's inborn capacities, for there was no hope of transforming oneself radically: one's affective, moral and intellectual lot was fixed between certain limits by one's cerebral constitution<sup>11</sup>.

As for women's lot, there is evidence that a wide consensus reigned among the phrenological community<sup>12</sup>. Focusing on the French branch of the movement

before 1848, M. Staum underlines that the little written about the capabilities of women was in line with the gender stereotyping prevalent in medicine and biology<sup>13</sup>: “their affectionate and maternal feminine nature marked them for domestic tasks. Even if women complemented men, they would not benefit from educational opportunity, occupational advancement, or full citizenship” (M. Staum, *Labeling People*, p. 81). The same pronouncements seem to have been willingly echoed by most phrenological quarters in Europe during the first half of the nineteenth-century, even the more so because they had already appeared in the writings of phrenology’s founder Gall and of its most active propagator Spurzheim.

What is striking about Gall’s and Spurzheim’s comments on the topic of women’s capabilities is that it was never treated as a subject worthy of inquiry or about which any serious doubt could be raised. Such was the force of the traditional conception of feminine roles and of the alleged naturality of the mental dispositions on which they depended, that the psychological differences observed between the sexes served as proofs for some of the theoretical tenets of phrenology. For instance, when, in the second volume of the *Anatomie et physiologie du système nerveux en général et du cerveau en particulier* (1812)<sup>14</sup>, Gall and Spurzheim attempted to adduce evidence for the Localization thesis (according to which “the brain is the sole organ of all intellectual faculties and all moral qualities”), the “ninth proof” ascribed the differences between the respective faculties and qualities characteristic of men and women to differences of brain conformation in the two sexes:

“Why is it generally the case that woman possesses certain qualities and certain faculties at a more eminent degree than man, whereas man prevails over woman with respect to other qualities and faculties? (...) So as to be able to answer those questions and others of the same kind, one must know the differences characteristic of the structure of the brain. (...) But the very possibility of answering these questions still presupposes that it is in the brain that one must search for the cause of all moral qualities and all intellectual faculties” (F. J. Gall & J. G. Spurzheim, *Anatomie et physiologie*, II, p. 260)<sup>15</sup>.

Similarly, one of the proofs of the Modularity Thesis postulated the existence of a plurality of cerebral organs to explain sexually specific mental traits:

“Each time the two sexes of the same species display marked differences of penchants or faculties, the shape of their encephalon differs as markedly. The brain of woman is usually less developed in its antero-superior parts; hence the narrower and lower forehead of women compared to that of men” (*Ibid.*, II, p. 382-3)<sup>16</sup>.

According to the Proportionality Thesis and given the actual localisation of the different organs, these “physical differences” in brain conformation were said to provide a rationale for the differences in penchants, qualities, and faculties characteristic of each sex. As Gall stated in a later treatise:

“These differences explain perfectly the superiority of intellectual faculties in man, and the greater energy of the love for children in women, etc.” (F. J. Gall, *Recherches sur les fonctions du cerveau*, I, p. 204).

More precisely, the lesser development of the frontal region of their brain, Gall argued in the fourth volume of his *Anatomie et physiologie* (1819), accounted for their difficulties at grasping genuine causal relations and at forming inductive generalizations, the distinctive features of what was revealingly dubbed “the philosophical head” (F. J. Gall, *Anatomie et physiologie*, IV, p. 175). This underdevelopment resulted in women’s susceptibility to false judgments, credulity, prejudices and superstition:

“if such weaknesses are more often the prerogative of the sex, of women in other respects well-educated and good-spirited, it is because the antero-superior parts are ordinarily subject to a considerably lesser development in women than in men; and, consequently, they hardly suspect that there cannot be an effect or an event without a cause.

In proportion as the cerebral parts located near the antero-superior region of the forehead are more developed, the characteristic faculties of the human mind appear more markedly. Man raises himself higher and higher, not only above the beast, but also the crowd of his fellow-men” (*Ibid.*, IV, p. 177)<sup>17</sup>.

Gall certainly thought that the last qualification applied also to men in general when compared to women.

Even if it was not fully faithful to his former master’s teaching, J. G. Spurzheim provided the English-speaking public with a summary of the somewhat tedious and unarticulated argument Gall had proposed, in which the links between the development of cerebral organs and the resulting development of mental dispositions were made clear:

“in general the female head is smaller than that of the male; it is often somewhat longer from the forehead to the occiput, but it is commonly narrower laterally. The basilar region of the female head is also smaller, the occipital more elongated, and the frontal developed in a minor degree, the organs of the perceptive faculties being commonly larger than those of the reflective powers” (J. G. Spurzheim, *Phrenology in connexion with...*, p. 40-1)<sup>18</sup>.

To balance this somewhat negative account of women’s intellectual capacities<sup>19</sup>, Gall and Spurzheim both emphasized the greater development of

affective and altruistic dispositions in women. Whereas men were generally led by their “instinct of propagation” because of a larger cerebellum<sup>20</sup>, Gall argued that the greater development of the superior part of the occipital region in women explained their love of children<sup>21</sup>. Drawing on the traditional medical and physiological lore that insisted on the reproductive and caring functions, Gall piled up the various instances of what he assumed to be inborn traits of women: little girls’ interest for dolls; the greater attachment of females to their offspring in animal species; the happiness of the mother when she realises she is pregnant, etc. He then concluded that

“The entire physical constitution of woman as well as her intellectual and moral character convince us that she is destined, more than man, to take care of children” (Gall, *Anatomie et physiologie*, III, p. 146)<sup>22</sup>.

Spurzheim merely echoed Gall when, after having drawn the attention of his readers to women’s more developed organs of “philoprogenitiveness”, “attachment”, and “benevolence”, he finally asserted that

“It is quite evident that nature has destined the two sexes to particular and dissimilar situations, and that she has endowed the various dispositions of each with different degrees of activity” (J. G. Spurzheim, *Phrenology in Connexion with...*, p. 43).

Consequently, in his writings about education, Spurzheim took advantage of the allegedly scientific approach of phrenology “to examine what natural claims [women] have to equality”. For “education”, he argued, “ought to be regulated according to the determination of the latter point” (J. G. Spurzheim, *A View of the Elementary Principles of Education*, p. 272)<sup>23</sup>. Even if he acknowledged a few cases of spirited women, Spurzheim stuck to his opinion that “the two sexes, in the actual state of things are naturally different in their dispositions” (*Ibid.*, p. 276). To be sure, the difference was a matter of intensity, not of nature, for men and women “possess essentially the same powers of mind, the whole difference consists in the degrees in which they have them” (*Id.*). For instance, it was the case for rational abilities:

“The intellectual faculties (...), like the feelings, are essentially the same in both sexes, are widely different in power in the two, and men undoubtedly enjoy the superiority” (*Ibid.*, p. 285).

Spurzheim then went on to list the different traits that rendered women unfit for intellectual accomplishments: inability to focus on a definite subject, exclusive

attention to the present, poor resistance to sustained work, failure to grasp causal relations, etc. All this would explain that

“In arts and sciences females rarely show themselves masters, they most commonly remain apprentices” (*Id.*).

Accordingly, for Spurzheim, when one took pain to compare “the understanding of the two sexes”, one came to grasp why “one half of the human species has excluded the other half from all participation in government” (*Ibid.*, p. 284). Everything considered, the exclusion was legitimate because it was founded on the natural inequality of the sexes.

Of course, Spurzheim was aware that some, following the lead of Mary Wollstonecraft<sup>24</sup>, had ascribed this absence of intellectual achievements by women to a deficient education, and claimed that what many held to be a natural inequality was just the consequence of contingent social arrangements in which the female sex was not given a fair chance. However, Spurzheim did not find the objection decisive, since he held that when women engaged deliberately in pursuits requiring a certain amount of intellectual skills, and received the proper education in that last regard, they still could not rival men, as he thought the case of the fine arts testified. “Why then, may we ask”, Spurzheim boasted, “do their compositions so rarely equal those of men?” (*Ibid.*, p. 286). The answer was straightforward: because no amount of training would ever instil into them what they were lacking. Spurzheim’s own gentlemanly conservative pronouncement followed:

“I cannot perceive any arrangement of nature that can lead me to expect, that women will cease to be considered as subordinate to men. Let them endeavour, if they please, to acquire the same degree of talent, but till they have acquired it, let them cherish order, and exercise the virtues of their actual condition in society, rather than attempt to rise into a sphere for which they are not at present fitted” (*Ibid.*, p. 288).

In the mind of Spurzheim, it was certain that such a change would never occur: women would remain mothers, wives, and daughters, and never would they become the equals, at least intellectually, of their fathers, husbands or sons. Such was the fate their brain dictated. By the same token, phrenology could be held to help to decide some of the questions raised by the debate over sexual equality: firstly, it maintained that mental dispositions were inborn, fixed at the outset, the scope of their developmental potential being determined within certain limits.

Secondly, no amount of education could transform or modify radically the set of dispositions constitutive of one's individual character.

One of the many corollaries of these propositions was that gender-related traits were innate and immutable. And since men, according to phrenological analysis, were endowed with specific character traits enabling them to achieve supervision in ways unavailable to women, the subjection of the latter followed naturally. In that respect, phrenology could support the plea for civil, political, and social inequality between the sexes by showing that it had a natural origin and justified grounds. Hence, Comte's enthusiastic acceptance of the new "physiology of the brain", which provided support for his non-egalitarian theses, and Mill's pointed criticisms should come as no surprise. Let us now turn to the details of our two authors' respective treatments of phrenology and its relevance for the sexual equality issue.

---

<sup>1</sup> One – concerning phrenology – would prove particularly important with regard to the later discussion on sexual equality: see *infra* IID & III.

<sup>2</sup> See IB.

<sup>3</sup> Comte referred to his *Système de politique positive* in four volumes, eventually published between 1851 and 1854.

<sup>4</sup> Comte singled out as objects of praise Mill's treatment of induction, its presentation of the methods of experimental inquiry, his emphasis on the deductive method, and his account of sociology in the sixth book of the *System*. Regarding the possible disagreements Mill evoked in his previous letters, Comte said he found none except that dealing with the "so-called calculation of probability" which he regarded as "a radical aberration of the spirit of mathematics" (Comte to Mill, 16 May, 1843; in Haac [ed.], p. 155).

<sup>5</sup> The very fact that Mill associated property and marriage as two objects for possible reforms is quite telling: one may indeed venture that these two institutions constituted the heart of nineteenth-century European (*bourgeois*, one could add) societies. Moreover, and that was one point developed at length by Mill, usual prejudices tended to regard wives as their husband's chattel, and family as their property. So, one could be prompted to think that changes in either of these institutions would bring a change in the other.

<sup>6</sup> Quite paradoxically, Mill also maintained a few lines below that biology could back his advocacy for sexual equality: "Meanwhile, what I would have to say in support of my principal heresy would be entirely drawn from principles of biology, which doubtless are very imperfect. [This] not only because I lack sufficient knowledge of biology, but perhaps also due to today's insufficiency of biological theory itself as it applies to sociological speculation" (Mill to Comte, 13 July, 1843; in Haac [ed.], p. 174). In fact, one may surmise that Mill meant that the hypothesis of women's natural inferiority had against it negative evidence (it had been refuted), without assuming that he could harvest in favour of the hypothesis of natural equality positive evidence. In short, he could prove Comte wrong but not himself right.

<sup>7</sup> Appendix I provides a historical account of the likely sources of Comte's and Mill's biological knowledge and intends to shed new light on the vexed question of Comte's influence on Mill by showing how the latter drew on the former for his logical and methodological appraisal of the life sciences.

<sup>8</sup> The remaining ones were the first ("comparison between the diverse parts of a given organism"; A. Comte, *PP*, p. 702) and fourth modes ("comparison between the different races or varieties of each species"; *Id.*).

<sup>9</sup> *Id.*

<sup>10</sup> The history of phrenology is now well-charted territory. For a brief and up-to-date account of Gall's life and works, see J. Van Wyhe, "The Authority of Human Nature: the *Schädellehre* of Franz Joseph Gall", *British Journal of the History of Science*, 2002, 35, pp. 17-42, which aptly complements the philosophically and methodologically oriented approach of G. Lanteri-Laura, *Histoire de la phrénoologie. L'homme et son cerveau selon F. J. Gall*. Second edition. Paris: PUF, 1993 (esp. Chap. II). On phrenology in France, see M. Renneville, *Le langage des crânes. Une histoire de la phrénoologie*. Paris: Institut d'édition Sanofi-Synthélabo, 2000; for England, see R. Cooter, *The Cultural Meaning of Popular Science. Phrenology and the Organization of Consent in Nineteenth-Century Britain*. Cambridge: Cambridge University Press, 1984, and J. Van Wyhe, *Phrenology and the Origins of Victorian Naturalism*. Aldershot: Ashgate, 2004; for the United States, see J.D. Davies, *Phrenology and Fad Science: a 19<sup>th</sup>-Century American Crusade*. New Haven, Conn.: Yale University Press, 1955.

<sup>11</sup> This progressive shift from a belief in equality to an emphasis on innate differences is described in F. E. Manuel, "From Equality to Organicism", *Journal of the History of Ideas*, 1956, 17:1, pp. 54-69.

<sup>12</sup> The early phrenological treatments (that is pre-1850) of sexual differences have not received much attention from historians: two exceptions are C. Russett, *Sexual Science. The Victorian Construction of Womanhood*. Cambridge: Cambridge University Press, 1989, pp. 19-22; and M. S. Staum, *Labeling People. French Scholars on Society, Race, and Empire, 1815-1848*. Montreal & Kingston: McGill-Queen's University Press, 2003, pp. 64-5.

<sup>13</sup> See Appendix II.

<sup>14</sup> F. J. Gall & J. G. Spurzheim, *Anatomie et physiologie du système nerveux en général et du cerveau en particulier, avec des observations sur la possibilité de reconnaître plusieurs dispositions intellectuelles et morales de l'homme et des animaux par la configuration de leurs têtes*. 4 volumes. Paris: F. Schoell, 1810 and 1812, for volumes I and II; Librairie grecque-latine-allemande, 1818, for volume III; N. Maze, 1819, for volume IV. The collaboration between the two men ceased after the second volume. References to that book and Gall's *Recherches sur les fonctions du cerveau* (see n. 15 *infra*) are made to volume, and page numbers.

<sup>15</sup> The same point is maintained in F. J. Gall's later *Recherches sur les fonctions du cerveau et sur celles de chacune de ses parties*. Six volumes. Paris: Béchet, 1822 (for vol. I); Boucher, 1822 (for vol. II) and 1823 (for vol. III, IV, & V); Bailliére: 1825 (for vol. VI): see for instance II, p. 160. See also J. G. Spurzheim, *Observations sur la phrénoologie, ou connaissance de l'homme moral et intellectuel fondée sur les fonctions du système nerveux*. Paris: Treuttel & Würtz, 1818, p. 27: "Certain faculties are more active in men, others in women. It is usually claimed that man thinks and woman feels. Malebranche derived this difference between the two sexes from the different degree of density of their cerebral fibres. But it is easy to prove that, in general, the shape and development of men's and women's brains vary, and that women have a narrower and longer head (from the forehead to the occipital bump), whereas men have it shorter but larger on both sides". The same contention was repeated in his *Essai philosophique sur la nature morale et intellectuelle de l'homme*. Paris: Treuttel & Würtz, 1820, p. 79: "nature has made a distinction between the two sexes: it has given some more active faculties to women, and some other more energetic to men; the latter would never feel exactly like women, and the former would never think like men, because nature has not intended it".

<sup>16</sup> The description is more precise in the *Recherches sur les fonctions du cerveau*. "The parts of the brain located in the antero-superior part of the forehead are smaller in most women; hence their generally smaller and shorter foreheads. On the contrary, they have the parts located near the upper part of the occipital bone greatly more developed. Their cerebellum is generally smaller than that of men" (F. J. Gall, *Recherches sur les fonctions du cerveau*, I, pp. 204-5).

<sup>17</sup> Once again, Gall repeated this claim in his *Recherches*, but there he underlined that women's lesser intellectual capacities was a fact primarily relative to their brain conformation and not to be ascribed to a larger physiological specificity or their education: "Compare the cerebral organization of the most distinguished men with regard to superior intellectual faculties with that of almost all women, and you will become certain that their inferiority in that respect is neither due to the education they receive nor to certain inconveniences proper to them, but is uniquely dependent on the lesser development of the cerebral parts located in the antero-superior of the forehead" (*Ibid.*, V, p. 225).

<sup>18</sup> J. G. Spurzheim, *Phrenology in Connexion with the Study of Physiognomy*. Boston: Marsh, Capen, & Lyon, 1833.

<sup>19</sup> In his *Observations sur la folie ou Sur les dérangements des fonctions morales et intellectuelles de l'homme* (Paris: Treuttel & Würtz, 1818, pp. 189-91), Spurzheim also added that women were more prone to madness.

<sup>20</sup> See F. J. Gall, *Recherches sur les fonctions du cerveau*, III, pp. 245-415. On the phrenological treatment of the instinct of propagation, see E. Clarke & L.S. Jacyna, *Nineteenth-Century Origins of Neuroscientific Concepts*. Berkeley: University of California Press, 1987, pp. 286-91; M. Shortland, "Courting the

---

Cerebellum: Early Organological and Phrenological Views of Sexuality”, *British Journal of the History of Science*, 1987, 20, pp. 173-99.

<sup>21</sup> See F. J. Gall, *Recherches sur les fonctions du cerveau*, III, pp. 415-72.

<sup>22</sup> The same development and the same conclusion were repeated in F. J. Gall, *Recherches sur les fonctions du cerveau*, V, pp. 415-73.

<sup>23</sup> J. G. Spurzheim, *A View of the Elementary Principles of Education, Founded on the Study of the Nature of Man*. Edinburgh: A. Constable & Co, 1821.

<sup>24</sup> Spurzheim’s acquaintance with Wollstonecraft’s writings seems to have been quite superficial, if not merely second-hand, for he misspelled her name twice in the space of two pages (*Ibid.*, p. 275-6).

### III – The Phrenological Controversy.

Something momentous happened with phrenology regarding the “nature” of women during the course of the nineteenth century: whereas generations of physicians used to maintain that ‘*Tota mulier in utero*’, the new ‘cerebral physiology’ of Gall and his associates claimed that ‘*Tota mulier in cerebro*’. This shift did not escape Comte’s notice, as his insistence on the key-role of phrenology in the settlement of the sexual equality issue illustrated. As he put it in the *Cours* with regard to women’s subjection:

“I have purposely set aside the vulgar consideration of the mere material differences on which this fundamental subordination has been irrationally grounded [i.e. anatomical differences merely concerning the body]; for it has to be essentially connected, as previous indications have shown, with the nobler properties of our cerebral nature” (A. Comte, *PS*, p. 187).

Accordingly, this chapter intends to present the manner in which Comte appealed to phrenology to substantiate his case for women’s subjection (IIIA). I then show that Comte’s reliance on phrenology in the case of sexual equality was a particular instance of a more general endorsement of the new “physiology of the brain” as a legitimate approach to the study of mental phenomena (IIIB). Thirdly, I discuss the exact content of the various criticisms levelled at phrenology by Mill and show how they were compatible with his naturalism. (IIIC).

Now, a reader conversant with the Comte-Mill correspondence may object that my reconstruction of the discussion deliberately ignores the fact that the topic of phrenology was addressed before, and independently of, the debate on sexual equality. To this objection, I reply with the following interpretative hypothesis.

If the discussion on the scientific status of phrenology cropped up in the correspondence, it was because Mill was aware of the crucial role it played in Comte’s case for women’s subjection. Accordingly Mill intended to defuse Comte’s sexist argument by demonstrating that phrenology, the allegedly scientific basis on which it was grounded and to which it conferred some sort of naturalistic prestige, did not deliver what Comte needed. Furthermore, what Mill aimed at was not merely to show that the actual results borrowed from phrenology were either false or unwarranted and hence unreliable as evidence for the settlement of the sexual equality issue, or that they did not lead to the sexist conclusions reached by Comte (as I show in this chapter), but also that biology could never be the appropriate

basis on which to draw sociological inferences (as I show in the following chapter). Consequently, even if the purely methodological nature of the discussion in the correspondence cannot be denied, one has to acknowledge that what sparked the debate was Mill's political and moral concern for the likely practical consequences of Comte's endorsement of phrenology.

### **A – Comte and the Phrenological Support for Women's Subjection.**

Comte never failed to emphasize the importance of the phrenological argument in his case for sexual inequality. As already noted, the *Cours de philosophie positive* singled out “the important theory of Gall” as the branch of the “sound biological philosophy” most capable of refuting the “chimerical revolutionary pronouncements concerning the alleged equality of the two sexes” (A. Comte, *PS*, p. 186). The correspondence with Mill revealed no change in perspective:

“one can consider that this doctrine [Gall's] has already sufficiently established the basic principle of the hierarchy in the family, at least as far as biology alone can do” (Comte to Mill, November 14, 1843; in Haac [ed.], p. 208).

However, the correspondence improved over the *Cours* in at least one respect: it provided more precise references to the phrenological literature dealing with the sexual equality issue. Accordingly, Comte referred Mill to some of J. G. Spurzheim's books, namely

“his *Observations sur la Phrénologie*<sup>1</sup>, the *Essai philosophique sur les facultés morales et intellectuelles*<sup>2</sup>, his book on education<sup>3</sup>, and (...) his work on madness<sup>4</sup>” (*Id.*).

In the preceding paragraph, Comte also mentioned F.J Gall's *Anatomie et physiologie du système nerveux en général et du cerveau en particulier*<sup>5</sup>, and he evoked, without quoting its title, the *Recherches sur les fonctions du cerveau et sur celles de chacune de ses parties*<sup>6</sup>.

As seen in the previous chapter, these works provided purported evidence for the claim that women were intellectually and morally inferior. Yet, as Comte acknowledged, they never addressed the issue of sexual equality for its own sake: “The subordination of one sex to the other”, he regretted, “is not directly examined in these books” (*Id.*). But he certainly thought this shortcoming could be remedied if one took the pain to draw from the scientific appraisal of women's capacities the appropriate social and political consequences.

Comte's insistence on underlining the importance of phrenology was not merely an attempt on his part to support by whatever means available his sexist claims. Comte genuinely regarded the new "phrenological physiology" as a progressive attempt to establish on secure grounds a scientific knowledge of man. As the question of sexual equality illustrated, it could also crucially contribute to a rational handling of pressing political problems such as the determination of individuals' social roles, the legitimisation of existing hierarchies, or the definition of the aim and structure of the educational system. For instance, just as it was said to settle negatively the case for women's equality, phrenology could also be "operationalized", to use Jan Goldstein's phrase, for the adjudication of the claims of other unruly groups, such as the working class<sup>7</sup>. In this regard, the importance of phrenology as a tool of social ordering should not be overlooked, for its analysis of human capacities could be applied to the organization of society at large.

In his correspondence with Mill, Comte hinted at that social dimension of phrenology. In a letter dated March 4, 1842, Comte claimed that phrenology was the appropriate ground of what he called "a truly rational theory of human nature" (in Haac [ed.], p. 58), that is the basis on which to establish sociology, which was the science with which he had what he had most concerned himself. What was the nature of the relations between them? As seen previously, Comte held mankind to be a sociable species that demanded to be organized in a hierarchic manner so as to satisfy the needs of its members. This hierarchic structure rested in its turn on the respective capacities of the different individuals (their "nature"), which defined their social role and status. What phrenology told us, Comte maintained, was that there existed several independent cerebral organs on which these capacities depended, and that "there [was] even a first general division of the brain into three areas which correspond[ed] to three types of manifestations" (*Id.*), namely that of the animal, the moral, and the intellectual faculties. When read in the light of the social theorization of the *Cours*, there is no doubt that these three cerebral areas could correspond to Comte's schematization of the three kinds of faculties, namely the intellectual, affective, and active or practical faculties. Since Comte thought that each of these three kinds of faculties were designed so as to satisfy specific needs (need for knowledge, need for affection, need for subsistence), the consequence on the sociological level was straightforward: everybody would be assigned, conformably with their particular

biological make-up, a specific role in society. Those in which the intellectual faculties dominate would become “savants”, those whose active qualities were most developed would join the group of practical individuals (as proletarians or entrepreneurs), and those with highly developed affective qualities would form the third group. From what we have learnt from the previous chapter, we know who would be the members of the latter group: women, of course, whereas men will be distributed into the two remaining groups.

At this point, one may object that I am actually over-interpreting Comte and that, in this letter, he never presented as such the relations between biology and sociology. To be sure, the link was not made explicitly, but it was nonetheless implied by Comte’s final words:

“As far as I am concerned, it [cerebral physiology] has certainly been of great use and you must have discovered in my fourth and fifth volumes what extensive use I was able to make of it, while avoiding misplaced or premature conclusions” (*Ibid.*, p. 59)

Since we know that Comte, in the fourth and the fifth volumes of the *Cours*, had theorized the social role of women in the light of their alleged “nature”, and given that this letter stated out in full on the basis of which kind of knowledge such a theorization had been made, one may reasonably assume that Comte regarded his treatment of sexual equality as an instance of the application of phrenology to the organization of society.

Now, when all these elements are considered together, it would be very unlikely that such a perceptive reader as Mill had missed the political and moral consequences of Comte’s endorsement of phrenology. This may explain why the latter subject cropped up as a matter worth debating even before Comte and Mill broached the issue of sexual equality, and why Mill felt the need to engage the discussion.

### **B – Comte’s Methodological Appraisal of Phrenology.**

Comte presented his “General Considerations on the Positive Study of Intellectual and Moral, or Cerebral, Functions”, that his views on phrenology, in the Forty-Fifth Lesson of the *Cours de philosophie positive* <sup>8</sup>. The very fact that he

dedicated an entire Lesson to the subject testifies to its importance in Comte's system.

The advent of phrenology, claimed Comte, was momentous because it marked the final phase of an epoch-making process in the history of science: the extension of the positive method, characterized by its focus on phenomena and its search for laws, to the workings of the human mind. According to Comte, "Gall's immortal works" (A. Comte, *PP*, p. 872) could be considered the legitimate continuation of the Cartesian enterprise. Just as Descartes' mechanistic explanation of physical and biological phenomena superseded the metaphysical approach of the Scholastics, phrenology had introduced positivity in the study of mental phenomena. In fact, Comte suggested,

"the primitive distribution of the intellectual system into the positive and the metaphysical method, as Descartes instituted it (...) is, without a doubt, an indispensable concession this great renovator could not (...) refrain from making to the general spirit of his century and to the irresistible influence of his own education" (*Ibid.*, p. 852).

The great divide, instituted in the *Meditations*, between *res cogitans* and *res extensa*, mind and matter, was illusory: the former had to be investigated like the latter, according to the same methods. Just as one could study the digestive function by dissecting the different organs and analysing the tissues performing it, one could attempt to determine the organic conditions of mental events in the same spirit, and this formed an essential part of anatomy and physiology.

The main agent of this "fortunate philosophical revolution", Comte went on, was the "illustrious Gall", whose works constituted the basis of a "new system of studies of intellectual and moral man" (*Ibid.*, p. 846-9). However, Comte was also wary of emphasizing that, even if phrenological investigations represented the "unquestionable beginnings of positivity" in the science of man, phrenology itself was not "a mature science, but a science still entirely in the making, except for its philosophical principles which had been properly established by Gall" (*Ibid.*, p. 851). Accordingly, a good part of the Forty-Fifth Lesson was devoted to the clarification of the methodological principles governing the new "phrenological physiology" (*Id.*), the critical appraisal of some of its shortcomings, and the introduction of a few improvements designed to remedy those.

His definition of the “positive theory of affective and intellectual functions” left no mystery as to Comte’s endorsement of Gall’s localisationist thesis, for he considered it as

“the study, at one and the same time experimental and rational, of the various phenomena of internal sensibility peculiar to the cerebral ganglions which are deprived of immediate external apparatus” (*Ibid.*, p. 849).

Anatomically speaking, all mental phenomena were primarily dependent on the brain for their production. And even if P.-J. G. Cabanis had popularised the idea that the brain produced thought just like the liver secreted bile, only Gall could claim to have conceived the relations between mind and brain in their full extent since he was the first to demonstrate that both the intellectual and the affective functions were ascribable to the latter.

As for the physiological aspect of Gall’s theory, Comte held that the two “philosophical principles” (*Ibid.*, p. 863) on which it was based and which were intended to provide a rationale for the origin and functioning of the various mental faculties, namely the Innateness thesis and the Modularity Thesis, were “beyond questioning” (*Id.*). Comte in fact thought that cases of strong characters and specific talents were evidence for the former principle, whereas mental disorders, which often affected one disposition but left the others intact, proved the latter. He also held that the comparative observation of man and animals supported both theses, since education could certainly not explain animal behaviours, whose diversity could be accounted for by known differences in their cerebral constitution. He added that Gall’s theory was only “the scientific formulation of the general results of universal experience with respect to the true intellectual and moral constitution of man in all times and in all places” (*Ibid.*, p. 864), a convergence he regarded as the “essential symptom of the truth” (*Id.*) of phrenology, since the “competence” of common sense was “indisputable regarding phenomena whose very nature subjects them to its continuous and careful scrutiny” (*Id.*). As seen previously, it was indeed the fact that phrenology corroborated the “vulgar’s view” of women as creatures endowed with more energetic affective faculties but less active intellectual dispositions.

These three theses set the very aim of phrenological investigations:

“The proper and elementary object of phrenological physiology consists in (...) determining, as accurately as possible, the cerebral organ specific to each disposition, affective or intellectual, expressed markedly and clearly

acknowledged as being at the same time simple and new; or, conversely, what is more difficult, in determining which part of the encephalic mass displaying the true anatomical conditions of a distinct organ governs a given function” (*Ibid.*, p. 865)<sup>9</sup>.

Comte acknowledged that the homogeneous constitution of cerebral ganglions and the absence of sharp observable distinctions in the cerebrum were serious obstacles to the second mode of inquiry – from organ to function. Moreover, he asserted that in man the affective and intellectual functions tended to occupy “less and less extended portions of the encephalic mass” (*Ibid.*, p. 866) compared with animals, which would render their identification difficult. But he suggested that pathological anatomy (whose ‘natural experiments’ identified precisely the cerebral localizations on which depended mental disorders, that is the pathological functioning of a specific disposition) and comparative anatomy (which would correlate the development of brain organs with that of cerebral functions in the animal scale) would help solve this predicament. Moreover, Comte held that the mode of inquiry which proceeded from function to organ would compensate for the scarce anatomical data: the physiological approach, relying on the systematic observation of overt behaviours, would enable one to draw a list of the elementary faculties from which tentative localizations could be ventured.

Now, Comte was not blind to the fact that Gall actually operated according to that second mode for his own brain charts and that his attempts at localizing functions had been heavily criticized by anatomists who claimed that ablations or clinical evidence did not corroborate Gall’s hypotheses and therefore rejected his physiological approach. Comte acknowledged that these objections were “difficult to dismiss” and agreed that the set of actual localizations proposed by Gall was “notoriously incorrect in many essential respects” (*Ibid.*, p. 871). However, and despite its factual inaccuracy, Comte claimed that Gall’s attempt at localizing “was not only legitimate, but also an unquestionable instance of the general right of naturalists to frame hypotheses” (*Id.*).

Drawing on the theory of physical hypotheses exposed in the Twenty-Eighth Lesson of the *Cours*, Comte claimed that Gall’s erroneous localizations nonetheless satisfied the epistemological standard characteristic of genuine scientific conjectures. According to that theory, only propositions “susceptible, by their own nature, of a more or less remote but clearly inevitable positive verification and whose degree of precision would be in exact harmony with the one

characteristic of the corresponding phenomena" (*Ibid.*, p.457) were legitimate. In this regard, it was indeed the case that Gall's localizations assigned, at least in theory, precise and definite portions of the brain to the various intellectual and affective functions, which assignations it was the office of the anatomists to test by way of observations and experiments (when possible) or by resorting to clinical evidence or observations drawn from comparative anatomy. Just as the positive theory of disease emerged with Bichat's pathological anatomy (which correlated the different kinds of diseases with the various human tissues) and Broussais' theory of irritation (which related diseases to excessive irritation of certain organs), the same could be expected for the study of intellectual and affective functions. To be sure, Gall's phrenological charts were proved wrong, but that was because they were falsifiable. Moreover, and in line with the anti-inductivist stance he took with regard to theory-formation, Comte held that a false hypothesis was better than no hypothesis at all, since it launched the search for a better one. Hence, Comte concluded, Gall's attempts at localizing were legitimate.

The fruitfulness of such attempts, Comte argued, was already illustrated by the fact that some of Gall's localizations had been corroborated by anatomical investigation, which was evidence that all "actual organs of the various cerebral faculties, even if they are not yet identified, are likely to be so in the future" (*Ibid.*, p. 872): the case in point was that of the love of offspring or "philoprogenitiveness", which was located in the posterior lobes of the brain, and that of the instinct of propagation or "amativeness", in the cerebellum<sup>10</sup>.

Moreover, and although he refused to pronounce on the exact number and locations of fundamental functions, Comte nonetheless enthusiastically endorsed the "general doctrine" (*Ibid.*, p. 866) of Gall, that is his distinction between intellectual and affective functions, the former being located in the posterior and middle parts of the brain whereas the latter occupied its anterior part, which only represented between a quarter and a sixth of the total mass of the encephalon. This discrepancy in volume, Comte claimed, established the prominence of affective functions over intellectual ones, for it materialized the principle that intelligence was only a means to fulfil certain ends fixed beforehand.

The value of Gall and Spurzheim's theory became even more obvious with the acknowledgement of the relevance of the distinction they operated within the two kinds of faculties<sup>11</sup>. On the one hand, they distinguished affective dispositions

into penchants (located in the posterior part of the brain) and sentiments or affections (located in the middle part of the brain). Penchants, Comte explained, referred to the most fundamental needs of the individual and his family with regard to self-conservation, such as reproduction, education of the offspring, feeding, shelter, etc., whereas sentiments related to social feelings (love of approbation, benevolence, etc.). On the other hand, they identified, within intellectual faculties, reflective or “combinational” (*Ibid.*, p. 867) faculties (located in the antero-superior part of the frontal region) and perceptual ones (occupying the rest of the frontal region). These classificatory refinements, argued Comte, confirmed and explained

“the unquestionable distinction, which had been vaguely established in all times by the good sense of the vulgar, between what is called the heart, the character, and the mind, a distinction that scientific theories will from now on represent with accuracy by referring to the groups of faculties which correspond respectively to the posterior, middle, and anterior parts of the cerebral system” (*Ibid.*, p. 867).

However, Comte also pointed out some shortcomings of phrenology, which he thought were evidence of the fact that

“intellectual and moral physiology is conceived and cultivated today in too irrational and too narrow a manner, whose influence, as long as it survives, will necessarily be an insurmountable obstacle to any genuine progress of a doctrine which has not really achieved any significant step since its foundation” (*Ibid.*, p. 881).

The most evident sign of this backwardness was the “outrageous multiplication of the fundamental faculties” (*Ibid.*, p. 875), which increased from twenty-nine in Gall to thirty-five in Spurzheim. For instance, Comte recalled, an “alleged fundamental mathematical aptitude” (*Id.*) had been introduced to account for the ability of certain individuals to excel in this field. But, on that account, why not postulate a chemical or an anatomical aptitude?

“Unless a sensible philosophy calls to a halt such a habit, every phrenologist will soon create a faculty and an organ if the case seems appropriate” (*Ibid.*, p. 874).

This first shortcoming, Comte argued, was the consequence of the phrenologists’ neglect of the “association, either synergic or sympathetic, of the diverse phrenological functions” (*Ibid.*, p. 879), that is the taking into account of the diverse interactions of the various faculties which gave rise to actual mental acts. In most thought processes, he suggested, different abilities were involved, even if the result seemed unique. Comte maintained that

“In the absence of such a fundamental consideration, the number of penchants, sentiments, or aptitudes, would almost seem likely to be increased indefinitely. (...) In general, without the diverse cerebral synergies, either between the two orders [intellectual and affective] of fundamental faculties, or between the different functions of each order, it would be impossible to analyze judiciously most of actual acts” (*Id.*).

To remedy these shortcomings, Comte recommended five methodological improvements. Firstly, he advocated the renewal of anatomical investigation, which most phrenologists too readily abandoned after Gall’s pioneering work. Only a more detailed knowledge of the nervous system (taking into account the volume, weight, and circulatory activity of the different cerebral organs) could lend credence to phrenological localizations: if functions were to be ascribed to specific organs in the brain, the identification of these organs had to be made by way of observable anatomical features. Comte did not ignore the fact that the “lesser dissimilarity and the greater proximity” (*Ibid.*, p. 873) of the cerebral organs made such a task a difficult one, but he refused to exempt physiological phrenology from a requirement that had been crucial to the development of other branches of physiology, such as the study of digestion, respiration, or locomotion.

“Although it is generally agreed that the analysis of functions must undoubtedly shed much light on that of the organs, the breaking down of the organism into systems, and of systems into organs, is by its nature no less independent from physiological analysis, to which, in turn, it serves as an essential preliminary basis, as all physiologists today agree with regard to the other branches of biological studies. (...). For, granted that the philosophical aim of any biological theory is (...) to establish an exact harmony between physiological and anatomical analysis, it obviously presupposes that neither had been modeled on the other, and that each had been achieved independently beforehand” (*Id.*).

Conversely, and that was the second improvement Comte suggested, more attention should have to be paid to the analysis of functions, which should “add to the general and direct observation of man and society, a judicious physiological appraisal of the most pronounced individual cases, with a special consideration of the past” (*Ibid.*, p. 875). For instance, with regard to intellectual abilities, a thorough analysis of the achievements of great scientists would help to draw a definitive list of the most elementary dispositions necessary for abstract thinking. And by doing so, one would also stop the unnecessary multiplication of faculties.

“Whatever the extreme variety of the diverse animal natures, or even that of the different human types, may be, it is nevertheless the case that, since genuine acts almost always presuppose the cooperation of several fundamental faculties, this actual multiplicity, even if it were greater, would be sufficiently represented by a very small number of elementary functions

relative to the two kinds into which the moral and the intellectual order are subdivided" (*Id.*).

The obvious methodological benefit expected by Comte from the independent pursuit of anatomical and physiological analysis was that the former could serve as corroborating evidence for the latter (if a function was fundamental, it had to correspond to a cerebral organ) and *vice versa* (if an organ was singled out anatomically, it had to be responsible for a definite function). Furthermore, the very fact that the two analyses were conducted separately was supposed to guarantee that when they matched, it would not be because the endorsement of one hypothesis had biased the researcher with regard to the other.

Thirdly, Comte emphasized the usefulness of clinical evidence drawn from the consideration of psycho-pathological phenomena: given that, according to Broussais's principle of the continuity of normal and pathological states and the cerebral etiology of mental diseases accepted by most alienists, these disorders were caused by an excessive irritation of the brain and resulted in specific alterations of certain affective and intellectual dispositions (the various *mania*), the minute survey of these affections would therefore shed light on the most fundamental mental functions (because madness "tends to bring them out forcefully by displaying each of them in a predominant exaltation, which distinguishes it neatly from all the others" [*Ibid.*, p. 877]), and their specific seats (which became easier to localize because they were distinguished by certain anatomical features).

Fourthly, Comte called for a wider use of the comparative method in the study of mental functions. For, since man was after all an animal, it was likely that he shared with other animals a certain number of affective and intellectual functions whose origin and development would be more easily grasped if referred to the entire animal scale. If one was searching for fundamental functions, Comte held, that was certainly the best way to find them:

"Cerebral faculties, intellectual or affective, being the necessary complement of animal life as such, it would be difficult to conceive that all those which are genuinely fundamental would not be, by the same token, absolutely common, in whatever degree, to all higher animals, and maybe to the entire group of the Osteozoa" (*Ibid.*, p. 878).

Fifthly, more attention paid to the various synergies and sympathies existing between the different functions (which would stop the inflation in faculties characteristic of phrenology)<sup>12</sup>, and between the brain and other organs (which

would give a more realistic turn to phrenology, since the brain was only “a necessary mediation between the action of the external world on the animal through sensorial impressions and the final reaction of the animal by way of muscular contractions” [*Ibid.*, p. 880]) would guarantee the study of the mental functions “an enduring weight [“consistence”, in French], and a rational development, which would eventually secure its right to be heard within the scholarly world” (*Ibid.*, p. 873).

However, the fruits reaped from phrenology were not merely theoretical, for practical outcomes were also in view. To be sure, Comte recalled, many of its opponents inveighed against its alleged denial of human freedom. If mental dispositions were held to be inborn, how could one be free of choosing how to behave? If the conduct of individuals was constrained by their innate affective and intellectual endowments, how could they be praised for their virtues or blamed for their vices? What of responsibility?

Comte did not dismiss the objection but thought it depended on an erroneous understanding of natural causation. He thus suggested that one should not conflate determinism, i.e. “the subordination of phenomena to invariable laws”, with fatalism, i.e. “their necessary and irresistible realization” (*Ibid.*, p. 869). Comte claimed that the more complex a phenomenon was, the more modifiable it became, since its complexity presupposed its dependence on distinct and independent sets of conditions, the presence or the absence of each of which conditioned the production or non-production of the given phenomenon. Given that mental acts required an extremely diverse set of conditions (physical, chemical, biological, and social), their advent became “less and less irresistible, because the conditions on which they necessarily [depended] exhibited more and more varied combinations” (*Id.*).

Moreover, Comte made clear that phrenology only argued for the existence of dispositions to act, but never maintained that the acts derived mechanically from the dispositions: the interaction with the environment was a crucial element in the process leading to action. Furthermore, continued Comte, Gall and Spurzheim emphasized that

“real acts almost always depend on the joint action of several fundamental faculties” and that “exercise can greatly develop any faculty, just as inactivity tends to starve them” (*Ibid.*, p. 870).

and also maintained that

“the intellectual faculties, which are directly and naturally meant to modify the general conduct of the animal in accordance with the variable demands of its situation, may greatly alter the practical influence of all the other faculties” (*Id.*).

In short, claimed Comte, phrenology neither denied the relevance of circumstances for the understanding or explanation of one’s behaviour, nor discarded the role of reason in the shaping of one’s character, but rather integrated both considerations in a more encompassing perspective, which took into account the biological, and especially cerebral, endowment of individuals, that is their “human nature”, and thereby set the proper limits of its potential development.

“It is therefore vainly (...) that the charge of ignoring the great influence of education, and of its necessary legislative extension, has been leveled against physiology because it fixes judiciously the true general limits of their power” (*Id.*).

Since a rational education supposed both the existence of the various elementary faculties and the knowledge of the laws of their respective development and of the ways they interacted with one another, the establishment and diffusion of phrenological expertise was a crucial element in any attempt at reorganizing society.

Eventually, as Comte had noticed earlier in the Forty-Fifth Lesson, a fortunate counterpart of this focus on cerebral organization was that it permitted the definitive refutation of some faulty conceptions of human learning. For instance, Comte claimed that Gall’s innatism dealt a lethal blow to the sensationalism of the French school from Condillac to the *Idéologues*, for it demonstrated that the acquisition of knowledge depended on inborn capacities to collect and organize the data at hand, and was not the mere result of its passive reception by the mind. Furthermore, phrenology refuted Claude-Adrien Helvétius’ “absurd hypothesis”, popularized in his influential book *De l’Esprit* (1758), of the “fundamental equality of all human intelligences, in so far as they are endowed with the same external senses” (*Ibid.*, p. 862), and his “absurd exaggerations as to the unlimited power of education” (*Id.*), since it drew attention to the fact that inter-individual differences in intellectual capacities were not primarily due to the individuals’ experience but to their cerebral constitution<sup>13</sup>. Hence Comte’s conclusion:

“so it is, after all, for cerebral physiology alone to give the philosophical problem of education its rational formulation” (*Ibid.*, p. 870).

Given that phrenology had pronounced women unfit for intellectual pursuits because of their cerebral constitution, any attempt at educating them would in the end fail. From this followed a straightforward conclusion: their present situation of subjection to their fathers, husbands or brothers was the most conducive both to their own happiness and to that of society because it was the only one compatible with the order of things. It was the nature of their brain that dictated women’s fate and role in the “body politic”.

As it now clearly appears, even if he was critical of phrenology<sup>14</sup>, Comte nonetheless held that the theoretical basis on which it was grounded offered “a real knowledge of human nature (...), extremely superior to anything that has been attempted so far” (*Ibid.*, p. 869). Furthermore, he had no doubt that a more positive phrenological physiology developed along the lines he had set would be “one of the main elements by which the philosophy of the nineteenth-century [would] definitively [distinguish] itself from that of the previous centuries” (*Ibid.*, p. 881). Accordingly, one may say that the *Cours* gave an altogether favorable account of phrenology, which did not fail to underline some of its most serious shortcomings but also expressed confidence about its prospects. Moreover, by its acknowledgement that it offered an appropriate grasp of the “true fundamental faculties of human nature” (*Ibid.*, p. 877), it made explicit its relation with “social physics” or sociology: the latter “necessarily [took] its immediate roots in biological science” (*Ibid.*, p. 882). Therefore, to Mill’s call for the development of “a more profound knowledge of human nature, both in its general and in its particular applications” (Mill to Comte, September 10, 1842, in Haac [ed.], p. 102) as a necessary condition for the settlement of the sexual equality issue, Comte replied that phrenology was the most appropriate candidate for the title of “science of human nature”.

### C – Mill on Phrenology.

Whereas Comte’s estimate of phrenology is easy to analyse, Mill’s judgment on the new “physiology of the brain” is more difficult to assess since he never broached the topic directly or for its own sake. However, as Appendix V shows, it is likely that Mill was familiar with the basics of phrenology, given that the first

years of his intellectual career (the 1830s) were coeval with an intense period of phrenological agitation in England.

Accordingly, Mill could not have failed to measure the influence of phrenology as a tactical element in the discourse of many social reformers. But even if some of them shared certain political goals of the Utilitarians (notably the advent of a society cleared of the vestiges of the older social structures and led in accordance with reason, not custom or theology), the innatist component of phrenology – however mitigated by a possible improvement of one's nature by way of exercise – clashed with the environmental sensationalism of J.S. Mill and his associates. From a methodological point of view, Mill was entitled to think that the scientific status of phrenology had not been established, and that none of its specific claims had yet been vindicated. All this might explain Mill's candid avowal to Comte that he had “long regarded this field, at least in its present state, as unworthy of occupying the mind of a true thinker” (Mill to Comte, February 25, 1842; *Ibid.*, pp. 53-4). However, Mill also recognized that Comte's powerful case for phrenology in the *Cours de philosophie positive* had modified his own stance on the topic. It was not that Mill was entirely convinced by Comte's arguments, but the latter's belief in the importance of phrenology prompted him to

“develop (...) a mature opinion, as well based as possible on a subject which by necessity must exert great influence on [his] future speculations” (*Ibid.*, p. 54).

Behind Mill's sudden interest in phrenology indeed lay his awareness that Comte's plea for the subjection of women crucially depended on the soundness of phrenology. Hence the “necessity” of tackling the subject head-on in the correspondence.

As seen above, Comte had unambiguously stated in the *Cours* his views on both the achievements of phrenology and the improvements it called for. His account provided a starting-point for Mill's theorizing and conditioned his manner of dealing with the subject. Yet, Mill's line of reasoning was not constrained by the terms in which Comte chose to address the phrenological issue. Although some letters (especially at the start of the correspondence) give the impression that Mill merely intended to accommodate Comte's ideas<sup>15</sup>, the general tenor of his pronouncements indicates that he was determined to demonstrate to Comte the cogency of his views on phrenology. However, the strength of Mill's resolution can

be grasped only if, in addition to a close reading of the correspondence with Comte<sup>16</sup>, a minute analysis of the first editions of the *System of Logic* is carried out in parallel<sup>17</sup>. Similarly, Comte's rejoinders in the correspondence<sup>18</sup>, which were often elusive, must be read in the light of the phrenological developments of the *Cours*.

The best way to uncover Mill's strategy must start from the statement of what one takes to be his goal when he decided to engage the phrenological debate. As argued earlier, Mill (1) wanted to show that the actual results borrowed from phrenology were either false or unwarranted and hence unreliable as evidence for the settlement of the sexual equality issue, and (2) that, in any case, sociological inferences could not be drawn from biology alone. The first claim raises a factual objection against phrenological results and questions their evidential power on methodological grounds: it was simply not the case that phrenology supported the sexist conclusions reached by Comte, and that failure, argued Mill, resulted primarily from the inadequate heuristic and probative standard adopted by most of its practitioners. The second claim, to which I will turn in the next chapter, is concerned with the architectonic of the “moral sciences”, that is the interplay of the different disciplines studying human phenomena: even if it were the case that phrenology could become a reliable source of information, Mill claimed, on its own it could never succeed in producing genuine sociological explanations and predictions. To distinguish these claims is crucial for the understanding of Mill's attitude towards Comte, especially in the correspondence, since it enables one to explain how, at one and the same time, Mill agreed with Comte that an improved phrenology could be of use whilst remaining convinced that such an improvement would not alter the grounds on which the sexual equality issue could be settled.

## 1 - The Scientific Nature of the Phrenological Hypothesis.

As to the first claim, Mill made clear that what was at stake was not the cogency of the phrenological *hypothesis* itself, but the absence of justificatory instances for it. The problem was set explicitly in the second section of chapter IV (“Of the Laws of the Mind”), Book VI, of the *System*. Mill summarized as follows the conjecture ventured by “many eminent physiologists”, including phrenologists, as to the relations between higher mental phenomena such as thoughts, emotions, and volitions and their material substratum<sup>19</sup>:

“These contend that a thought (for example) is as much the result of nervous agency, as a sensation: that some particular state of our nervous system, in particular of that central portion of it called the brain, invariably precedes, and is presupposed by, every state of consciousness. According to this theory, one state of mind is never really produced by another: all are produced by states of body” (J.S. Mill, *SL*, VI, IV, 2, p. 850).

In line with the conception of causal explanation developed in Book III of the *System*, Mill claimed that, if it were the case that “laws of mind”, that is uniformities of succession among states of mind, turned out to be derivative from “laws of body”, that is laws of succession of bodily states, the former could be deduced from the latter because genuine causal efficacy was in fact restricted to the domain of nervous phenomena. In other words, provided one could prove that these material phenomena were the unconditional causes of mental phenomena, it would result that the “laws of body” should be considered the “ultimate” laws on which depended “laws of mind”. It would have been difficult for Mill to raise an in-principle objection to this attempt at fleshing out the inferential structure of science, for he explicitly agreed that to explain a phenomenon is to deduce it from unconditional uniformities, and that the fewer the number of uniformities the better. Accordingly, the physiological hypothesis Mill discussed, if substantiated, would certainly constitute a notable advance in terms of simplicity, systematicity, explanatory power, and perhaps predictability. In the case of mental phenomena, it offered a straightforward answer to the central question of the “investigation of nature”, namely that of knowing what “are the fewest general propositions from which all the uniformities existing in nature could be deduced” (*Ibid.*, III, XII, 6, p. 472): for “laws of mind”, “laws of body” were perfect candidates.

In case the physiological deduction obtained, what were the implications for the epistemic status of the “laws of mind”? As F. Wilson underlines, the hypothesis under scrutiny constitutes the core of what is now known as *epiphenomenalism* understood as the “doctrine that body is causally productive of mind, but that mind is not causally productive of body” (F. Wilson, *Psychological Analysis*, p. 304). On this conception, the corollary of holding mental uniformities as mere empirical generalizations amounted to depriving them of any explanatory power: the relevant way of accounting for the advent of a given mental state invoked nomological propositions bearing on nervous events but dispensed with mental regularities, because the latter were only parasitic on the former. Accordingly, concluded Mill, if epiphenomenalism were right,

“there would be no original mental laws, no laws of Mind in the sense in which I use the term, at all: and mental science would be a mere branch, though the highest and most recondite branch, of the science of physiology” (J.S. Mill, *SL*, VI, IV, 2, p. 850).

With the leveling down of “laws of mind” to the status of descriptive generalizations, the project of accounting psychologically for mental events had to be given up, for it would simply not be able to reach the only scientifically significant level of explanation, that of causes. However, it did not follow, on Mill’s interpretation of the epiphenomenalist hypothesis, that “laws of the mind” had to be eliminated or regarded as illusory: it was not the reality of uniformities of mental successions that was denied, but their explanatory power. Just as the smoke was a mere side effect of the machine that produced it, states of the mind were mere side effects of states of body. But still they were real, as real as the smoke was.

To be sure, the kind of epiphenomenalism Mill was discussing extended beyond the ranks of phrenologists. If what was at stake was the endorsement of the proposition that states of mind causally depended on states of the brain, many physiologists of the day, despite their opposition to phrenology, certainly qualified as epiphenomenalists. For what they generally objected to in phrenology was the unwarranted modular conception of brain functions and its dubious cranioscopic pronouncements. On the other hand, they enthusiastically supported the assumption of a unilateral causal relation existing between states of the brain and states of mind, so long as it was compatible with a more unitary view of the cerebral workings.

However, there is little doubt that the target of Mill, at least in the first edition of the *System*, was the phrenological movement and those it inspired. As he took pain to specify in the 1843 version, Mill singled out Comte’s interpretation of phrenology<sup>20</sup> as perfectly representative of the sort of epiphenomenalism he had just described, especially

“when he claims the scientific cognizance of moral and intellectual phenomena exclusively for physiologists” (*Id.*).

When it came to assess the soundness of the phrenological version of the epiphenomenalist hypothesis, Mill was at one with Comte’s estimate of its genuine positivity. In a footnote of the chapter “Of the Limits of the Explanation of Laws of Nature; and of Hypotheses” of Book III of the *System*, Mill argued that

“the attempt to localize, in different regions of the brain, the physical organs of our different mental faculties and propensities, was, on the part of its original author, a strictly legitimate example of a scientific hypothesis; (...) Whatever there may be of reality in the connexion between the scale of mental endowments and the various degrees of complication in the cerebral system, the nature of that connexion was in no other way so likely to be brought to light as by framing, in the first instance, an hypothesis similar to that of Gall” (*Ibid.*, III, XIV, 6, p. 498).

What conferred on phrenology the status of a “strictly legitimate example of a scientific hypothesis” were its testability and its compatibility with previous discoveries concerning the physiological origins of certain psychological phenomena. As for testability, Mill agreed with Comte’s opinion that Gall’s theory of cerebral localization could be, at least in theory, corroborated or refuted by empirical findings about the correlation, or absence of correlation, between psychological functions and specific brain parts. In a comparison reminiscent of the *Cours*<sup>21</sup>, Mill’s footnote made clear that the phrenological hypothesis was as justified as Broussais’ conjecture about the localization of the source of diseases in the mucous membrane of the alimentary canal. To be sure, Broussais’ conjecture proved erroneous, but it did so because it was amenable to empirical refutation; it was simply not the case that all diseases originated in the digestive system. Furthermore, its failure prompted the framing of other hypotheses more conformable to the phenomena: for the diseases not accounted for by Broussais’ conjecture, where were they localized in the body? Eventually, Gall’s hypothesis displayed a formal structure that likened it to a very common type of conjectures in the physical sciences. For, according to Mill’s classification of hypotheses, when Gall ascribed precise and definite portions of the brain to the various intellectual and affective functions, he was just doing what Newton’s predecessors did when they proposed various hypotheses “respecting to the law of the planetary central force” (*Ibid.*, III, XIV, 4, p. 490): he singled out the likely *vera causa* of psychological phenomena (the brain), and he conjectured the laws according to which mental and nervous phenomena were related (for instance, by postulating that the development of a penchant, quality, or faculty was proportional to the volume of the organ in which it was localized). On Mill’s theory of hypotheses, it was therefore the case that the phrenological hypothesis fulfilled “a condition of a most genuinely scientific hypothesis”, that of being “proved or disproved by that comparison with observed facts which is termed Verification” (*Ibid.*, p. 494). If mental phenomena really depended on nervous phenomena, what remained to be

ascertained was their “precise mode of dependence”, that is “the law of the variation of the effect according to the variations in the quantity or in the relations of the cause” (*Id.*). From a methodological point of view, the different theses (Innateness, Localization, Modularity, Proportionality, and Cranioscopy) advanced by phrenologists were in principle as many “modes of dependence” that could be confronted to the facts.

The second feature of the phrenological hypothesis that may have convinced Mill of its scientific status was its compatibility with previous discoveries concerning the physiological origins of certain psychological phenomena. As Mill recalled, recent developments in the anatomy and physiology of the nervous system had established the causal dependence of sensations on specific bodily mechanisms:

“With regard to those states of mind which are called sensations, all are agreed that these have for their immediate antecedents, states of body. Every sensation has for its proximate cause some affection of the portion of our frame called the nervous system; whether this affection originate in the action of some external object, or in some pathological condition of the nervous organization itself. The laws of this portion of our nature – the varieties of our sensations and the physical conditions on which they proximately depend – manifestly fall under the province of Physiology” (*Ibid.*, VI, IV, 2, p. 850).

In that instance, Mill was just taking stock of the latest findings of physiology. To put it briefly, the works of P. Flourens, F. Magendie, and J. Müller had been instrumental in demonstrating the sensory-motor function of the spinal roots and of some higher structures of the nervous system<sup>22</sup>. Accordingly, sensations, that is “states of mind” (*Ibid.*, VI, IV, 1, p. 848), could be said to have been explained physiologically, that is deduced from “laws of the body”. But, as the case of sensations illustrated, if it had been possible to deduce certain “laws of mind” from certain “laws of body”, why would one want to stop there? Why not extend epiphenomenalism to other mental phenomena? Everything considered, the phrenological hypothesis, which related intellectual and affective functions to the brain, was certainly the natural step to take. However, as Mill rightly underlined, there was no consensus as to the legitimacy of such a move, especially along the lines set by phrenology.

“Whether any other portion of our mental states are similarly dependent on physical conditions, is one of those scientific questions respecting human nature which are still in abeyance. It is yet undecided whether our thoughts, emotions, and volitions are generated through the intervention of material

mechanism; whether we have organs of thought and of emotion, in the same sense in which we have organs of sensation" (*Ibid.*, VI, IV, 2, p. 850).

As the reference to "organs of thought and emotion" suggested, what Mill was concerned with was not a dualistic objection to the dependence of mental states on brain states, but rather the cogency of the phrenological picture of the brain. And it was indeed the case that many physiologists stopped short of extending the localisatory approach to higher psychological functions. Just to take the three pioneers of sensory physiology: Flourens, whilst ascribing sensation and motion to the lower centres of the nervous system, claimed that the cortex was a unitary organ for a unitary mind; Magendie reverted to introspective psychology when the physiology of the brain was concerned; and Müller discarded Gall's attempts at brain localizations by distinguishing the organs of mind and motor functions. However, for all that, the determination of the functions of the brain remained an empirical question, and the phrenological hypothesis, if properly worked out, certainly was worth developing.

This conclusion, Mill seemed to have shared. As he told Comte several times, and as the previous analysis of the *System* bears out, he admitted the scientific and progressive potential of the phrenological hypothesis: he even recognized that he was

"just about convinced there is something true in it [Gall's theory] and that our propensities and elemental capacities, whatever they be, each depend on a particular part of the brain" (Mill to Comte, June 9, 1842, in Haac [ed.], p. 74),

and said he believed that Gall's "theories" had "irrevocably opened the way to truly positive research, and of the first importance" (Mill to Comte, July 11, 1842; *Ibid.*, p. 83). This conversion, which turned Mill's reluctance regarding the quack science of "physiological phrenology" into the belief that it could be a subject worthy of "occupying the mind of a true thinker" (Mill to Comte, February 25, 1842; *Ibid.*, p. 53-4), Mill credited to his discovery that Comte believed "in phrenology, at least in its basic principles" (*Id.*, p. 54). As we have seen, it was indeed the case the *Cours* and the *System* agreed on the scientific nature of the phrenological hypothesis as testable and compatible with previous psycho-physiological findings. Accordingly, one should not be surprised by Mill's proximity with Comte on that account.

## 2 – Phrenology, An Unsubstantiated Hypothesis.

Although Mill agreed with Comte on the scientific status of the phrenological hypothesis, he also insisted, unlike Comte, on the lack of empirical evidence adduced in its support. That the hypothesis was testable was a necessary condition for taking it seriously, suggested Mill, but it had to be actually verified so as to become a proper piece of knowledge. As long as this condition was not fulfilled, neither phrenology nor the various claims it licensed (such as those concerning the alleged inferiority of women) could claim to be true.

Mill's conviction that such a requirement had not yet been met was expressed in very different terms in the correspondence with Comte and in the *System*. For, whereas in the former, although he admitted being “faced with major difficulties”, he nonetheless submitted his “difficulties only as questions, and not as arguments” (Mill to Comte, June 9, 1842; *Ibid.*, pp. 75-7) against phrenology, in the latter Mill adopted a more clear-cut position as to the epiphenomenalist hypothesis, which *a fortiori* included its phrenological version. It was far from certain, claimed Mill, “that every mental state has a nervous state for its immediate antecedent and proximate cause” (J.S. Mill, *SL*, VI, IV, 2, p. 851). Such a change in tone might have been prompted by Comte's reluctance to take into account Mill's objections and by his refusal to draw from them the only conclusion legitimate in Mill's eyes: phrenology had not been empirically vindicated.

The letter to Comte dated June 9, 1842, summarized Mill's strictures on the evidence adduced in support of the phrenological hypothesis. The first objection Mill raised against phrenology was that of the inaccuracy of its cerebral localizations. Even if he did it in a somewhat idiosyncratic manner, Mill merely reiterated the most common line of criticism used by anti-phrenologists: it was simply not the case that cranioscopic analysis fitted the physiological analysis.

“First you will admit, all efforts at particular localization are premature; indeed, there is ample proof to show that those so far proposed are inaccurate. I shall cite myself as an example. The only thing I know for sure about the development of my cranium is that the so-called organ of constructivity is very pronounced in my case. A phrenologist exclaimed when he saw me for the first time: ‘What do you do with your constructiveness?’ But actually I am almost completely deficient in this faculty. I lack mechanical aptitude, and my incapacity in all operations that require manual dexterity is really prodigious” (Mill to Comte, June 9, 1842; in Haac [ed.], p. 75).

How did Comte reply? Following the line he had set in the *Cours*, he acknowledged that most of Gall's localisatory attempts had been inconclusive, but nonetheless argued that

"the need he felt to localize [the brain functions] – I keep thinking that without this he would have not stirred up significant philosophical reactions – has been in his case, above all a fertile source of views" (Comte to Mill, Paris 19, 1842; *Ibid.*, p. 80)<sup>23</sup>.

In short, Comte claimed that what mattered was the progressive impetus Gall's hypothesis gave to the study of the intellectual, moral, and affective functions by relating it, contrary to the prevalent dualistic approach, to the facts of the human biological organization. But that response was missing Mill's point, for what was challenged was not the progressive or even the scientific character of phrenology, but its claim to be empirically supported. Even if it conformed to all methodological standards, if it was not vindicated by the facts, phrenology had to be discarded in favour of other hypotheses which would account with more success for the phenomena under scrutiny. Apparently, neither the necessity of amending the evidential shortcomings of the phrenological hypothesis nor the potential benefits such a process could bring to the study of man appeared to Comte. In that instance, however, it seems that Mill's position was the sensible one.

Secondly, Mill questioned the hasty correlations established between the outward features of a given individual and her alleged intellectual, moral, or affective capacities. For instance, the well-worn association of a large forehead and superior mental abilities was certainly nothing more than a coincidence:

"I have often seen remarkable intelligence in a small head or in a forehead receding backwards, while we commonly find enormous heads and protruding foreheads with mediocre intelligence" (Mill to Comte, June 9, 1842; *Ibid.*, p. 76).

This remark produced no reply from Comte, probably because the latter also regarded cranioscopic analysis as a somewhat dubious tool for assaying the materiality of brain functions. Accordingly, one may assume that Comte agreed with Mill as to the unreliability of the correlations established by such a method. Furthermore, what is interesting in that objection, as is also the case for the previous one, is that it belonged to the stock of traditional down-to-earth *prima facie* refutations of phrenological claims. The very fact that they were so easy to discard

was undoubtedly instrumental in framing Mill's low estimate of their scientific worth. Comte's refusal to take it into account might also have convinced Mill that his addressee would not surrender to purely empirical considerations.

The third point raised by Mill concerned the tendency of phrenologists to multiply "organs" without necessity. For instance, Mill argued that when Comte soberly limited himself to a tripartite division between "animal[ affective], moral, and intellectual faculties" (*Ibid.*, p. 75)<sup>24</sup>, nothing in Gall's theory would prevent others – as it was indeed the case – from assuming the existence of an indefinite number of organs. For, if the phrenological method licensed the postulation of an organ as the only way to explain the display of any marked character trait, the likely outcome of such a process would be an "organological" inflation.

"judged by Gall, it seems to me that there could be just as many proofs for a great number of specialized organs than for [one] general result" (*Id.*).

Of course, one might have argued against Mill that the postulation of organs was not in itself objectionable, as long as anatomical confirmation was given. But, as seen previously, neither the phrenologists nor Comte lived by that kind of empirical standards. Yet, Comte made clear in his reply to Mill, as he already did in the *Cours*<sup>25</sup>, that he took a dim view of the actual trend in phrenology. But if Comte did not see this endless multiplication of organs as a desirable move, it was primarily because it clashed with his pragmatic quest for an "economic" theory of human nature:

"The number of organs, above all, has always seemed much too large to me. Even so, without having done special research in determining this, I do not believe, just looking at it, that one can admit less than ten distinct forces (intellectual or emotional) without falling into useless subtleties of metaphysical distinctions, nor more than fifteen without infringing on the cohesive unity of human nature" (Comte to Mill, June 19, 1842; *Ibid.*, p. 80)<sup>26</sup>.

However, and even if Comte recognized that Gall's "initial analysis of basic forces, mental and moral, was not carried out in sufficient depth and was not accomplished as exactly as it should [have been]" (*Id.*), he did not dwell on how one was to draw a better list.

This absence of a clear method for singling out the most elementary faculties led to Mill's third remark. For the "organological" inflation was certainly due to the lack of agreement among phrenologists as to what constituted the proper way of identifying the basic functions characteristic of the human mind. A

good case in point, was that of our basic instincts. Mill had no doubt that these innate propensities would, sooner or later, be connected “either to the marrow of the spinal column or to a precise ganglia” (Mill to Comte, June 9, 1842; *Ibid.*, p. 76).

In fact, in the *System*, he even admitted that

“the various instincts of animals, and the portion of human nature which corresponds to those instincts (...) may probably be found to have as positive, and even perhaps as direct and immediate a connexion with physical conditions of the brain and nerves, as any of our mere sensations have” (J.S. Mill, *SL*, VI, IV, 4, p. 859)

But, in his letter to Comte, he also added that

“whether there are few or rather a large number of such primitive instincts, still remains a great problem in my eyes” (Mill to Comte, June 9, 1842; *Ibid.*, p. 76).

There was no consensus, underlined Mill, as to what was counted as a primitive instinct. For instance, Gall and Spurzheim considered the instinct to possess a basic one. But was not one entitled to think that what was responsible for it was, instead of any special faculty, just the result of associating one’s desires with our knowledge of the means to fulfil them. After all, Comte himself used a similar argument when he rejected “the sense of justice from among the special faculties” (*Ibid.*, p. 77), since he held it to be derived “from a kind of sympathy associated with different intellectual faculties” (*Id.*). What lay at the root of the problem, according to Mill, was the absence of a common method to identify the most elementary faculties out of which the other mental dispositions were made. In that respect, Comte could well claim that the principles of the “plurality and independence of organs and forces” (Comte to Mill, March 4, 1842; *Ibid.*, p. 58) had been established, such a pronouncement nevertheless remained hollow, since phrenology only gained true empirical content when the number, relation, and localization of the different functions had been established. And that, Mill suggested, had not yet been achieved.

Eventually, the *System of Logic* pointed out a further shortcoming of the phrenological approach. For it was not only that what was to be localized was not clearly defined, but also that the nature of the substratum with which it was correlated remained mysterious. To put things briefly, the phrenological hypothesis assumed that different faculties gave rise to different kinds of mental states (affective, moral, intellectual), which could be conjectured to be distinguished both by their localization in the brain and the intrinsic composition of the nervous states

on which they depended. However, as Mill rightly maintained, the grounds for this latter distinction were provided neither by the anatomy nor the physiology of the nervous system:

“every one must admit that we are wholly ignorant of the characteristics of these nervous states; we know not, nor can hope to know, in what respect one of them differs from another” (J.S. Mill, *SL*, VI, IV, 2, p. 851).

As it now clearly appears, Mill indeed gathered, both in his correspondence and the first edition of the *System*, a wide array of objections or strictures against the phrenological hypothesis. To summarize, Mill argued that most of the claims of phrenology were not empirically vindicated, and that this was due to the unreliability of the methods used to determine what were the most elementary faculties, the irrelevance of the majority of the correlations established between mental capacities and their alleged material substratum, and the absence of precise knowledge about nervous states themselves. In brief, the phrenological hypothesis was not borne out by the facts. If this was the case, as Mill claimed, the first corollary of this failure was that any claim to have reduced “laws of the mind” to “laws of the body” was unfounded. Hence Mill’s conclusion in the *System*:

“The successions, therefore, which obtain among mental phenomena, do not admit of being deduced from the physiological laws of our nervous organization: and all real knowledge of them must continue, for a long time at least, if not always, to be sought in the direct study, by observation and experiment, of the mental successions themselves” (*Id.*).

The second corollary, which was crucial to Mill’s refutation of Comte’s plea for the subjection of women, was that, as things stood, no support could be drawn from phrenology as evidence for the settlement of the sexual equality issue. However Comte never accepted such a conclusion. In that respect, this refusal illustrates the shift in his attitude between the *Cours* and the correspondence: for, whereas in the former Comte emphasized that phrenology was not “a mature science, but a science still entirely in the making” (A. Comte, *PP*, p. 851), in the latter he remained deaf to Mill’s strictures and reverted to a dogmatic defence of the new “science of human nature”. This might also partly explain Mill’s “hardening” in the correspondence, as testified by this terse pronouncement:

“you already know that the general principles which in your view, are the only ones observed so far by the science of phrenology, do not appear proved in his book [Gall’s *Recherches sur les fonctions du cerveau*] in any way. (...) everything

I have read or thought so far leads me to believe that nothing has been truly established, that everything is still vague and uncertain in this type of research" (Mill to Comte, October 30, 1843; in Haac [ed.], p. 198-9).

However, as John Skorupski underlines, Mill's argument could not be taken as a definitive demonstration of the irrelevance of phrenology for the study of mental phenomena, but only as a defense of a "weak or methodological autonomy of psychology" (J. Skorupski, *John Stuart Mill*, p. 261). For Mill did not deny that, in principle, it might have been possible to reduce mental successions to nervous successions:

"the laws of mind may be derivative laws resulting from laws of animal life, and (...) their truth therefore may ultimately depend on physical conditions" (*Id.*).

This, in turn, sheds light of the reasons why Mill resisted the naturalist drive towards the reduction of psychological to physiological laws. It was not, as his own conception of causal explanation illustrated, that Mill refused the theoretical possibility of reducing psychology to physiology, but rather that the physiology available was not robust and reliable enough to allow this kind of reduction. *Quid juris*, Mill accepted the relevance of reductionist naturalism. *Quid facti*, he thought the time was not yet ripe for achieving it. But if so, and to that question I turn in the next chapter, how could one achieve the proper understanding of mental phenomena on which the settlement of the sexual issue hinged?

---

<sup>1</sup> See II, n. 15.

<sup>2</sup> Certainly J. G. Spurzheim, *Essai philosophique sur la nature morale et intellectuelle de l'homme*. See II, n. 15.

<sup>3</sup> Probably the French version of Spurzheim's 1821 *View of the Elementary Principles of Education* (see II, n. 23); the *Essai sur les principes élémentaires de l'éducation*. Paris: Treutell & Würtz, 1822.

<sup>4</sup> See II, n. 19.

<sup>5</sup> For the exact reference, see II, n. 14.

<sup>6</sup> For the exact reference, see II, n. 15. Comte first mentioned the *Recherches* in an earlier letter to Mill, dated March 4, 1842 (in Haac [ed.], p. 59).

<sup>7</sup> See Jan Goldstein, "Bringing the Psyche into Scientific Focus", in T.M. Porter & D. Ross, *The Cambridge History of Science. Vol. 7: The Modern Moral Sciences*. Cambridge: Cambridge University Press, 2003, pp. 131-53. Goldstein defines the "operationalization" of the theories of the moral sciences as their "application to concrete social practices, their conversion into social technologies, their invocation to validate practices of otherwise dubious origin" (p. 132).

<sup>8</sup> This lesson was written between December 24 and December 31, 1827, and was published in the third volume of the *Cours* in 1838. Appendix IV details the likely sources of Comte's phrenological knowledge.

<sup>9</sup> His conception of phrenological physiology merely amounted to an adaptation of the methodological principle Comte took to be governing biological investigation as defined in the Fortieth Lesson of the *Cours*: "given the organ or the organic modification, find the function or the act, and vice-versa" (A. Comte, *PP*, p. 684).

<sup>10</sup> For the instinct of propagation, see F. J. Gall, *Recherches sur les fonctions du cerveau*, III, pp. 85-164. On the localization of the instinct of propagation, see M. Shortland, "Courting the Cerebellum: Early Organological and Phrenological Views of Sexuality", *British Journal of the History of Science* 1987, 20, pp. 173-99; and E. Clarke, E. & L. S. Jacyna, L.S., *Nineteenth-Century Origins of Neuroscientific Concepts*. Berkeley: University of California Press, 1987.

<sup>11</sup> Comte attributed this distinction to Gall and Spurzheim, but, as A. Sinaceur remarks (A. Comte, *PP*, p. 868, n. 54), it was in fact Spurzheim's own, as exposed in his 1818 *Observations sur la phrénologie*. Gall criticized it in his *Anatomie et physiologie*, III, pp. XXV-XXVIII.

<sup>12</sup> Comte estimated that twelve to fifteen elementary functions would do (see A. Comte, *PP*, p. 875).

<sup>13</sup> C.-A. Helvétius, *De l'Esprit*. Paris: Durand, 1758. Helvétius' environmental sensationalism, when allied with his dismissal of sexual physiological organisation as a relevant factor to explain intellectual differences, logically implied that men and women were, at least potentially, equal at birth, and that inequalities were due to differences in education and environment. On Helvétius' theoretical endorsement of women's equality and his inability to implement it in his practical and political writings, see E.J. Gardner, "The Philosophes and Women: Sensationalism and Sentiment", in E. Jacobs, ed., *Woman and Society in Eighteenth-Century France : Essays in Honour of John Stephenson Spink*. London: Athlone Press, 1979, pp. 19-27 (esp. pp. 19-23).

<sup>14</sup> His refusal to propose a phrenological head might have been due to his scepticism about Cranioscopy. As for the Proportionality Thesis (the development of a penchant, quality, or faculty is proportional to the volume of the organ in which it is localized), it is likely that Comte accepted it.

<sup>15</sup> See in particular the letter to Comte dated July 11, 1842: "Now to speak of Gall: I am afraid I have given you an exaggerated idea of my present opposition to his theories. I am far, indeed, from finding them unworthy of serious consideration" (in Haac [ed.], p. 83).

<sup>16</sup> Besides that quoted in the previous note, relevant material is to be found in the following letters from Mill to Comte: December 18, 1841; February 25, 1842; March 22, 1842; May 6, 1842; June 9, 1842; and December 8, 1843.

<sup>17</sup> Especially of the manuscript version, and the first two editions (1843 and 1846) of the *System*. The details of the drafting of the *System* suggest that the discussion on phrenology in the correspondence prompted Mill to operate changes in the content and organization of the Sixth Book on the "Logic of the Moral Sciences". For instance, the Fourth Chapter on "the Laws of Mind", which contains some of Mill's developments on phrenology, was written sometime between July 1842 and early 1843 (see J.S. Mill, *SL*, pp. lxxiv-lxxv), whilst Comte and Mill were broaching the subject in their letters. Such an addition was certainly part and parcel of the "complete revision" (January 28, 1843; in Haac [ed.], p. 130) of his book Mill announced to Comte.

<sup>18</sup> The relevant letters from Comte are those dated January 17, 1842; March 4, 1842; May 29, 1842; June 19, 1842; July 22, 1842; and November 14, 1843.

<sup>19</sup> General accounts of Mill's conception of the relations between bodily states and mental states can be found in J. Skorupski, *John Stuart Mill*, pp. 259-264; F. Wilson, *Psychological Analysis and the Philosophy of John Stuart Mill*. Toronto: University of Toronto Press, 1990, pp. 294-311.

<sup>20</sup> Mill referred to Comte's *Cours* in the footnote appended to the passage quoted, but erroneously mentioned the Forty-Third Lesson instead of the Forty-Fifth.

<sup>21</sup> See A. Comte, *PP*, p. 871.

<sup>22</sup> On this, see R.M. Young, *Mind, Brain, and Adaptation*, Chap. 2.

<sup>23</sup> In fact, Comte was repeating what he had said in previous letters to Mill: "In spite of all the radical faults in trying to localize [the functions of the brain], it certainly represents a true victory of the positive spirit in intellectual and moral studies concerning the individual" (Comte to Mill, March 4, 1842; in Haac [ed.], p. 58); "Once we forget all the rash and even evidently mistaken attempts to localize the functions of the brain, there remain for our use truly general conclusions which have been fused for so long with my own philosophy that I regard Gall as one of my most essential precursors" (Comte to Mill, May 29, 1842; *Ibid.*, p. 73).

<sup>24</sup> Comte mentioned that distinction ("a first general division of the brain into three areas which correspond to three types of manifestations"; Comte to Mill, March 4, 1842; in Haac [ed.], p. 58) in an earlier letter, which roughly echoed his presentation of penchants, sentiments, and intellectual faculties in the *Cours*.

<sup>25</sup> See IIB.

<sup>26</sup> Mill concurred with Comte's numerical estimate: "basing myself on arguments derived solely from common observation, I find it probable, as you do yourself, that there are no less than ten fundamental forces, either intellectual or affective, but I am unable to list them in detail or identify the proper organ for each" (Mill to Comte, July 11, 1842; in Haac [ed.], p. 84).

#### IV – The Explanation of Moral Phenomena: Comte and Mill on the Architectonics of the Moral Sciences.

Having shown that the actual results borrowed from phrenology were either false or unwarranted and hence unreliable as evidence for the settlement of the sexual equality issue, Mill's next task amounted to demonstrating that, even if a proper knowledge of how to derive "laws of mind" from "laws of body" were at hand, conclusions about "moral" phenomena, which included mental capacities and character traits, could not be drawn from biology alone.

Whereas in the correspondence the first point had mostly been carried out regardless of its implications for the sexual equality issue, Mill chose to raise the second with explicit reference to it. As he told Comte in a somewhat convoluted manner:

"what I would have to say in support of my principal heresy would be entirely drawn from principles of biology, which doubtless are very imperfect. [This] not only because I lack sufficient knowledge of biology, but perhaps also due to today's insufficiency of biological theory itself as it applies to sociological speculation" (Mill to Comte, July 13, 1843; in Haac [ed.], p. 174).

However, the purpose of Mill's argument went beyond the consideration of the sexual equality issue, for what was at stake in the discussion with Comte was the entire architectonic of the "moral sciences", that is the interplay of the different disciplines which attempted to explain human phenomena. In fact, Comte's plea for the subjection of women, Mill argued, resulted from his faulty conception of the "logic" of the moral sciences.

This chapter starts by contrasting the conception of the explanation of "moral" phenomena Mill endorsed with other approaches he found defective or partial (IVA). This survey paves the way for an analysis of the correspondence between Mill and Comte, which reveals that, at least at a superficial level, both thinkers acknowledged that mental differences, which were at the heart of the sexual equality issue, resulted from a composition of causes (IVB). However, when it came to fleshing out the proper way of explaining those phenomena, the agreement broke down. On the one hand, Mill and Comte were opposed as to the role played by psychological laws in these explanations (IVC). On the other hand, they favoured a different factor as the dominating influence in the production of "moral" phenomena: whereas Comte gave precedence to biology, Mill preferred an environmental account (IVD).

## A – The Explanation of “Moral” Phenomena.

As seen previously<sup>1</sup>, Comte held that social statics demonstrated that the patriarchal model was an essential feature of the social order. The hierarchic structure on which the model rested was said to derive from the respective capacities of its members, and it was maintained that there existed a sex-based distinction, supported by Gall’s phrenology, according to which males were endowed with greater intellectual and moral capacities than women. Consequently, the acknowledgment of brain-based differences in mental capacities legitimated a piece of Comtian social statics, namely the patriarchal model.

Now, what Mill objected to in Comte’s argument was not only the conclusion it reached (the necessary subjection of women) and the premises from which it was drawn (phrenology’s dubious claims), but also the way the derivation obtained. As he diagnosed in the second edition of the *System* (1846), “to construct the theory of the mind solely on such data as physiology at present affords, seems to me as great an error in principle, and even more serious one in practice” (J. S. Mill, *SL*, VI, IV, 2, p. 851). Comte’s almost exclusive reliance on phrenology to determine the intellectual capacities of individuals undermined his social theory, because it ignored many other factors relevant to the explanation of human phenomena. In particular, it completely misconstrued the nature, origin, and development of mental abilities or character traits, the knowledge of which was crucial to Comte’s reorganization of society. As Mill put it, such a failure was the sign that “the intellectual basis of static sociology [had] not yet been sufficiently prepared” (Mill to Comte, October 30, 1843; in Haac [ed.], p. 197). Granting Comte that social dynamics had been established on safe grounds, mainly through the elaboration of the law of the three stages, Mill nevertheless contended that it was not so for social statics and that

“transforming [it] to a truly positive state consequently requires, if we compare it to social dynamics, a far greater perfection in the individual science of man” (*Ibid.*, p. 197-8).

On the contrary, Comte maintained that it was “presently possible to demonstrate the basic principles of static sociology” (Comte to Mill, November 14, 1843; *Ibid.*, p. 206), and thought he had done so with respect to the sexual equality issue. Such was the root of what Comte regarded as their “only profound disagreement in sociology” (Comte to Mill, October 5, 1843; *Ibid.*, p. 179) and what Mill held to be an “important topic of biology and sociology” (Mill to Comte, August 30, 1843; *Ibid.*, p. 185).

In that instance, the point of contention between Comte and Mill was that of how one was to explain a specific kind of “moral” phenomena, namely mental capacities. As seen above<sup>2</sup>, Mill’s general conception of explanation was of a deductive process through which a fact is derived from the law(s) of causation responsible for its production. Similarly, one can explain a law by showing that it can be deduced from one or other laws as one of their particular instances. In short, explanation either of a particular instance or of a uniformity was primarily a matter of nomological subsumption<sup>3</sup>. Although he did not mention explicitly the possibility of “explaining a law”, Comte also endorsed this proto-version of the covering-law model. He even made it a distinctive feature of the “positive” turn of mind

“to consider all phenomena as subjected to invariable *laws* of natures, whose minute discovery and reduction to the fewest number possible are the aims of all our efforts”  
(A. Comte, *PP*, p. 25-6).

Accordingly, for both a “positive” explanation of a phenomenon amounts to the detailed analysis of the circumstances of its occurrence and the statement of the regularities that unite them. However, this convergence did not extend beyond a somewhat vague agreement on the general nature of scientific explanation. As soon as the specifics of the explanation of a given phenomenon (that of mental capacities) were touched upon, the gap between Comte’s and Mill’s positions became visible.

In his letter to Comte dated June 9, 1842, Mill introduced the different causes he thought relevant to the explanation of human intellectual faculties, besides that invoked by Gall’s phrenology:

“one must, as you have yourself observed, pay attention not only to the extent of activity of an organ but to the total amount of education the individual has received, considered in the broadest definition of the term, and to which Gall has certainly not accorded sufficient importance. Helvétius’ exaggerations had at least the advantage of giving a strong push forward to the difficult field of education, a theory so neglected today that most thinkers do not even know how far general conditions together with the degree of general nervous sensitivity can, according to the laws of physiology and of the mind, not only modify [man’s] character, but sometimes even determine its type. Differences in individual or national character, which can be sufficiently well explained by circumstances with which we are most familiar, are commonly resolved by the simple expedient of an unknown difference in physical organization, or even, among metaphysicians, by basic differences in psychic constitution” (Mill to Comte, June 9, 1842; in Haac [ed.], p. 76; slightly revised translation).

For clarity’s sake, Mill’s argument may be rephrased as follows. In order to explain the character of an individual (and especially her intellectual abilities) or its modifications, one must appeal to at least three different kinds of laws that interact so as to give rise to the phenomenon under scrutiny. Firstly, laws governing what Mill called “general conditions” or “circumstances”, that is laws about facts present in one’s environment

and which may constitute inputs for the activity of one's mind. These include the purely perceptual data of one's experience as well as the culturally determined elements one is exposed to in social relations: hence, Mill's insistence on education. Secondly, "laws of physiology", which specify both the capacity to be affected by sensory inputs (the "nervous sensitivity" of the individual) and the material substratum required to carry out all mental operations. Thirdly, and in accordance with Mill's demonstration of the autonomy of psychology *vis-à-vis* physiology, "laws of mind", that is the uniformities of succession according to which one mental state succeeds another, is caused by, or follows another". These were, Mill claimed, the laws through which one could hope to explain a person's character and mental capacities.

Mill made clear that the neglect of any of those three sets of causes would lead to a distorted account of the nature, origin, and development of mental abilities or character traits. An exclusive emphasis on the formative circumstances of character, for instance, would "dissolve" the unity of the individual by postulating an indefinite malleability of human nature, which was in reality partly constrained by physiological data and psychological patterns. Mill's reference to "Helvétius' exaggerations" (*Jd.*) as an illustration of this faulty conception was certainly intended as an accommodating move towards Comte, for whom he represented the consummate embodiment of sensationalism<sup>4</sup>. But, as Mill himself underlined in accordance with his Utilitarian commitments, Helvétius' contribution had been instrumental in orienting research in the right direction concerning learning processes<sup>5</sup>. In fact, Mill judged that the social reformer and industrialist Robert Owen, who endorsed an extreme version of environmentalism according to which one's character was the necessary result of social conditioning, made a much more credible culprit than Helvétius, for the former gave credence to "fatalism" (the belief that one was necessitated to feel and act in a certain way by the circumstances), and rejected the belief in human autonomy and responsibility by depriving one's desire to mould one's character or to improve oneself of its efficacy.

As Mill put it,

"a necessitarian, believing that our actions follow from our characters, and that our characters follow from our organization, our education, and our circumstances, is apt to be, with more or less consciousness on his part, a fatalist as to his own actions, and to believe that his nature is such, or that his education and circumstances have so moulded his character, that nothing can now prevent him from feeling and acting in a particular way, or at least that no effort on his own can hinder it" (J. S. Mill, *SL*, VI, II, 3, p. 840).

Besides being morally repulsive, Mill held that such a view unmistakably revealed an inadequate understanding of the different factors at work in the shaping of one's

personality and the control one could have on such a process. For a character was in fact the result of the interplay of “circumstances” with one’s “particular organization”, and one’s “own desire to mould it” (*Ibid.*, p. 840). At least, when the desire to change was there and the circumstances could be altered, as they often were, the shaping of one’s personality was possible.

Another way to misrepresent the interaction of these factors was to put all the explanatory weight on “organization”, that is on the “laws of physiology” specifying both the “nervous sensitivity” of one’s individual and the material substratum required to carry out all mental operations. Indeed, one could either ascribe mental differences to peculiarities of the bodily frame at large (as was common practice in the traditional medicine of temperaments, where the physical and mental constitution of an individual was held to be determined by the relative proportion of the four cardinal humours of the body), or, as phrenologists did, only to the proximate cause of mental phenomena, i.e. the brain.

When it came to single out a representative figure of this latter excessive emphasis, Mill was in no quandary: in the 1846 version of the *System*, he stated that

“no writer, either of early or of recent date, is chargeable in a higher degree with this aberration from the true scientific spirit, than M. Comte” (*Ibid.*, VI, IV, 4, p. 859).

Now, Mill did not deny that differences in organic constitution might be connected to differences in mental capacities. Accordingly, he explicitly argued that “organization” was a key factor to take into account:

“that differences of bodily structures also co-operate, is the assertion not only of phrenologists, but, to a greater or less extent, of all physiologists who lay any stress upon the magnitude of the hemispheres of the brain, indicated by the facial angle, as a measure of natural intelligence, or upon temperament as a source of moral and emotional peculiarities” (*Ibid.*, p. 856-7)<sup>6</sup>.

Similarly, Mill added, data drawn from comparative anatomy were to be counted in:

“it is equally clear that when physiologists, taking into account the whole animal creation, attempt, by a judicious application of the Method of Concomitant Variations, grounded chiefly on extreme cases, to establish a connexion between the strength of different mental propensities or capacities and the proportional or absolute magnitudes of different regions of the brain; the evidences which are or may be produced in support of this pretension, ought to be taken into serious consideration by psychologists” (*Ibid.*, p. 858).

However, for all his in-principle willingness to accept “laws of physiology”, Mill was in fact quite guarded as to the extent of the reliance one could have on them for the explanation of “moral” phenomena.

"What portion of these assertions the physiological school of psychologists, whether phrenologists or otherwise, have either succeeded in establishing, or shown ground for supposing it possible to establish hereafter, I would not undertake to say" (*Ibid.*, p. 857).

As his attempt to convince Comte reveals, Mill held that almost none of the claims of the phrenologists had been empirically vindicated and that the physiology of higher mental functions remained enigmatic. Consequently, he held that neither at present constituted a basis reliable enough for drawing any inference whatsoever, besides the almost vacuous one that mental phenomena depended on the nervous system for their production.

The last questionable manner of accounting for "moral" phenomena listed by Mill resulted from an exclusive emphasis on "laws of mind". That was the charge Mill levelled against "metaphysicians", who resorted to "basic differences in psychic constitution" in order to explain differences in mental capacities. In that instance, Mill's actual target was not primarily, despite his referring to a "German school of metaphysical speculation" (*Ibid.*, p. 859), Kant, Fichte, Schelling, or Hegel, but rather British intuitionists, whose most vocal proponent was Mill's favourite foe William Whewell<sup>7</sup>. To summarize roughly, the intuitionist maintains that the human mind is endowed with a certain number of inborn capacities of reflection and judgment (intellectual and moral), which are the basis of one's cognitive and ethical abilities and which enable one to discover certain truths by an introspective rational process independent of observation and experience. For instance, from the fact that we have moral feelings and that we make moral judgments, and that those are radically distinct from any other kind of feelings or judgments, the intuitionist concludes that

"the distinction between right and wrong is an ultimate and inexplicable fact; that we perceive this distinction, as we perceive the distinction of colours, by a peculiar faculty" (J. S. Mill, "Sedgwick's Discourse", p. 51)<sup>8</sup>.

Just as the phrenologist took for granted the existence of innate capacities determined by one's biological make-up, without trying to see whether those could not be the result of psychological or environmental agencies, the "metaphysician" assumed that individuals were equipped with inborn cognitive and moral faculties. But, contrary to the phrenologist, he took those to be independent from any anatomical or physiological substratum. One corollary of this position was that when a difference was observed between, say, the intellectual achievements of two individuals (or groups of individuals, such as men and women for example), the discrepancy was accounted for by a

difference in inborn potential, that is by the lesser or greater power of one's faculties. To put it in Mill's terms, "differences in individual or national character" are resolved "by basic differences in psychic constitution" (Mill to Comte, June 9, 1842; in Haac [ed.], p. 76).

Mill objected to this approach on two grounds. On the one hand, he held that metaphysicians were too easily satisfied with taking for granted the existing set of mental dispositions of an individual and wrongly eschewed the search for the possible causes that might have explained differences between individuals. On the other hand, he charged them with furthering social conservatism, for if the metaphysicians took for granted that differences in mental achievements were primarily due to differences in mental capacities, that is to one's inborn and immutable faculties, they would necessarily refuse, say, educational reforms because they thought it could not improve the lot of those who were "mentally" worse off. This argument, Mill regarded as "the main doctrinal pillar of all the errors which impede human improvement" (J. S. Mill, *Autobiography*, p. 232).

Finally, as Mill made clear in the *System*, the charges of methodological shortsightedness and social conservatism could be levelled both against "obsessive" physiologists and "inveterate" metaphysicians:

"The majority of those who speculate on human nature, prefer dogmatically to assume that the mental differences which they perceive, or think they perceive, among human beings, are ultimate facts, incapable of being either explained or altered, rather than take the trouble of fitting themselves, by the requisite process of thought, for referring those mental differences to the outward causes by which they are for the most part produced, and on the removal of which they would cease to exist" (J. S. Mill, *SL*, VI, IV, 4, p. 859).

On the other hand, and despite the possible errors the exclusive emphasis on "laws of circumstances" could lead to, Mill explicitly regretted in his letter to Comte dated October 30, 1843, that

"the reaction of the nineteenth-century against the philosophy of the eighteenth has resulted in a contrary bias, tending to accord too great a role to basic differences and, in a number of respects, to disguise their true nature" (Mill to Comte, October 30, 1843; in Haac [ed.], p. 198).

This review of Mill's strictures on partial accounts of the origins and nature of individual mental differences is also crucial in the sense it sheds light on who Mill took his adversaries to be. Of course, as the *Autobiography* made clear, the *System* was intended as a weapon against the Intuitionist school represented by William Whewell and later by William Hamilton. It attacked these thinkers on their own ground, that of the

philosophy of mathematics and the physical sciences, by demonstrating that alleged necessary truths and psychological faculties could be explained empirically through associative processes, and were not innate items or inborn capacities. And if Mill decided to enter the fight, it was not merely because he thought that the Intuitionist school had its epistemology wrong, but also because its theories led to harmful consequences in morals, politics, and religion. In particular, he singled out the tendency, characteristic of “the reaction of the nineteenth century against the eighteenth”, to

“regard all the marked distinctions of human character as innate, and in the main indelible, and to ignore the irresistible proofs that by far the greater part of those differences, whether between individuals, races, or sexes, are such as not only might but naturally would be produced by differences in circumstances, [as] one of the chief hindrances to the rational treatment of great social questions and of one the greatest stumbling blocks to human improvement” (J. S. Mill, *Autobiography*, p. 270).

But if “innateness” and “indelibility” were really at issue, then Comte, who had claimed that phrenology was “one of the main elements by which the philosophy of the nineteenth-century [would] definitively [distinguish] itself from that of the previous centuries” (A. Comte, *PP*, p. 881) and rested his case for women’s subjection on its nativist claims, also qualified as a primary target for Mill. In short, the debate on the explanation of moral phenomena put on the same side of the philosophical divide the “Intuitionists” and the “Physiologists”, i.e. Whewell and Comte, whereas Mill stood resolutely with the “Experiential school”.

### B – Mental Differences: A Case of Composition of Causes.

So far, Mill had made a sensible case for the acknowledgment of the different factors at work in the production of moral phenomena. However, more was needed to turn his commonsensical point that one’s education, one’s turn of mind, and one’s bodily constitution may jointly explain inter-individual mental differences into a workable scientific hypothesis. The *SL*’s analysis of causation and its account of eliminative methods provided Mill with the appropriate tools for achieving this transformation.

As previously shown, Mill held that to explain the character of an individual (and especially her intellectual abilities), one must appeal to at least three different kinds of laws that interact so as to give rise to the phenomenon under scrutiny, namely “laws of circumstances”, “laws of physiology”, and “laws of mind”. The assumption under which Mill operated was that of a case in which the cause of the phenomenon at hand was not simple but consisted of an assemblage of separate causes. Accordingly, it was to be

regarded, in line with Mill's analysis of the different types of causation, as a case of "composition of causes", in which "several agents, or causes, concur as conditions to the production of an effect" (J. S. Mill, *SL*, III, VI, 1, p. 370). This should not have come as a surprise, for, as Mill had informed his reader, it was "a case in truth almost universal, there being very few effects to the production of which no more than one agent contributes" (*Id.*). "Moral" phenomena illustrated the pervasiveness of this kind of causality.

Comte did not object in principle to Mill's conception of "moral" phenomena as results of a "composition of causes". In fact, he stated explicitly in the correspondence that he regarded the attempt to explain the latter with the sole resources of the "laws of physiology" (which he equated with Gall's phrenology) as a serious methodological mistake, since

"it limits itself to considering the individual and fails to rise directly to the social point of view (the only view that can bring such studies to true fruition" (Comte to Mill, May 29, 1842; in Haac [ed.], p. 73).

In a later letter, Comte developed his point even more fully:

"intellectual and moral studies cannot appropriately base themselves purely on biology, since individual man represents an ambiguous and even false starting point here. It is only through sociology that this endeavour can be guided, for our true evolution remains unintelligible without paying constant and preponderant attention to the social conditions in which all the different aspects are, incidentally, fully interdependent" (Comte to Mill, June 19, 1842; *Ibid.*, p. 81).

If one construed sociology as the all-encompassing science dealing with human beliefs and actions, either studied synchronically (social statics) or diachronically (social dynamics), it surely included a large part of the "laws of circumstances" alluded to by Mill (notably those concerning education and inter-individual relations). Moreover, in line with Comte's ideas according to which each science depends on the one(s) which precede(s) it in the classification of the sciences<sup>9</sup>, the sensory elements of one's experience would be accounted for by physics and physiology. And even if Comte ascribed the study of "laws of mind" to phrenology, whereas Mill thought it was of no avail, the overall picture thus obtained was strikingly similar to that of Mill, that is of an explanation of moral phenomena in terms of the joint operation of different laws. For instance, Comte's emphasis on the nexus of relations constitutive of social phenomena can only be cashed out empirically if the nomological ingredient of sociological explanations is kept in mind:

“It is clear indeed that not only political institutions as such and social mores on the one hand, and mores and ideas on the other hand, must be constantly interdependent; but also that this whole must always be, by its nature, linked to the corresponding state of the integral development of mankind, considered in all in various modes of intellectual, moral and physical activity” (A. Comte, *PS*, p. 114).

Comte thus underlined the specific feature that characterized his own conception of social science, namely its intrinsically historical nature. It was only by taking into account, he argued, the “necessary influence of the various human generations on the following generations” that the positive study of humanity would become something else than a “mere spontaneous extension of the natural history of man” (*Ibid.*, p. 148). This view tallied with Comte’s endorsement of a non-reductionist view of science, since it provided the factor by which to differentiate animal and human societies: the latter had a past on which they built whereas an endless present delineated the horizon of the former.

The details of the architectonic relations of sociology, which Comte regarded as the relevant discipline for the explanation of “moral phenomena”, with the other sciences were spelt out in the Forty-Ninth Lesson of the *Cours* on the “Necessary Relations of Social Physics with the Other Fundamental Branches of Positive Philosophy”<sup>10</sup>. As for its dependence on the previous sciences of the classification, Comte schematised it as the result of a fundamental dualism between mankind and its milieu. On the one hand, the sociological study of the first term of the dualism necessarily depended on “organic philosophy”, that is biology, which “alone introduces to the real laws of human nature” (*Ibid.*, p. 156). On the other hand, “inorganic philosophy” (astronomy, physics, and chemistry) was held to account for the “external conditions of the existence of mankind” (*Id.*).

“In short, one of the two great departments of natural philosophy determines, within sociology, the agent of the phenomenon; the other, the milieu in which it develops” (*Id.*).

Comte particularly emphasized the specific connection existing between biology and sociology, since he viewed the advent of the latter as having been directly conditioned by what he had called earlier “the important philosophical revolution which gave birth to cerebral physiology” (*Ibid.*, p. 80), namely Gall’s physiological phrenology. Taking stock of what he had established in the Forty-Fifth Lesson of the *Cours*, Comte explained that it was through the “transcendent part of biology relative to the general study of intellectual and moral phenomena” that the “direct subordination of sociology to biology” (*Ibid.*, p. 157) took place.

Comte distinguished between two kinds of dependence of sociology on biology. On the one hand, there existed what he termed a “primitive” dependence, according to which biology provided the starting point of investigations of social statics by accounting for “human sociability and the various organic conditions which determine its specific character” (*Id.*). By this, Comte meant that the source of man’s social existence should be found in his “nature”, that is in his biological constitution<sup>11</sup>. The second kind of dependence of sociology on biology consisted in having “biological indications” used as a “precious general auxiliary and, above all, as an essential and fundamental means of control” (*Ibid.*, p. 159) of sociological generalizations.

As for the “primitive” dependence of sociology on biology, Comte did not merely argue for the well-worn explanation of human societies as means of compensating for the bodily weaknesses of isolated individuals. What he specifically aimed at was the inborn tendencies which could provide a rationale for the variety of social relations existing between individuals. It was indeed the case that such traits could be found in phrenology, for, if one reviewed Spurzheim’s works, whose classifications Comte regarded as “more concise” and “written much more methodically” (Comte to Mill, March 4, 1842; in Haac [ed.], p. 59) than Gall’s, his list of faculties mapped exactly the most prevalent social ties. Take for instance Spurzheim’s 1818 *Observations sur la phrénologie*<sup>12</sup>: the penchants of “Amativeness” and “Philoprogenitiveness” accounted for heterosexual intercourses and the existence of the family; the sentiments of “Benevolence” and “Veneration” for hierarchical social relations; the sentiments of “Self-love” and “Approbativeness” for competitive relations; etc. These different faculties not only explained the existence of society as the environment in which man could fulfil his various needs, but also its most basic structures.

Furthermore, by emphasizing the role of the affective faculties (and most notably the other-directed ones), Comte held that Gall had refuted the proto-utilitarian views of Helvétius and the French *Idéologistes* of man as “an argumentative being, constantly carrying out a multitude of imperceptible calculations without knowing it” (A. Comte, *PP*, p. 856) and their promotion of “egoism as the necessarily unique principle of any natural morals proper” (*Ibid.*, p. 862). On the contrary, phrenology substantiated a picture of man as a being whose ends were set by his affections, penchants, and passions and reached with the help of his intellectual faculties, and whose moral nature balanced egoism with sympathy. As Comte suggested (*Ibid.*, p. 856 & 863), Gall had “cerebralized” the theory of human nature:

“the essentially spontaneous sociability of the human species, in accordance with an instinctive penchant for communal life and independently of all personal calculation, and often despite the strongest individual interests, would be questioned, as of course, by those who have not paid enough attention to the essential light shed on the subject by the sound biological theory of our intellectual and moral nature” (A. Comte, *Physique sociale*, p. 177).

Finally, phrenology accounted for “human sociability and the various organic conditions which determine its specific character” (A. Comte, *PS*, p. 157) in one last sense. Within the explanatory framework Comte adopted for his social statics, the knowledge of the respective capacities of the different individuals (the “nature” of their predominant faculties) explained their place and status in society. Ideally, in a society based on natural endowments, everybody would be assigned the role which would suit best one’s particular biological make-up. In other words, the division of labor in society mirrored the plurality of the organs in the human brain. The phrenological naturalization was complete, and supported Comte’s own sociological speculations: it explained the existence of human societies and singled out the spontaneous basis on which social relations thrived. It provided the conditions of possibility of social existence.

Yet, Comte also warned would-be sociologists that an exclusive reliance on biology would be detrimental to a proper understanding of social phenomena. For, if it was the case that the “theory of human nature” informed us on what inborn faculties called for and rendered possible man’s social existence, it did not determine on its own the actual details of social organization. It was only through the consideration of mankind’s historical experience and of the various forms in which it was realized that one could get a sense of the laws of sociological phenomena. For instance, the fact that different portions of mankind had been exposed to different climatic or geographic conditions (to different “milieux” as Comte would say) or to different historical circumstances (such as wars, invasion, epidemics) might have explained that they had adopted different forms of social organization, which in turn supposed the fostering of certain faculties in preference to others. Phrenology was blind to this aspect of social facts, because it merely studied the human mind statically, whereas sociology was at root a developmental science of human phenomena<sup>13</sup>. As Comte remarked, this neglect of history could lead to serious sociological blunders, mainly by prompting one “to consider as inherent in man’s fundamental nature, and consequently as indestructible, temporary social modifications characteristic of a specific state of human development” (*Ibid.*, p. 160). Gall himself fell prey to such an error, when he attempted to demonstrate

“the alleged immobility of the military tendencies of mankind, despite the sum of historical evidence which, on the contrary, indicate so obviously that the military spirit declines as human development takes a place” (*Id.*).

However, Comte argued that even if the historical dimension of social development made it impossible to draw sociological inferences from the cerebral “theory of human nature” alone, the latter still remained a useful tool for controlling the cogency of sociological hypotheses. For Comte maintained that any sociological account should be accepted only if it was compatible with “the known laws of human nature” (*Ibid.*, p. 158), that is the picture of the human mind and its faculties provided by phrenology. This was what Comte called the “continuous” mode of dependence of sociology on biology<sup>14</sup>.

Having specified the two kinds of dependence of sociology on biology, Comte concluded that neither threatened the specificity of sociology:

“instead of being a mere appendix of biology, social physics must certainly be conceived as a perfectly distinct science, directly established on bases of its own, but profoundly connected, either in its point of departure or in its continuous development, to the entire system of biological philosophy” (*Ibid.*, p. 61).

Everything considered, Comte’s case for the autonomy of sociology seems to hold. For if all that biology does is to list the human faculties involved in social existence and thereby circumscribes the field of possible forms of social organization, but without licensing any inference as to what forms actually exist, it follows that only historical analysis can determine the developmental laws of social phenomena. Moreover, as we have seen with the case of moral phenomena, it also appears that Comte shared Mill’s general conception of sociological explanation as a process dealing with facts resulting from a composition of causes and whose explanation necessarily involve different and irreducible sets of laws. Accordingly, the previous development lends credence to the thesis of Comte’s endorsement of a non-reductionist view of science, and more notably of sociology.

But if this is the case, Mill was certainly misguided in charging Comte with attempting “to construct the theory of the mind solely on such data as physiology at present affords” (J. S. Mill, *SL*, VI, IV, 2, p. 851). By the same token, my contention that it would be inaccurate to regard Comte as sociology’s forefather and as an early advocate of the “disunity of science” thesis would be mistaken. Indeed, some Comtian scholars have argued that Mill erred when he singled out Comte as one of those who tried to reduce sociology to biology. For instance, R. Scharff claims that in the *SL*, “as

typically elsewhere [probably the correspondence and *Auguste Comte and Positivism*], Mill is silent about the social behaviourist side of Comte's view of mental phenomena" (R. Scharff, *Comte After Positivism*, p. 41)<sup>15</sup>. Similarly, L. Clauzade maintains that Mill's analysis is "unable to grasp Comte's position" with respect to the knowledge of human nature, because "it radically ignores what could be called (...) the *a posteriori* mode characteristic of Comtian philosophy and which consists in reversing the order of foundation in favour of the actual and the collective" (L. Clauzade, "Auguste Comte et Stuart Mill", pp. 51-2)<sup>16</sup>, that is in having sociology taking over biology for the explanation of human phenomena.

The following alternative might explain Mill's interpretation of Comte: either Mill was wrong because he did not pay attention to what Comte had written, or he had good reasons to uphold his interpretation. As to the first explanation, Mill's perceptiveness as a reader and the fact that his reading of the last three volumes of the *Cours* prompted the "complete revision" (Mill to Comte, January 28, 1843; in Haac [ed.], p. 130) of the last book of the *System* makes it very unlikely that he had missed the gist of Comte's developments about the specificity of sociology. Furthermore, as Clauzade acknowledges, Mill could not have ignored it, since "it was not only stated in the conclusions of the *Cours*, but it also appeared in the correspondence" (L. Clauzade, "Auguste Comte et Stuart Mill", p. 52). Mill indeed agreed, in his letter dated June 9, 1842, that Comte himself had "observed" that attention should be paid, when dealing with intellectual differences,

"not only to the extent of activity of an organ but to the total amount of education the individual has received, considered in the broadest definition of the term" (Mill to Comte, June 9, 1842; in Haac [ed.], p. 76).

This remark certainly testified to Mill's awareness that Comte's views were in principle perfectly compatible with his own conception of social explanation. Accordingly, the true interpretation of Mill's stance should probably be sought in the other branch of the alternative: if Mill ascribed a reductionist view of sociology to Comte, it was because he came across a case in which Comte did not live by his own principles. The case in point was of course that of the explanation of women's mental aptitudes, and I will dedicate the last section of this chapter to an analysis of the reasons why Mill, despite the pronouncements of the *Cours*, felt entitled to argue that Comte had attempted "to construct the theory of the mind solely on such data as physiology at present affords" (J. S. Mill, *SL*, Book VI, Chap. IV, Sect. 2, p. 851). But before turning to this, we have to dispel the impression of a complete agreement as to what a sociological explanation

consists of which a mere *prima facie* interpretation of Comte's and Mill's writings up to the correspondence might have produced. For when it comes to spell out the specifics of the proper way to assess one the phenomenon of inter-individual differences in mental aptitudes (especially between men's and women's), it becomes apparent the convergence was only superficial.

### **C – The Centrality of Psychology in the Explanation of Moral Phenomena.**

As described above, Mill held “moral” phenomena to be the effects of a composition of at least three different kinds of causes (environmental in the broadest sense of the term, physiological, and psychological). Accordingly, the explanation of these complex phenomena appealed to the various sets of laws governing these causes. Given that the ordinary methods of observation and experiment could not be used in cases of complex phenomena, the only mode of investigation practicable was what Mill called the “Deductive Method”, which inferred “the law of an effect, from the laws of the different tendencies of which it is the joint result” (J. S. Mill, *SL*, III, XI, 1, p. 454). Mill regarded such process as a threefold operation: it started with an appraisal of the laws of the different causes involved in the production of the phenomenon under scrutiny (“direct induction”), then carried out the calculation of how the different causes composed with one another (“ratiocination”), and ended with the comparison of the results of the deduction with the direct results of observation when available (“verification”).

What was striking about Mill's presentation of the deductive method was that, even if it argued that the procedure was designed to deal with complex phenomena in general, it nonetheless took as its first illustration of its possible applications the case of social and historical phenomena:

“Thus, if the subject be social or historical phenomena, the premises of the Deductive Method must be the laws of the causes which determine that class of phenomena; and those causes are human actions, together with the general outward circumstances under the dominion of which mankind are placed, and which constitute man's position in this world” (*Id.*).

Now, this choice is puzzling, because, as Bain recalled (A. Bain, *John Stuart Mill*, p. 67), Mill had been somewhat reluctant to use examples drawn from the “moral sciences” to substantiate his account of the various scientific methods<sup>17</sup>. However, he did exactly that for the Deductive Method. Why? The lack of knowledge about the exact details of the drafting of Book III prevents one from assuming that, in that instance, Mill's remark

echoed his discussion with Comte. But it certainly testifies to the Mill's commitment to a pluralistic and non-reductionist conception of sociological and historical phenomena.

According to Mill's account, the first step of the Deductive Method was that of "direct induction", that is the ascertainment of the different causes required for the explanation of the phenomenon at hand and of their laws. In that first regard, Mill did not doubt that it was possible to identify the causally relevant factors.

"In the last case mentioned, this first condition is of easy fulfilment. That social phenomena depended on the acts and mental impressions of human beings, never could have been a matter of any doubt, however imperfectly it may have been known either by what laws those impressions and actions are governed, or to what social consequences their laws naturally lead" (J. S. Mill, *SL*, III, XI, 1, p. 455)<sup>18</sup>.

Hence the following agenda:

"The Deductive Method, applied to social phenomena, must begin, therefore, by investigating, or must suppose to have been already investigated, the laws of human action, and those properties of outward things by which the actions of human beings in society are determined. Some of these general truths will naturally be obtained by observation and experiment, others by deduction: the more complex laws of human action, for example, may be deduced from the simpler ones; but the simple or elementary laws will always, and necessarily, have been obtained by a directly inductive process" (*Ibid.*, p. 454-5).

This last constraint was instituted so as to avoid that the method in question be conflated with the hypothetical method described in Chapter XIV of Book III: the structure of the process was indeed deductive, but the origins of the premises guaranteed the empirical nature of its conclusions, insofar as the laws of the causes considered had been obtained via the four methods of experimental inquiry. But was it really the case for social phenomena? What was the status of the laws involved in the production of mental phenomena?

In the light of his exchange with Comte and the relevant developments of the *System*<sup>19</sup>, there is no doubt that Mill believed that the "laws of physiology" had not yet been properly established in an inductive manner. Furthermore, Mill agreed that the "laws of circumstances" broadly construed remained mysterious: except for the fact that sensory physiology had shed some light on the perceptual mechanisms, it seemed that everything was still to be done in that field. For instance, the influence of social conditioning (and especially of education) on the formation of character had not received any satisfactory explanation. As he told Comte in one of his letters, the type of study initiated by Helvétius "[had] found no one to continue it" (Mill to Comte, October 30, 1843; in Haac [ed.], p. 197). However, the situation was different for the "laws of mind".

Both in the *System* and the correspondence, Mill endorsed association psychology as the theory which best accounted for the laws of mental phenomena. As argued in the *System*, if epiphenomenalism failed to make the case for the dependence of laws of mental states on the laws of the nervous states, one was left with uniformities of succession of states of mind to explain.

“The successions, therefore, which obtain among mental phenomena, do not admit of being deduced from the physiological of our nervous organization: and all real knowledge of them must continue, for a long time at least, if not always, to be sought in the direct study, by observation and experiment, and of the mental successions themselves. Since therefore the order of our mental phenomena must be studied in those phenomena, and not inferred from the laws of any phenomena more general, there is a distinct and separate Science of Mind” (J. S. Mill, *SL*, VI, IV, 2, p. 851).

As shown previously<sup>20</sup>, Mill did not deny that, in principle, it might be possible to reduce mental successions to nervous successions. He merely defended a “weak or methodological autonomy of psychology” (J. Skorupski, *John Stuart Mill*, p. 261) in the sense that only the absence of an *actual* reduction of mental phenomena to nervous phenomena guaranteed the independence of the “Science of Mind” or psychology. However, as long as the reduction had not been achieved, Mill thought that the investigation of mental phenomena *qua* mental phenomena was a worthy enterprise and that indeed an impressive body of knowledge had already been collected.

What Mill described with caution to Comte as a belief “in the possibility of a positive psychology” conceived as an “analysis of our intellectual and affective faculties” (Mill to Comte, December 18, 1841; in Haac [ed.], p. 42), appeared in a somewhat different light in the third section of chapter four of the sixth Book of the *System*: there, it was not merely for the possibility of a scientific psychology that Mill argued, but for the recognition of its actual existence. Dealing with mental phenomena, the “Science of Mind” was concerned with finding the laws of succession according to which psychological states followed or caused one another, just as the “Science of Matter” was concerned with the laws of physical phenomena<sup>21</sup>.

Accordingly, it should not have come as a surprise that Mill considered the associationist “laws of the mind” as a crucial element of his conception of social explanation. One of the aims of the fourth chapter of the sixth Book of the *System* was to bring his readers to accept that point. Having shown that the epiphenomenalist thesis, and particularly its phrenological version, could not deliver the actual reduction of the laws of mental states to nervous state it promised, Mill concluded that the study of the former would remain for the time being a distinct and separate discipline

concerned with the uniformities of successions among states of mind and that, consequently, no satisfactory explanation of “moral” phenomena could spare itself the trouble of taking it into consideration. Mill’s concern in the *System* was therefore primarily architectonic, in the sense that it attempted to define what would count as a good sociological explanation. And that is exactly how one is to understand the remark added to the 1846 edition of the *System*, and implicitly targeting Comte, in which Mill maintained that the exclusive reliance on “laws of physiology” and the neglect of the “laws of mind” appeared to him

“an infringement of the true canons of inductive philosophy, which must produce, and which does produce, erroneous conclusions in some very important departments of the science of human nature” (J. S. Mill, *SL*, VI, IV, 2, pp. 851-2).

What is striking is that this aspect of Mill’s position has been overlooked by most of the recent scholarship dealing with the controversy on psychology between Comte and Mill<sup>22</sup>. Instead of paying attention to the architectonical issue, the majority of commentators have focused on what they took to be the heart of the debate, namely Comte’s proscription of psychology from the encyclopaedic scale of the sciences and Mill’s defence of its scientificity. What was at stake, on the received view of the matter, was the methodological status of the primary instrument of psychology, i.e. introspection<sup>23</sup>.

In brief, Comte held that introspection could not be regarded as a genuine process of observation, because it did not satisfy what may be called the *dualistic requirement*: that of having some kind of distance, or heterogeneity, between the observer (the subject) and what is observed (the object). In contrast, interior observation bluntly conflated the two terms of the relation: “we observe phenomena with our mind; but with what do we observe the mind itself, its operations, its way of proceeding? We cannot divide our mind, that is to say, our brain, in two parts, one that acts, while the other watches it to see it goes to work” (Comte to Valat, September 24, 1819; A. Comte, *Correspondance générale et confessions*. Vol. I., 1814–1840, p. 58). Therefore, interior observation in fact constituted an epistemological oxymoron. Introspection was worthless because the observations it was supposed to gather were empty. Hence, no science of mental phenomena could be based on it. Introspective psychology was doomed to fail.

Surely, when he started corresponding with Comte, it is true Mill was perfectly aware that Comte had vehemently objected to the very possibility of an introspective

psychology for many years, especially in the First Lesson of the *Cours*<sup>24</sup>. For instance, as already noted, Mill cautiously mentioned at the very beginning of the correspondence that his belief in the possibility of a “positive psychology” might lead Comte to suspect him of “metaphysical tendencies” (Mill to Comte, December 18, 1841; in Haac [ed.], p. 42). Similarly, the *System* recalled that Comte denied introspective psychology “the character of a science, but places it, in the chimerical nature of its objects and pretensions, almost on a par with astrology” (J. S. Mill, *SL*, VI, IV, 2, p. 850-1).

Now, from Mill’s knowledge of Comte’s proscription of psychology and the fact that the associationist psychology John Stuart Mill endorsed relied almost exclusively on introspection to establish the “laws of mind”<sup>25</sup>, Heyd, Wilson, and Petit conclude that John Stuart Mill felt compelled to refute Comte’s methodological objections to it. In a somewhat different vein, Sharff argues that Mill was after a refutation of Comte’s strictures on the introspective method of psychology, but that he failed to understand that Comte was not specifically attacking associationist psychology<sup>26</sup>. In support of that interpretation, these authors adduce textual evidence predominantly drawn from two paragraphs of Mill’s later *Auguste Comte and Positivism* (1865)<sup>27</sup>, in which Mill indeed *seems* to address Comte’s objections. However, for all its plausibility, I claim that this emphasis on Mill’s concern with justifying introspection derives from a partial and incomplete reading of Mill’s writings.

Firstly, none of the commentators notice that the scientific status of introspection as a psychological method was touched upon neither in the *System* nor in the correspondence with Comte, two sources in which one might have expected to find the matter broached *if* Mill really did care about it. But that simply is not the case: Mill made no mention of it whatsoever in these texts. Why? Because, as he put it in *Auguste Comte and Positivism*, he considered Comte’s proscription of psychology an “aberration” resulting from “a fallacy respecting which the only wonder is that it should impose on any one” (J. S. Mill, *Auguste Comte and Positivism*, p. 296). And it certainly did not impose on Mill, for, as he claimed in the *System*,

“it remains incontestable that there exist uniformities of succession among states of mind, and that these can be ascertained by observation and experiment” (J. S. Mill, *SL*, Book VI, Chap. IV, Sect. 2, p. 851).

Everything considered, one is tempted to think that Mill never took seriously Comte’s objections to introspection and that his alleged refutation of them was merely a piece of self-serving polemics in a book that Mill intended as a scathing criticism of the harmful aspects of Comte’s thought<sup>28</sup>. Of course, knowing the later fate of introspection in

scientific psychology<sup>29</sup>, one might argue that Mill should have paid more attention to Comte's objections and that he was at fault in not grasping the shortcomings of the procedure<sup>30</sup>. But such a criticism simply overlooks the historical context in which Mill developed his thought.

Secondly, Mill re-asserted twice his architectonic concern with Comte's proscription of psychology for the study of "moral phenomena" in the course of three pages of *Auguste Comte and Positivism*: as already noted, he started with the claim that the omission of psychology led to aberration of "great practical importance" (J. S. Mill, *Auguste Comte and Positivism*, p. 296), that is that his erroneous views of sociological explanation led to dubious policies, and concluded that it was connected with "serious errors in his attempt to create a Social Science", since it resulted in his failure to "appreciate the influence which circumstances exercise, through psychological laws, in producing diversities of character, collective or individual" (*Ibid.*, p. 298).

When this emphasis on the structure of sociological explanation and the detrimental consequences brought about by a faulty conceptualisation of it is acknowledged, it is difficult to agree with Clauzade when he maintains that Mill regarded his controversy with Comte over psychology "as an issue affecting merely the scientific status of interior observation" (L. Clauzade, "Auguste Comte et Stuart Mill", p. 46). As I have just shown, it is simply wrong to claim that Mill treated "the argument against interior observation as an independent argumentative unit, from which it would be possible to draw conclusions as to the manner Comte generally conceives science" (*Ibid.*, p. 56). Firstly, because Mill right from the start assumed the viability of introspective psychology and never really took seriously Comte's objections. Secondly, because what prompted Mill to engage the discussion with Comte was not an abstract concern for the study of intellectual and affective phenomena, but the pressing practical issue of women's subjection. Since Comte supported his views on women with a certain account of the origin and nature of sex-based mental differences, Mill was forced to meet him on his own grounds. Accordingly, Mill's motivation for broaching the issue of psychology with Comte was primarily a social and political one. Eventually, as already noted, Clauzade fails to see that if Mill ascribed a reductionist view of sociology to Comte, it was because Mill realized that Comte's explanation of the mental aptitudes belied his advocacy of sociological explanations as necessarily including the "collective and historical reality" (*Ibid.*, p. 53) of the human mind. To this last point, I will now turn.

## D – The Explanation of Moral Phenomena and the Method of Residues.

As shown in the previous section, Mill's developments on psychology in the *System* were part and parcel of the first step of the Deductive Method as applied to the explanation of "moral" phenomena, that of the ascertainment of the different causes required for the explanation of the phenomenon under scrutiny and of their laws. Now, one relevant set of laws (the laws of mind as established by association psychology) has been reviewed. But what about the others?

Mill acknowledged, as noticed before<sup>31</sup>, that the phase of "direct induction" with respect to the "laws of circumstances" and the "laws of physiology" had not been successful so far. But if this was really the case that the different laws at work in the production of "moral" phenomena had not been asserted properly, the immediate consequence of this was the impossibility of explaining moral phenomena by way of the deductive method: as Mill made clear, complex phenomena resulting from a composition of causes could be explained deductively if and only if the laws of the concurrent causes were known independently from one another beforehand. As he put it in the *System*,

"this supposes a previous process of observation or experiment upon each cause separately; or else a previous deduction, which also must depend for its ultimate premises on observation or experiment" (J. S. Mill, *SL*, III, XI, 1, p. 454).

Given that in the case at hand the laws of some concurrent causes were not known, the explanation of "moral" phenomena was compromised before it even started: there was not enough material to proceed to the ratiocinative step of the Deductive Method. However, Mill did not believe that this lack of inductive support was an insurmountable obstacle on the way to the explanation of moral phenomena.

As for the "laws of circumstances", the *System* had set up the lines along which a "science of the formation of character" or "Ethology" *could* develop (*Ibid.*, VI, V). In the early days of the correspondence, Mill was extremely confident about the success of such an endeavour and expressed his desire to contribute to it:

"Even though human life is short, we can look forward to seeing the state of society and the national character of each important segment of mankind related to the laws of human nature and to the characteristics of the general or particular organic milieu to which they pertain; though, to be sure, the link will not be as complete as that we find today in the most advanced sciences. I would be happy, indeed, if I thought myself

capable of playing a truly important role in this great enterprise, even if only a secondary one" (Mill to Comte, March 22, 1842; in Haac [ed.], p. 61).

Furthermore, Mill constantly emphasized to Comte the fact that the development of Ethology, the "theory of how external circumstances, either individual or social, influence the formation of moral and intellectual character" (Mill to Comte, October 30, 1843; *Ibid.*, p. 198), would remedy the poor state of social statics, a discipline about which both agreed that it was the key to the sexual equality issue.

However, Mill did not deny that this inquiry about the environmental determinants of character seemed "to be the least advanced of all scientific speculations of any importance" (*Id.*): the absence of upholders of Helvétius's views, added to the twin compulsions of "obsessive" physiologists and "inveterate" metaphysicians for the exclusive consideration of "laws of physiology" and "original and ultimate facts" of the mind, diverted almost all interest from this kind of investigation.

"True acquaintance, if only empirical, with this type of natural relationship [between one's character and one's environment], appears to be the rarest of all, and sound observations are likewise (partly because the subject is so difficult, partly due to the tendency, which most often prevails in this kind of research, to consider inexplicable what one was unable to explain" (*Id.*, p. 198).

Given this situation and the fact that Mill's conception of Ethology in the *System*, as we will see in Chapter VI, remained largely programmatic, what made him so sure that a satisfactory explanation of "moral" phenomena was nevertheless within reach? A hint as to what may have prompted his belief in the near advent of Ethology had to do with the relation of the latter with psychology. Without entering into details that will be covered in due time, one may nonetheless say that Mill assumed the "laws of mind" as the major causal regularities involved in the deduction of ethological propositions. Accordingly, Mill felt he could argue that the soundness of psychological laws was likely to guarantee, at least roughly, the soundness of ethological conclusions, even if the obtaining of precise ones still required wiggling with the other relevant causal factors. Now, this might explain Mill's optimism concerning the prospects of his ethological pet-project, thereby licensing his hope that explanations of "moral" phenomena were attainable. But this also reveals one implicit assumption for which Mill never provided arguments: he consistently held that psychological and ethological laws weighted more on the formation of character traits than physiological laws. As we will see shortly, this bias clearly surfaced in the way he thought one could arrive at a precise determination of the different causal influences involved in "moral" phenomena..

What about “laws of physiology”? Even if Mill did not deny that in principle laws of mental states could be reduced to laws of nervous states, he nonetheless regarded (and was entitled to regard) the actual attempts at such reduction as having been unsuccessful so far. But if so the project of obtaining deductive explanations of “moral” phenomena was compromised once again: since the laws of one of the concurrent causes was not known independently of the others beforehand, “moral” phenomena, which were resulting from causal composition, could not be accounted for via the Deductive Method.

However, Mill thought he had the resources for coping with this imperfect knowledge of physiological laws. The solution of the predicament lay in one of the four methods of experimental inquiry developed in the *System*, namely that of Residues (J. S. Mill, *SL*, III, VIII, 5). The Fourth Canon of Mill’s methods went as follows:

“Subduct from any phenomenon such part as is known by previous inductions to be the effect of certain antecedents, and the residue of the phenomenon is the effect of the remaining antecedents” (*Ibid.*, p. 398).

In cases where one knew some of the causes involved in the production of a phenomenon, the subtraction of the parts of the effect due to known causes would lead to the determination of a residuum uniquely resulting from “antecedents which had been overlooked, or of which the effect was as yet an unknown quantity” (*Ibid.*, p. 397).

As for the explanation of “moral” phenomena, the situation was the following: according to Mill, one could rely on “laws of the mind” and, provided one accepted his views on the dependence of ethology on psychology, one could estimate roughly for which part of the effects the “laws of circumstances” were responsible; given that, as he agreed with Comte, human physical organization was probably the only other agent involved, the features of “moral” phenomena that could not be accounted for by previous inductions would have to be ascribed to it.

Such a line of argument was in complete accordance with Mill’s belief that nervous physiology was far less developed than psychology, and that consequently, from a purely pragmatic perspective, the latter constituted a far more appropriate starting point for the estimation of the respective amount of causal influence exercised by the different agents considered.

That Mill thought appropriate the application of the Method of Residues to deductive explanations of “moral” phenomena is evidenced by two passages in the *System*. In Book III, Chap. IX, Mill took the case of mental abilities as a conclusive

illustration of the cogency of the Method of Residues. In that instance, his target was the “metaphysicians” who ascribed mental differences to what he called in a letter to Comte “basic differences in psychic constitution” (Mill to Comte, June 9, 1842; in Haac [ed.], p. 76):

“if it be possible to establish, what is generally rather assumed than proved, that there is in one human individual, one sex, or one race of mankind over another, an inherent and inexplicable superiority in mental faculties, this must be proved by subtracting from the differences of intellect which we in fact see, all that can be traced by known laws either to the ascertained differences of physical organization, or to the differences which have existed in the outward circumstances in which the subjects of the comparison have hitherto been placed” (J. S. Mill, *SL*, III, IX, 5, pp. 428-9).

Of course, what Mill proposed here was just the experimental setting in which the claims of the “metaphysicians” of the Whewellian brand could be assessed, for, as we have seen, Mill was quite guarded as to the reliability of the actual laws dealing with “physical organization”. But still, he held that only if it turned out that “laws of circumstances” (and those included the considerations of the “laws of mind”) and “laws of physiology” could not account for the entirety of the phenomenon of inter-individual mental differences, then the residuum arrived at “would be evidence of an ulterior original distinction, and the measure of its amount” (*Ibid.*, p. 429). For the time being, Mill concluded,

“the strongest assertors of such supposed differences have hitherto been very negligent of providing with these necessary logical conditions of the establishment of their doctrine” (*Id.*).

Book VI rehearsed the same argument, but against “physiologists” this time:

“Even admitting the influence of cerebral conformation to be as great as is contended for, it would still be a question how far the cerebral development determined the propensity itself, and how far it only acted by modifying the nature and degree of the sensations on which the propensity may be psychologically dependent. And it is certain that, in human beings at least, differences in education and in outward circumstances, together with physical differences in the sensations produced in different individuals by the same external or internal cause, are capable of accounting for a far greater portion of character than is supposed even by the most moderate phrenologists” (*Ibid.*, VI, IV, 4, p. 858).

The explanatory scheme mobilised by Mill remained the same, but he introduced a variant which was especially relevant to the issue of inter-individual mental differences. Drawing on the psychological account proposed by the Unitarian minister and educator James Martineau<sup>32</sup>, Mill argued that the laws of the association of ideas could account for these kinds of differences. On the one hand, it was true that one’s character traits or mental abilities depended on one’s capacity to be affected by

sensations: for instance, a high level of nervous sensitivity led to a greater susceptibility of being affected by simultaneous sensations, whereas a lesser susceptibility made one more receptive to successive sensations. However, this differential susceptibility could be extended to mental events independently of sensations, because of the influence of laws of the association of ideas. But if so, one's character traits or mental abilities could be the result of conditioning (outward or self-induced). As Mill quoted from Martineau,

"where nature has endowed an individual with great original susceptibility, he will probably be distinguished by fondness for natural history, a relish for the beautiful and great, and moral enthusiasm; where there is but a mediocrity of sensibility, a love of science, of abstract truth, with a deficiency of a taste and of fervour, likely to be the result" (*Id.*).

What is striking about this argument is that it in fact dispensed with the postulation of faculties (and their corresponding organs) as a necessary element in the explanation of "moral" phenomena. So when, Mill referred to "diversities in organic constitution" or "differences in bodily organization", he in fact was not alluding to the differences in cerebral conformation, but to mere nervous sensitivity. Accordingly, the "laws of physiology" he was talking about had nothing to do with the kind of laws the phrenologists endorsed: they were just the common laws of sensory physiology that any empirically minded associationist had to postulate to set the whole cognitive machine to work.

Surely, Mill agreed that people differed in their capacity to be affected by sensations, but this was a far cry from endorsing that people's mental abilities were constrained *ab initio* by their "organization", since, as Mill made clear, one could be conditioned (outwardly or by a self-induced process) to acquire or develop certain abilities by favouring certain associations of ideas over others. Just by postulating sensations, ideas and the laws of association, one was able to explain what made a mind fit for "natural history", the estimate of "the beautiful and great", and "moral enthusiasm", and another for "science" as the pursuit of "abstract truth" (*Id.*), for these character traits and mental aptitudes were in fact mostly the outcome of one's experience. If one recalls J. Fodor's remark that the explanatory scheme favoured by associationism led to "an account of the ontogeny of mental processes which dispensed with the postulation of innate cognitive architecture – which in short, dispensed with the need for faculties" (J. Fodor, *The Modularity of Mind*, p. 27-8)<sup>33</sup>, this certainly applied to Mill's conception of the higher mental capacities of man.

Mill had no doubt that this kind of associationist explanation of “mental peculiarities” would account for a considerable number of inter-individual differences in intellectual and moral capacities. Yet, he also agreed that not all phenomena would be accounted for in a similar manner, and that the “laws of physiology” would be appealed to, via the Method of Residues, to provide a rationale for these cases. As Mill put it,

“I by no means seek to imply from this that they [the “laws of mind”] will account for all; but that which remains to be otherwise accounted for is merely a *residual phenomenon*; and the amount of the residue can only be determined by persons already familiar with the explanation of phenomena by psychological laws” (J. S. Mill, *SL*, VI, IV, 4, p. 858).

Such was Mill’s proposal for the explanation of mental differences. As any complex phenomenon, it was to be resolved in the laws of its concurrent causes. Since some of the laws remained unknown, the Method of Residues had to be introduced so as to determine the weight of the various agents involved in the phenomenon. This would in turn enable one to grasp more precisely the part of the effects for which the causes not yet accounted for were responsible, and thereby initiate investigations as to the nature of the actual laws governing them. Once these laws would be ascertained, a straightforward deduction could be achieved.

However, what has rendered this development about the Method of Residues necessary was not only that it enables one to spell out fully Mill’s stance on the explanation of “moral” phenomena and to demonstrate that the *System* provided him with the theoretical resources for coping with likely objections to his approach; but also because, when the correspondence started focusing on the origin and nature of sex-based intellectual differences (a “moral” phenomenon indeed), Mill and Comte, whilst agreeing on the cogency of the method for solving the issue, disagreed as to the proper way of putting it to use.

The first reference to the method was made by Mill in his letter to Comte dated October 30, 1843. Taking stock of the inconclusiveness of the evidence brought in support of the phrenological claims about female intellectual inferiority, Mill argued that almost everything remained to be done in that field of research. He also pointed out that, “as long as ethological analysis of the influence of external factors, even the most general, [was] as little advanced as it [was]” (Mill to Comte, October 30, 1843; in Haac [ed.], p.199), the advancement of knowledge would be severely impeded. He concluded by claiming that, for the time being, “anatomical differences” would only contribute to the explanation of moral phenomena as “residues (to use the terms of my *Logic*, after subtraction of everything that can be explained some other way” (*Id.*; slightly revised

translation). It thus appeared that Mill regarded the “laws of mind” broadly construed as the mainspring of the inquiry and relegated physiological agency to the role of a last resort explanatory agent.

In his letter dated November 14, 1843, which can be considered his definitive attempt to respond to Mill’s strictures, Comte gave a twofold reply, “scientific” and “logical”. As to the first, he contended, contrary to Mill, that biology should figure as the prevalent explanatory tool in accounting for the specific kind of “moral” phenomena at hand, that of women’s alleged intellectual inferiority:

“I believe that the preliminary insights which we have derived from biology alone and which take on greater importance, especially for the problem at hand, are already far more advanced than you seem to admit, in spite of the rather unsatisfactory state of our biological studies” (Comte to Mill, November 14, 1843; in Haac [ed.], p. 207).

This pronouncement was an echo of a long-standing position of Comte on the subject, according to which the sexual equality issue could be resolved by appealing uniquely to biological data, although he was also ready to resort to other kinds of argument. Comte’s belief that the issue could be settled on biological grounds independently of any other consideration implied that the difference in intellectual capacities between sexes was primarily a natural phenomenon depending the respective organization of men and women. Accordingly, he surely regarded it, to use Mill’s own words, as “innate, and in the main indelible” (J. S. Mill, *Autobiography*, p. 270). In short, biological agency prevailed on all other factors in the production of intellectual differences.

Comte made no mystery of which sort of evidence he believed supported his faith in the necessary prevalence of biology in the explanation of this kind of moral phenomena: it was primarily Gall’s phrenological Innatism.

“Gall, who fittingly brought out the preponderant influence of the original organism, all too much neglected that of education, which had been so overemphasized by Helvétius. But, while the truth assuredly lies in between these two extremes, I certainly do not see it exactly half way between these views; it lies far closer to the modern view than to the earlier one” (Comte to Mill, November 14, 1843; in Haac [ed.], p. 207).

Clearly, Mill’s criticism of phrenology had no impact whatsoever on Comte. Notwithstanding the lip service he paid to the environmentalist approach, Comte’s stance was clear: it was women’s organism, and more especially the brain, that was the key-element for explaining inter-sexual mental differences. But if so, what about Comte’s alleged commitment to a specific approach to “moral phenomena” and its emphasis on its historical component? What about his acknowledgement that those

phenomena were complex, and therefore accountable for only as the result of a composition of causes? More generally, what about his endorsement of a non-reductionist view of science, and more notably of sociology? In the case at hand, none of this applied. As his last comment on the “scientific” aspect of the question illustrated, Comte took the matter to be straightforwardly biological:

“organic questions must certainly be given prime importance since it is the organism and not the milieu that has made us into men rather than into monkeys or dogs, and it [the organism] even determines our special kind of humanity and circumscribes it to a much greater degree than one is often given to believe” (*Id.*).

This last point unmistakably marked Comte’s inability to operate by the standards he himself set up for the study of “moral phenomena”. Furthermore, it amply vindicated the charge levelled by Mill against Comte that, contrary to what he advocated, he had attempted “to construct the theory of the mind solely on such data as physiology at present affords” (J. S. Mill, *SL*, VI, IV, 2, p. 851). Accordingly, when R. Scharff claims that in the *SL*, “as typically elsewhere, Mill is silent about the social behaviourist side of Comte’s view of mental phenomena” (R. Scharff, *Comte After Positivism*, p. 41), and when L. Clauzade maintains that Mill’s analysis “radically ignores (...) the *a posteriori* mode characteristic of Comtian philosophy” (L. Clauzade, “Auguste Comte et Stuart Mill”, p. 51) in having sociology taking over biology for the explanation of human phenomena, they are wrong: as already seen, it was not that Mill had overlooked these aspects of Comte’s thought; rather, the correspondence made him realize that this was a mere façade with respect to the sexual equality issue. Maybe that was just an “aberration” in Comte’s philosophy, but it was enough for Mill to single him out as one of those who tried to reduce sociology to biology.

This Comtian endeavour came to light when the “logic” of the Method of Residues, that is the proper way of putting it to use, was touched upon. Comte acknowledged its cogency for solving the sexual equality issue but disputed what he called Mill’s “order of partial eliminations” (Comte to Mill, November 14, 1843; in Haac [ed.], p. 207. Comte hold that it should take place

“in the order of decreasing importance, which a first general estimate intuitively assigns to the different identifiable influences. This means that in biological research one must often invert the order of steps which you [Mill] believe to be always preferable, the progression from outside to inside [from the milieu to the organism]” (*Id.*).

What is striking about Comte’s conception of the method of residues was that it revealed his biological *a priori*. Comte held that to function, it necessarily had to assign right from the beginning the appropriate causal weight to the different factors involved

in the production of the phenomenon considered. Accordingly, he took for granted that biological considerations should take precedence. But such a move both prejudged of the weight of that kind of agency and missed one of the uses of the Method of Residues, i.e. the discovery of the respective amount of the effect each cause was responsible of. For what was at stake in the debate between Comte and Mill was not the nature of “the different identifiable influences” (*Id.*), but their respective share in what was obtained. If the very Method of Residues was resorted to, it was indeed because the incomplete knowledge of the various laws involved stopped one from deducing the laws of moral phenomena.

Mill’s reply to Comte shed further light on Comte’s different way of applying the Method of Residues. Contrary to Comte, Mill held the Method of Residues, used experimentally, was first and foremost guided by pragmatic considerations. To be sure, he thought that the “laws of mind” would explain most “moral phenomena”, including inter-individual differences in intellectual faculties. But if everything seemed to hinge on them in Mill’s account, it was only because they were the only laws he thought he could count on. He made clear to Comte that their primacy was epistemic, not ontological:

“It seems to me that one must first eliminate the causes whose effects admits direct evaluation with the most ease and precision: these will be, most often, those which have the greatest real importance, but this may not always be the case” (Mill to Comte, December 8, 1843; *Ibid.*, p. 213).

Given “the rather unsatisfactory state of our biological studies” (Comte to Mill, November 14, 1843; *Ibid.*, p. 207) that Comte himself had diagnosed, and in the light of his criticisms of the unfounded claims of phrenology, Mill was justified in preferring to start his investigations with the little that was already established with respect to “moral” phenomena, namely their dependence on the laws of association. But he also knew that the conclusions thereby reached were merely tentative: for the whole problem was to know whether individual or structural features significantly limited the causal role environment could play in bringing about certain “moral” characteristics.

Consequently, one must not be deceived by Mill’s strategic appeal to the Method of Residues as a manoeuvre not to exclude completely from the explanations of moral phenomena the consideration of biological factors. For when Mill suggested considering first how the different environmental circumstances (education, social position, etc.) contributed to the development of the various types of personality, and then, if certain traits remained unexplained, to set down the residuum to the account of congenital predispositions, he overtly assumed that biological factors played a minor role. But this

was a claim to be adjudicated only case -by-case and with the help of empirical evidence, not to be decided *a priori*. Furthermore, Mill did not seem to be true to the spirit of the Deductive Method when he advocated the use of the Method of Residues. For the gist of the deductive procedure lay in the compounding of all the separate and various causes involved, whose laws had been established beforehand during the Inductive step of the process. And the better the laws of these different causes were known, the more reliable the deductions obtained from them would be. So, instead of relegating the search for physiological determinants to the margin of ethological inquiry, methodological consistency would have expected Mill to support, on a par with the search of environmental determinants and parallel to it, the development of a more accurate biological knowledge. His failure to do so might have resulted from his fear that such knowledge would give ammunition to his opponents.

However, for the time being, the wisest course of action was to investigate the factors which admitted “direct evaluation with the most ease and precision” (Mill to Comte, December 8, 1843; in Haac [ed.], p. 213): in the case at hand, it was certainly easier to assess the amount of influence of the “circumstances” than of the organism, for whereas the latter could be varied (intentionally, just as when one compared different pedagogical methods, or not), the assessment of organic features proved infinitely more difficult. In any case, the procedure Mill suggested was the only capable of adjudicating on experimental grounds the issue of sexual equality. As we have seen, Comte remained deaf to Mill’s proposal: for him, the case was already settled. Women were constitutionally inferior to men with respect to intellectual faculties. At least, that was what he drew from biology.

As I have tried to show in these previous pages, the debate between Comte and Mill on sexual equality did not bear merely on factual questions (was phrenology evidence of women’s intellectual and moral inferiority?) but also broached general methodological problems such as the nature of explanation in the “moral sciences”. In the course of this chapter, we have seen how Mill uncovered Comte’s false sociological commitments with respect to the understanding of moral phenomena, whilst developing an explanatory scheme of his own to account for them. However, the battle was not won for Mill. For, on the one hand, Mill’s conception of the explanation of “moral” phenomena needed to be perfected, most notably by substantiating his claim that environmental factors took precedence in the formation of mental capacities. Hence the

necessity of developing “Ethology”. On the other hand, even if Comte’s biological argument had been refuted, Mill also had to rebut the sociological arguments on which Comte grounded his sexist plea.

<sup>1</sup> See IC1.

<sup>2</sup> See IIC1.

<sup>3</sup> See J. S. Mill, *SL*, III, XII, “Of the Explanation of Laws of Nature”.

<sup>4</sup> See IIB.

<sup>5</sup> Helvétius’ *De l’Esprit* (see n. 61 *supra*) was part of the readings of the young Mill – he even wrote a summary of it in 1822, consisting of a complete abstract of every chapter with comments of his own –; In the Early Draft of the *Autobiography*, he recalled that it was a book that he “greatly admired” (J. S. Mill, *Autobiography*, p. 70).

<sup>6</sup> The facial angle, originated by P. Camper, was a measure of the angle made by the axis of the face with the axis of the skull, which served classificatory purposes in eighteenth-century natural history and became a “tool” for racial distinctions and assessments of intellectual capacities: the greater the angle, the more evolved the race, and the more developed the intellectual powers. On this, see M. Staum, *Labeling People*, Chap. 2, “The Facial Angle, Physiognomy, and Racial Theory”.

<sup>7</sup> F. Wilson traces back the origins of the intuitionist school to Kames, Reid, and the Scottish Common Sense School (F. Wilson, *Psychological Analysis*, Chap. 1).

<sup>8</sup> J. S. Mill, “Sedgwick’s Discourse”, in J. S. Mill, *Essays on Ethics, Religion, and Society*, pp. 31-74..

<sup>9</sup> See IC1.

<sup>10</sup> A. Comte, *PS*, pp. 155-75. This lesson was published in 1839 with the fourth volume of the *Cours*.

<sup>11</sup> See the Fiftieth Lesson of the *Cours* on the “Preliminary Considerations on Social Statics, or General Theory of the Spontaneous Order of Human Societies”.

<sup>12</sup> J.G. Spurzheim, *Observations sur la phrénologie, ou connaissance de l’homme moral et intellectuel fondée sur les fonctions du système nerveux*. Paris: Treuttel & Würtz, 1822.

<sup>13</sup> See J.-F. Braunstein, “Antipsychologisme et philosophie du cerveau chez Auguste Comte.” *Revue internationale de philosophie* 1998, 203, pp. 7-28. (esp. pp. 21-2).

<sup>14</sup> See VC.

<sup>15</sup> R. C. Scharff, *Comte After Positivism*. Cambridge: Cambridge University Press, 1995.

<sup>16</sup> L. Clauzade, “Auguste Comte et Stuart Mill. Les enjeux de la psychologie”, in *Revue d’histoire des sciences humaines*, 2003, 8, pp. 41-56.

<sup>17</sup> In a letter to John Austin dated July 7, 1842, Mill explained that, in the System, “the part relating to Induction is not “more occupied with the mental & social than with the mathematical & physical sciences” because it was more convenient to illustrate inductive methods from those subjects on which the conclusions elicited by them are undisputed” (J. S. Mill, *The Earlier Letters*, p. 527).

<sup>18</sup> I assume that in this quote Mill mistakenly forgot to mention biological factors as relevant explanatory elements.

<sup>19</sup> IIIC

<sup>20</sup> *Id.*

<sup>21</sup> On Mill’s associationist legacy and the way it shaped his environmentalism, see Appendix V.

<sup>22</sup> See T. Heyd, “Mill and Comte on Psychology”, *Journal of the History of the Behavioral Sciences* 1989, 25, pp. 125-138; F. Wilson, “Mill and Comte on the Method of Introspection”, *Journal of the History of the Behavioral Sciences* 1991, 27, pp. 107-29; A. Petit, “Quelle place pour la psychologie dans le positivisme?”, *Revue de synthèse*, 1994, 105:3-4, pp. 393-415; R. Scharff, *Comte After Positivism*, esp. Chap. 1 & 2; and L. Clauzade, “Auguste Comte et Stuart Mill”.

<sup>23</sup> I myself fell prey to the same illusion in V. Guillin, “Théodule Ribot’s Ambiguous Positivism: Philosophical and Epistemological Strategies in the Founding of French Scientific Psychology”, *Journal of the History of the Behavioral Sciences*, 2004, 40, pp. 165-81.

<sup>24</sup> Other relevant texts, besides the First lesson of the *Cours*, are the 1819 letter to Valat mentioned previously in the text and Comte’s 1828 review of Broussais’ *De l’Irritation et de la folie* (in A. Comte, *Early Political Writings*, pp. 228-40).

<sup>25</sup> Consider for instance James Mill’s *Analysis*, a book in which, according to Boring, “associationism (...) reached its climax” (E.G. Boring, *A History of Experimental Psychology*, p. 219). James Mill starts with sensations and ideas as basic psychological elements and combines them according to the different laws of association (association by contiguity in space and time, association by similarity or contrast, etc.) to explain complex mental phenomena such as imagination, abstraction, memory, belief, reflection, or will. The whole activity of the human mind is thus reduced to a mere mechanism. But how can one look into

the machine? How does one observe sensations, ideas, and their association? What is James Mill's method for psychological inquiry? As Ribot rightly points out, "he doesn't say it anywhere, but he almost always proceeds subjectively" (T. Ribot, *La psychologie anglaise contemporaine*, p. 45), that is by way of interior observation: to be a good psychologist, in James Mill's eyes, only requires that one be able to attend with attention to one's own mental activity and analyze it thoroughly by identifying its constituent parts.

<sup>26</sup> Scharff argues that Comte did not primarily targeted introspection as practiced by associationists, as Mill assumed, but a "spurious metaphysical procedure that [he] traces back to the influence of Descartes and medieval theology" (R. Scharff, *Comte After Positivism*, p. 11) and which was rejuvenated by the Eclectic philosopher Victor Cousin and his followers. To put things shortly, Cousin inferred from the inspection of one's consciousness the existence of the thinking substantial Self (the indivisible 'moi') and of extended bodies as causes of one's sensations. These two substances in turn found their own cause in God, the absolute substance, cause of itself. And to these three substances corresponded the three faculties of the human mind, namely Feeling ('la sensibilité'), Will ('la volonté'), and Reason ('la raison'), which enable us to have cognisance, by way of a spontaneous and intuitive apperception, of Beauty, Good, and Truth. Of course, Comte objected to the entire argument and relied on Gall, on comparative biology, and on psychopathology to dispute the simplicity and the immateriality of the Self. Mill was perfectly aware of that, as the correspondence clearly evidences, for he told Comte that if he "did not seem as taken" by what Comte called the "antiontological doctrine of Gall" (Comte to Mill, July 22, 1842; in Haac [ed.], p. 89) it was only "because they were not essentially new to [him], who had so often read and thought about the corresponding sections of [Comte's] *Cours*" (Mill to Comte, July 11, 1842; *Ibid.*, p. 83-4, slightly revised translation). However, Mill did not have to endorse phrenology to refute spiritualism, for his empiricist pedigree had already vaccinated him against substantialist doctrines, as the definition of the mind in the *System* illustrates: "There is a something I call Myself, or, by another form of expression, my mind, which I consider as distinct from these sensations, thoughts, &c.; a something which I conceive to be not the thoughts, but the being that has the thoughts, and which I can conceive as existing for ever in a state of quiescence, without any thoughts at all. But what this being is, though it is myself, I have no knowledge, further than the series of its states of consciousness" (J. S. Mill, *System of Logic*, Book I, Chap. III, Sect. 8, p. 64). On Mill's conception of the self, see A. Hamilton, "Mill, Phenomenalism, and the Self", in J. Skorupski (ed.), *The Cambridge Companion to John Stuart Mill*, pp. 139-75.

<sup>27</sup> J. S. Mill, *Auguste Comte and Positivism*, in J. S. Mill, *Essays on Ethics, Religion and Society*, pp. 296-7.

<sup>28</sup> To the best of my knowledge, none of the commentators have paid attention to the two authors Mill referred to for support in his alleged refutation of Comte: William Hamilton, one of the leaders of the Intuitionist school on whom Mill was writing a scathing criticism at the very same time he worked on the articles which resulted in *Auguste Comte and Positivism*, (see J. S. Mill, *Examination of Sir William Hamilton's Philosophy*, Textual Introduction, pp. lxxi-lxxx), and Jean Jacques Séverin de Cardaillac, an obscure French substitute professor at the Sorbonne between 1824 and 1829, who belonged to the Spiritualist branch of the Idéologues. If Mill really looked for convincing arguments in defence of introspection, he certainly could have found them somewhere else than in the writings of representatives of two philosophical schools for which he had no serious consideration. One may object to my interpretation by arguing that Mill also referred to Association psychology and some of its figures (Hartley, Brown, and James Mill), but he did so to demonstrate that even if the phrenological hypothesis turned out to be true, Comte would still have to rely on introspection to prove the correspondence of a faculty or psychological disposition with a cerebral localization. For "to establish a relation between mental functions and cerebral conformations, requires not only a parallel system of observations applied to each, but (as M. Comte himself, with some inconsistency, acknowledges) an analysis of the mental faculties, des 'diverses facultés élémentaires,' conducted without any reference to the physical conditions, since the proof of the theory would lie in the correspondence between the division of the brain into organs and that of the mind into faculties, each shown by separate evidence. (J. S. Mill, *Auguste Comte and Positivism*, p. 297). In that instance, what was at issue was not the objectivity of introspective psychology (for Mill took it for granted all along), but the viability of phrenology as a science of mental phenomena.

<sup>29</sup> On that issue, see W. Lyons, *The Disappearance of Introspection*. Cambridge: The MIT Press, 1986.

<sup>30</sup> The defence of introspection against Comte's strictures has been a crucial element in the establishment of scientific psychology in the last third of the nineteenth century: part of the story is recounted in V. Guillin, "Théodule Ribot's Ambiguous Positivism".

<sup>31</sup> See IVA.

<sup>32</sup> The article referred to by Mill was James Martineau's "On the Life, Character, and Works of Dr. Priestley", *Monthly Repository* 1833, VII, pp. 19-30, 84-8, 231-41. It had already been mentioned in the *System* in III, XIII, 6, when Mill illustrated the explanatory power of the laws of association. As Mill underlined, he himself pursued this "interesting speculation" and tried to explain through it "the peculiarities of the poetical temperament" (*Ibid.*, p. 481) in his 1833 "Thoughts on Poetry and its Varieties" (J. S. Mill, *Autobiography*, pp. 341-365).

---

<sup>33</sup> J. Fodor, *The Modularity of Mind*, Cambridge: The MIT Press, 1983.

## V – A Never Ending Subjection? Comte, Mill, and the Sociological Argument against Sexual Equality.

Despite Mill's criticisms, Comte never relinquished his belief that biology (and especially phrenology) legitimated women's subjection by demonstrating their intellectual inferiority. Furthermore, notwithstanding his admission that "moral" phenomena resulted from a composition of causes, Comte made no allowance for the kind of multifactorial analysis of mental capacities Mill proposed so as to take into account environmental influences. Now, if there was no more to Comte's sexist stance than the previous set of arguments, my claim that, in the case of women's subjection, Comte infringed his own methodological principles by reducing a sociological question to a biological matter would rest on safe grounds. But Comte had other resources in store that seem to belie my interpretative hypothesis.

It was a characteristic feature of Comte's treatment of the sexual equality issue, in both the *Cours de philosophie positive* and the correspondence with Mill, that it repeatedly underlined the twofold nature of the argument for women's subjection, namely its biological and sociological aspects. The Fiftieth Lesson of the *Cours* explicitly stated that sociology showed the "radical incompatibility of any social existence with this chimerical equality of the sexes" by "supplementing, in its own way, [the] essential scientific assessment" provided by the "sound biological philosophy" developed by Gall and others (A. Comte, *PS*, p. 186). Similarly, Comte's letters to Mill referred to their controversy as their "serious difference of opinion in sociological and biological aspects of the condition and social destiny of women" (Comte to Mill, October 5, 1843; in Haac [ed.], p. 188) or as their "great biologic-sociologic discussion" (Comte to Mill, November 14, 1843; *Ibid.*, p. 206). As for Mill, he readily acknowledged the two-pronged nature of their debate on this "important topic of biology and sociology" (Mill to Comte, August 30, 1843; *Ibid.*, p. 185). What is more, both thinkers took it that the sociological argument was independent from its biological counterpart. This was what Mill wanted to convey when, stating that he would "lay aside considerations of anatomy", he realized that "quite apart from any such considerations, [Comte] believ[ed] that precise analysis of general experience, both everyday and historical, [was] sufficient to establish [his] conclusions" (Mill to Comte, October 30, 1843; *Ibid.*, p. 199). And

although he scolded Mill for discarding what he regarded as relevant data, Comte agreed to broach the “sociological argument, separately considered” (Comte to Mill, November 14, 1843; *Ibid.*, p. 209).

Now, if Comte really had an independent sociological argument to prove his case for the subjection of women, the charge of biological reductionism levelled at him would founder. By the same token, the view of Comte as the forefather of an autonomous sociology would regain some of its plausibility, even if the previous chapter has shown that when pressed by Mill to recognize the possible influence of “circumstances” on the formation of mental capacities, Comte asserted the primacy of biological factors. For if a genuine sociological argument for women’s subjection can indeed be found in Comte, it is enough – at least logically – to salvage the consistency of his methodological plea for the autonomy of sociology with his actual treatment of the sexual equality issue from the uncompromisingly biological perspective Comte tried to impose on Mill. Undoubtedly, the possibility of such an “argumentative recovery” would appeal to anybody eager to preserve the systematicity Comte upheld as one of the main virtues of his “Positive Philosophy”. However, I will argue that a minute analysis of his writings on the topic dispels the illusory coherence of Comtian thought.

As I will try to demonstrate in this chapter, none of the versions of the sociological argument for the subjection of women put forward by Comte can stand without appealing to some more or less implicit biological assumptions. More precisely, neither the “static” argument, which relies on phrenology to establish that women’s innate mental capacities do not allow them to be treated as men’s equals, nor the “dynamic” argument, which is based on a biologically-inspired developmental scheme that legitimates the continuation of the subjection of women by referring to the history of the relations between the sexes, can qualify as sociological arguments. In my analysis, I will emphasize the extent to which Mill’s call for the development of “ethology” and his conception of sociological explanation shed light on the biologically-driven nature of Comte’s sociological arguments against sexual equality. Furthermore, the review of Mill’s objections to Comte reveals how the correspondence with the French philosopher paved the way for some of the arguments later developed in Mill’s *Subjection of Women*.

I start this chapter by assessing Mill’s qualified appraisal of Comte’s contributions to sociology (VA). After having introduced Comte’s static argument

for the subjection of women and Mill's criticisms of it (VB), I show how it belies Comte's plea for an autonomous sociology (VC). Following the same mode of presentation for Comte's dynamic argument, I first provide a general introduction to Comte's conception of the historical method typical of sociology and how it applies in the case of women's subjection (VD) and then uncover to what extent a biological inspiration suffuses Comte's treatment of the problem at hand (VE).

#### **A – “Method” and “Doctrine”: Mill’s Qualified Appraisal of Comte’s Contributions to Sociology.**

As shown in Chapter I, Mill regarded Comte's “scientificisation of politics” as a perspective relevant to his own concern for a sound conception of reform. His desire to arrive at a clearer conception of the nature of social theory, social practice and of the relations between the two may partly explain his decision to approach Comte directly<sup>1</sup>. Furthermore, Mill stated explicitly in many of his writings the importance of Comte's contribution to sociology, even if the somewhat bitter termination of their correspondence, the later authoritarian and religious developments of Comte's thought, and the passing of the years had tended to render Mill's tribute less vibrant<sup>2</sup>. However, and despite his belief that Comte's works marked a watershed in the advancement of social science, Mill was careful to underline that not all elements of Comte's sociology were of equal value.

The first edition of the *System of Logic* is the primary source from which to draw a more precise idea of what Mill praised and what he criticised in Comte's sociology<sup>3</sup>. The part of the *System* that most clearly bore the imprint of Comte's influence was the Sixth Book “On the Logic of the Moral Sciences”, which Mill redrafted after having read the sixth volume of the *Cours*<sup>4</sup>. Its ninth and tenth chapters (“Of the Physical, or Concrete Deductive Method” and “Of the Inverse Deductive, or Historical Method”) proposed a highly appreciative account of some aspects of Comte's sociological thought. Mill celebrated Comte as the

“greatest living authority on scientific methods in general, and the only philosopher who, with a competent knowledge of those methods, has attempted to characterize the Method of Sociology” (J. S. Mill, *SL*, VI, IX, 1, p. 897).

What particularly struck Mill in Comte's methodological characterization of sociology was his distinction between social statics and social dynamics. Whereas social statics studied the synchronous interactions of the various elements (state of

civilization, institutions, mores, laws, customs) constitutive of social phenomena - what Mill called "states of society" – and attempted to arrive at the formulation of the laws of coexistence linking these different elements, social dynamics aimed at the establishment of the laws of succession linking "states of society". Mill also stressed the importance of taking into account the social *consensus* existing between the different components (state of civilization, institutions, mores, laws, customs) of "states of society" and illustrated his point with a quotation made out of four pages of the Forty-Eight Lesson of the *Cours*. But what impressed Mill most was Comte's conception of social dynamics. Yet, even if he did not spare his praises, Mill made clear that whereas he was at one with Comte on "method" (especially on the method – the "Inverse Deductive Method", as Mill called it - for verifying the accuracy of the historical generalizations, to which we I will turn in the last section of this chapter), he was more circumspect about "doctrines", that is about the content of some of the general conclusions Comte issued as to the course of the evolution of mankind. Accordingly, he summarized the essentials of the law of the three states and commended its breadth and richness as a tool for interpreting the historical development of the human mind, but nonetheless remained guarded about others general pronouncements issued by Comte:

"It is not here that a critical examination can be undertaken of the results of [Comte's] labours; which besides are as yet, comparatively speaking only in their commencement. But his works are the only source to which the reader can resort for practical exemplification of the study of social phenomena on the true principles of the Historical Method. Of that method I do not hesitate to pronounce them a model: what is the value of his conclusions is another question, and one on which this is not the place to decide" (*Ibid.*, VI, X, 8, p. 928).

These quotations show that although Mill thought Comte was right about the method appropriate to social dynamics and that some of his "doctrinal" conclusions (most notably the law of the three states) were likely to be accurate, he nevertheless suggested that it was not true of all his historical generalizations and that, accordingly, the practical measures Comte derived from them were to be treated with circumspection. As we will see shortly, this was exactly what Mill's remarks in his exchange with Comte suggested as well. But even if it was due to the correspondence to state these points fully, but the attentive reader of the *System* had already been warned that Comte's conceptions were not entirely free from shortcomings.

It seems that his reading of the *System* did not help Comte realize Mill's reservations about some aspects of his sociology. Or if he did, he did not feel the need to dwell on them:

"it is not in my power to thank you sufficiently, at least today, for having so generously seen to it that, every time the occasion presented itself, I received the full philosophic appreciation which you considered my due" (Comte to Mill, May 16, 1843; in Haac [ed.], pp. 153-4).

But, as already noticed in II, the following letters progressively introduced Comte to what Mill considered possible sources of disagreements, especially the question of women's subjection as one. Mill was at pains to underline that he subscribed to Comte's presentation of "the general laws of social dynamics and of the historical development of humanity" (Mill to Comte, June 15, 1843; *Ibid.*, p.165). But he stressed that, with respect to the sensitive topics of marriage, divorce, and sexual inequality, his concerns lay in "the doctrines of static sociology" (*Id.*) advocated by Comte, something glossed over in the *System*. A few letters later, when Mill had realized that Comte would remain deaf to his objections, he eventually summarized where he stood regarding the present state of sociology and the support one could expect from it to adjudicate as difficult an issue as that of sexual equality:

"You have definitively established social dynamics, and no emancipated mind sufficiently acquainted with positive thought can fail to recognize in your great law of human development and its various corollaries a true explanation of the social past and the prophesy of an indefinite future. What matters now is to bring social statics to the level of social dynamics, for as you rightly say, without this it cannot be sufficiently rational and especially it cannot counter the present anarchy in social theory" (Mill to Comte, December 8, 1843; *Ibid.*, p. 213).

Comte partly agreed with Mill: social statics still had to be exposed as fully as social dynamics had been in the *Cours de philosophie positive*. This was to be the purpose of the *Traité de politique positive* Comte had planned to write after the completion of the *Cours*. But he vigorously denied that social statics as it presently existed was unable to solve practical problems such as that of the subjection of women:

"However, although the positive formulation of [social dynamics] is far more developed today and, at the same time, is fortunately by far the more urgent, I believe that it is presently possible to demonstrate the main basis of static sociology" (Comte to Mill, November 14, 1843; *Ibid.*, p. 206 [slightly modified translation]).

Obviously, Comte ignored Mill's criticisms. As we will see in the next section, neither Mill's claim that the facts Comte adduced in support of his static

analysis of women's necessary mental inferiority were either inaccurate or irrelevant, nor his methodological objection that social statics could not be fully established independently of ethology received any consideration from Comte. But in any case, Mill had made clear what he endorsed and what he rejected in Comte's general conception of sociology: dynamics was methodologically sound, had reached interesting conclusions, and could be easily perfected; but social statics had to be built from scratch.

### **B – The Static Argument for Women's Subjection.**

Mill's recurring concerns about the soundness of the sociological argument for women's subjection convinced Comte that their disagreement was more deep-seated than he first thought. Moreover, the fact that his addressee's opposition contrasted so radically with what he took to be his general endorsement of the most basic tenets of positive philosophy gave rise to a certain resentment in Comte. Even if he still predicted that agreement could be reached, pessimism as to the likeliness and proximity of Mill's complete conversion progressively took over. Their preceding exchange, Comte sadly recorded,

"shows how difficult adequate agreement today has become even among thinkers of the elite who, apart from natural sympathy already share a logical understanding as fundamental as ours and who, in spite of this, arrive at different conclusions, at least for the moment, concerning one of the most basic issues sociology can present, the main elemental base, in truth, of any social hierarchy. Such a spectacle might even be enough to inspire a kind of philosophic despair because, just as religious minds claim, it may be ultimately impossible to constitute true intellectual agreement on purely rational grounds" (Comte to Mill, October 5, 1843; *Ibid.*, p. 188).

This gave the correspondence a new turn and prompted Comte to deliver in his following letters the most comprehensive account he had written on the subject of sexual equality so far, except for the related developments in the *Cours*.

As I have argued in IC1, Comte's case for the subjection of women can be conceived as a functionalist argument whose minor premise was supposed to establish that women were deprived of the specific character traits which would enable them to compete with men for intellectual and organizational tasks. For, if such inferiority existed, it followed that the existing sexual hierarchy was legitimate. As I have also shown in Chapters II and III, Comte undoubtedly believed that biology (and especially phrenology) provided empirical back up for that claim. As he warned Mill,

“you do not attach enough importance to the true consequence of [women’s] inborn inferiority” (*Ibid.*, p. 189).

In the light of Mill’s legitimate refusal to accept any of the biological arguments adduced by Comte, one may be tempted, so as to give Comte’s claim that he had an independent sociological argument for women’s subjection a chance, to modify his functionalist argument by removing from it any reference to the cause or origin of women’s character traits. One then ends up with a weaker argument for subjection, in the sense that it relies only on the assessment of women’s mental capacities as they existed in the social settings coeval with Comte and Mill, and therefore license subjection only for those settings (because it is not assumed that a change in social setting could not induce a change in mental capacities, as the functionalist argument based on biology had it). Such a transformation provides Comte’s argument with a “sociological” basis (broadly construed) independent of biology. Moreover, it is in line with Mill’s contention that Comte believed that “precise analysis of general experience, both everyday and historical, [was] sufficient to establish [his] conclusions” (Mill to Comte, October 30, 1843; *Ibid.*, p. 199). Finally, it fits Mill’s own conception of sociological explanation, since he argued in the *System of Logic* that

“Supposing (...) the laws of human actions and feelings to be sufficiently known, there is no extraordinary difficulty in determining from those laws, the nature of the social effects which any given cause tends to produce” (J. S. Mill, *SL*, VI, IX, 1, p. 896).

So, let us interpret the following quote by Comte in that way, that is by severing it from its biological context and limiting its scope to the existing social setting:

“[Women’s] characteristic ineptitude in abstraction and intellectual argument [and] their almost total inability to eliminate the inspiration of passion from logical reasoning must continue to deny them indefinitely any elevated position in the immediate direction of human affairs” (Comte to Mill, October 5, 1843; in Haac [ed.], p. 189).

In accordance with his tripartite distinction between intellectual, affective, and practical faculties, Comte maintained that women were inferior to men with respect to the first and the third. Neither were they able to display the logical and methodical capacities required in science, philosophy, the arts or industry, nor were they capable of running any kind of commercial or industrial venture, or command

a military operation. Comte went so far as to claim that women were “all the more incapable of government, even in the home, but can handle only lower level administrative tasks” (*Id.*). On the other hand, the sympathetic part of their affective faculties (that is the one responsible for altruistic inclinations) and their ability to deal with details being superior to that of men, women could compensate for the selfish bias and abstract nature typical of men’s decisions:

“Their role is essentially one of consultation and suggestion [to modify a plan] in places where a passive position permits them to put their characteristic sagacity and interest in momentary detail to best use” (*Id.*).

This brief overview was all Comte felt compelled to provide, and this was in fact a mere rehash of the developments on sexual equality already broached in the Fiftieth Lesson of the *Cours*<sup>5</sup>. Now, one might have expected that a sociological argument, even in its “static” version, would have taken a somewhat more refined form, but the weak version of Comte’s functionalist argument for the subjection of women only required that he be able to show how the present capacities of women explained (and justified) their condition. In that respect, the rough-and-ready generalizations Comte invoked were enough, if true and well founded. In defense of their warrant Comte made clear that his observations were empirically grounded, or at least grounded on a certain kind of personal experience. As he curiously put it to Mill,

“I have been able to observe the feminine organism from very close, even in several outstanding exceptions. I could, incidentally, refer here also to my own wife who, while she fortunately has written nothing, at least so far, really possesses more intellectual strength, more depth and, at the same time, more good judgment than most so justly praised members of her sex” (*Id.*)<sup>6</sup>.

What he concluded from that experience was simple: regarding practical capacities, in “no domain [were women] fit to direct or execute” (*Ibid.*, p. 189-90); as for intellectual capacities, Comte arrived at the verdict that “a very insufficient ability to generalize relationships, to make consistent deductions, also to give reason precedence over passion” (*Ibid.*, p. 190) were some of the characteristic traits of the “feminine” type; with respect to affective capacities, “women [were] naturally destined to be domestic auxiliaries of spiritual forces, by sustaining with sentiment the practical influence of [male] intelligence and to modify morally the natural reign of material force” (*Id.*).

Mill's tried to accommodate as much as possible Comte's touchiness but nonetheless demonstrated either that the generalisations made about women's mental capacities by Comte were not accurate or that they were not inconsistent with female emancipation. What is striking is that Mill did not choose to challenge Comte on the present intellectual qualities of women, because he recognized, in accordance with his professed environmentalism, that "nothing in their education [was] organized to develop" the "aptitude for continuous and prolonged intellectual work", "while for men, the study of science and even of dead languages, certainly tend[ed] to do just that" (Mill to Comte, August 30, 1843; *Ibid.*, pp. 183-4). On the other hand, he strenuously denied Comte's assertions on the lack of practical abilities of women. He argued that women, because their domestic existence forced them to pay attention to a multifarious range of details, had "wider interests" (*Ibid.*, p. 184) and a less narrow intelligence. Furthermore, Mill adamantly objected to Comte's refusal to grant women any managerial skills and claimed that their day-to-day running of the household demonstrated their organizational abilities (Mill to Comte, October 30, 1843; *Ibid.*, p. 200). He added that, to the extent that women had been involved in the management of industrial establishment – he acknowledged those had been mostly of very modest size –, there was "no record of their handling the task less well than men" (*Id.*)<sup>7</sup>.

As to perseverance understood as "the ability to stick to a specific project or given plan until it has been put to a test" (*Id.*), Mill contended that "in matters of importance, one [did] not find as much patience and forbearance anywhere than among women" (*Ibid.*, p. 200-1), suggesting that since women could not get the better of men by opposing them, they generally tried to win their approval by a long drawn out sap-digging and, if unsuccessful, had to resign themselves. In the same vein, Mill underlined that, contrary to what Comte maintained, the actual situation of women led them "to assign a priority to reason over passion" (*Ibid.*, p. 201) to the extent that they were not allowed to fulfil their impulses and desires, for

"giving up what they desire is the common rule of life for them, while for masculine heads of family, such sacrifices occur except on special occasions" (*Id.*).

Eventually, Mill claimed that if the preponderance of reason over desire was "proportional to the habit of self-examination, of being aware of one's character

and faults" (*Id.*), men were no better than women since that disposition was as exceptional in both sexes, although "general opinion grant[ed] women a consciousness more scrupulous than that of men. Now what is conscience if not the submission of passion to reason?" (*Id.*).

What was exactly Mill's strategy when he attempted to qualify Comte's claims regarding women's capacities? One may suggest that when Mill argued for their efficiency in managerial matters and the virtues they presently exhibited, he wanted to convince Comte that the emancipation of women and their participation in activities so far restricted to men could be socially beneficial. In other words, Mill did not sing the praises of domestic existence for its own sake but for the advantages they could bring if applied to occupations outside the home. As we will see in Chapter VII, this very argument would be put to good use by Mill in his later *Subjection of Women*<sup>8</sup>.

The second aspect of Mill's criticism bore on Comte's account of women's affective capacities. For Mill did not believe that the greater development of sympathy in women was genuinely a moral feature, since he held to be just "an egoism extended to several persons" (Mill to Comte, August 30, 1843; *Ibid.*, p. 184), that is a concern restricted to one's circle of relatives<sup>9</sup>. Furthermore, Mill questioned one of the assumptions made by Comte in the *Cours* according to which true sympathy could coexist with subordination<sup>10</sup>:

"Without any empty sentimentality, I find that the affection a person of a somewhat elevated nature may feel for another being who is subject to his authority is always somewhat imperfect, acceptable only because one cannot feel more complete sympathy for another" (Mill to Comte, July 13, 1843; *Ibid.*, p. 174).

Of course, this implied that marriage could be considered as a situation favouring true sympathy if and only if it was conceived as a relation between equals<sup>11</sup>. The appeal to "elevated natures", which echoed the "higher natures" of the unpublished 1832-1833 piece "On marriage"<sup>12</sup>, signified that this new standard of morality should alter deeply the nature of human, and especially domestic, arrangements, since it presupposed that all agents, male or female, had the same ethical standing and could expect that their rights as moral subjects to be respected within the marital relation. But if women had to be treated as moral subjects on par with men, one could not ignore their feelings and desires:

"here is a matter where I do not believe I can be wrong: to decide this type of question, philosophy needs the experience of women as much as that of men" (*Id.*).

Clearly, this approach radically contrasted with Comte's personal manner of broaching the question and his dependence on *his* own experience. Mill called for the experience of women because, in the utilitarian scheme he applied to moral matters, the individual was always the main source of information about her needs, desires, and interests. So, if one was after the "greatest happiness of the greatest number", women included, one would better lend one's ear to what they had to say. As Mill concluded,

"the influence on the intimate and moral life of one living in a kind of dependency cannot be decided solely according to the ideas and the experience of those superior" (*Ibid.*, pp. 174-5).

Now, Mill was also aware that such an experience, that of self-aware and autonomous individuals, was not the common share of a majority of women, who still lived in a partial or complete state of subjection. Drawing on what he had discussed with Harriet Taylor ten years before<sup>13</sup>, he recognized that such an "experience" was not available, mainly because of the social conditioning proper to women:

"It was only the day before yesterday that women began to think, only yesterday when they began to express their thoughts, and, what matters still more, their life experience[s]. Most women who write do so for men, or at least in fear of their disapproval, and their testimony is no more to be trusted than that of the very small number of those who are in a state of open rebellion" (*Ibid.*, p. 174).

In a later letter (Mill to Comte, October 30, 1843; *Ibid.*, pp. 199), Mill suggested that this conditioning of women rendered the analysis of their capacities a tricky question, for the fact that their present subjection only required from them a very limited range of behaviours (mainly that of daughters, wives, and mothers) prevented the displaying of other dispositions that they may have had but that were not called for by the circumstances. This predicament seriously compromised the emphasis Comte put on the generalizations about women's capacities to back up his plea for female subjection. As Mill repeatedly pointed out in the correspondence, and despite Comte's confidence, social statics was not yet a securely established subfield of sociology: as Mill's objections revealed, many of the claims made by Comte about women were far from being immune to criticism.

Moreover, as Mill hinted at when dealing with the consequences of social conditioning, the methodology itself of social statics was not without serious shortcomings. To this last point, I will now turn.

### C – The Shortcomings of the Static Argument.

As seen above, even though he agreed with Mill that social statics was not as fully developed as social dynamics, Comte claimed that it was nonetheless able to provide guidance on practical issues such as women's subjection. In the light of Mill's objections, one might have expected Comte to have lost some of his confidence in his claims. But Comte's conviction that he was right seemed unshakeable despite Mill's arguments.

Moreover, it is in fact very unlikely that Comte himself would have accepted the terms in which I have rephrased his argument in order to render it compatible with his plea for an autonomous sociology. For, as already pointed out, the revised version of the static functionalist argument only licensed subjection on account of the existing mental capacities of women: it considered women as they were in a given social setting and justified their condition by the dispositions they exhibited in that very setting. But since it did not mention the origin of these dispositions, the argument could not extend further, for it might have been the case, as Mill believed, that a different social setting would tend to develop in women the dispositions they were so far lacking, and would have therefore legitimated their emancipation. Or it might have also been the case that a change in social setting would have prompted a change in the organizational structure of society and, for instance, ended the discrimination against women with reference to their capacities. In short, the scope of the weak version of the static argument was excessively limited: it merely justified subjection "here and now".

Surely, Comte wanted to prove much more than that, since he explicitly told Mill his position was that

"the subjection of women in society will necessarily last indefinitely, even though made to coincide more and more with the universal type of behaviour, because it is directly based on a natural inferiority which nothing can undo" (Comte to Mill, October 5, 1843; *Ibid.*, p. 191).

What he needed was both a demonstration that women's capacities would remain the same whatever changes would occur in their environment and a demonstration that the grounds on which women's subjection had been justified would not be

altered by a modification in the organizational structure of society. Only if these two conditions were fulfilled could the permanence of women's subjection be assured. But neither proposition followed from the weak version of the static argument.

Once the exact content of Comte's position is clarified and the inability of the weak version of the static argument to deliver what it requires is outlined, Comte's uncompromising reliance on phrenology can be grasped more easily: because phrenology held mental capacities to be innate and unchangeable beyond a certain limit, it provided Comte for his missing premise according to which nothing could modify the mental make-up of women. In short, Comte's case for women's subjection did not hold if the weak version of the static argument was not supplemented by phrenological data.

This explains why phrenology filtered in some of Comte's sociological developments. For instance, in the extracts I have quoted from the Fiftieth Lesson of the *Cours*<sup>14</sup>, I deliberately bracketed Comte's reference to phrenology so as to give his claim that he had an independent sociological argument a chance. Yet, as a matter of fact, Comte openly declared in those that his "perfunctory appraisal of the social attributes of each sex" was to be "essentially linked to the noblest properties of our cerebral nature" (A. Comte, *PS*, p. 187). In the same vein, he argued that any change in the structure of the family (and most notably in the way women were subjected to their male relatives) would presuppose a "chimerical transformation of our cerebral nature" (*Ibid.*, p. 186).

The problem with this line of argument, besides the fact that it rested on very dubious empirical assumptions as Mill demonstrated with reference to phrenology<sup>15</sup>, was that it clearly evidenced that at least in one case – that of sexual equality - Comte plainly belied his advocacy of the autonomy of sociology. For phrenology, understood as the "general study of intellectual and moral phenomena", was by Comte's own admission part of biology, even if its most "transcendent" (*Ibid.*, p. 157) offshoot. So, it was not only that the static argument adduced by Comte failed to prove what he was after. It was also the case that, in its very structure, the argument infringed Comte's own methodological principles<sup>16</sup>.

However, one may nonetheless stand for Comte by arguing that my reading of his argument for the autonomy of sociology cannot be sustained because it downplays another essential component of his philosophy of science,

namely his encyclopaedic scale of the sciences. As seen previously<sup>17</sup>, Comte also developed an account of the dependence of sociology on biology that does not allow one to conceive the distinction between the two sciences in terms of a sharp break. In particular, Comte argued that there existed a “primitive” dependence of social statics on biology, in the sense that phrenology accounted for “human sociability and the various organic conditions which determine its specific character” (*Id.*), that is for the condition of possibility of social phenomena. In that respect, it might be argued that my interpretation is not faithful to Comte’s ideas, to the extent that he regarded as perfectly legitimate, and even as necessary, the use of some biological data in sociology. Accordingly, the contradiction I have spotted between Comte’s general methodological pronouncements and his actual sociological practice would in fact merely result from an inadequate understanding of Comte’s writings.

On the contrary, I argue that it is because my interpretation does not depart from Comte’s conception of the relations between biology and sociology that it is able to demonstrate how his sociological practice belies his methodology. For it has to be remembered that Comte also underlined that, if it was indeed the case that phrenology informed us on which human capacities made social existence possible, it did not determine on its own the actual details of social organization. What was needed to grasp fully the laws of sociological phenomena was the consideration of mankind’s experience and of the various forms it had taken throughout history. Comte especially underlined that to overlook that historical dimension of social phenomena would result in considering “as inherent in man’s fundamental nature, and consequently as indestructible, temporary social modifications characteristic of a specific state of human development” (*Ibid.*, p. 160), as Gall’s belief in the immutability of the warlike tendencies of mankind illustrated<sup>18</sup>. Comte warned that “the vicious preponderance of biological considerations and the irrational contempt for historical notions” led to the misunderstanding of “true social evolution” and to the unsupported ascription of “a chimerical fixity to dispositions which are essentially variable” (*Id.*). But was not it the case that Comte did exactly that in the case of sexual inequality? When he argued that it was possible to “demonstrate the main basis of static sociology” (Comte to Mill, November 14, 1843; *Ibid.*, p. 206 [slightly modified translation]), Comte was in fact suggesting that the subjection of women was a closed case

because he thought phrenology alone was allegedly able to prove that women's mental capacities would not change, thereby falling prey to the same kind of "vicious preponderance of biological considerations" he denounced in Gall.

As it now appears, in the case of women's subjection, Comte overstepped the limits he set on the use of phrenology in social statics by trying to solve a socio-historical problem with the sole resources of biology. Comte unduly assumed that women's mental capacities were innate and therefore would not change, although Mill rightly underlined that such an assumption would remain unfounded as long as the hypothesis of an environmental account of character traits had not been refuted. Hence Mill's call for the development of ethology. What is striking here is that, as already noted, Comte dismissed from the outset Mill's idea of accounting for moral phenomena by way of composition of causes whereas this proposal could have been accommodated within his own methodological framework. Surely, as Mill also acknowledged, Comte was right in maintaining that sociological explanations should refer, one way or another, to the biological properties of human beings. But his own use of biological data was flawed: firstly, because the claims of phrenology he endorsed were not corroborated; secondly, because biology took precedence over sociology and left no room for other factors to appear in sociological explanations. But if the static argument did not hold, what about the dynamic argument for the subjection of women?

#### **D – The Dynamic Argument for Subjection.**

Unlike social statics, social dynamics did seem to constitute a common ground on which Comte and Mill mostly agreed. As shown earlier<sup>19</sup>, Mill praised Comte's methodological conceptions with respect to social dynamics and acknowledged that some of the "doctrinal" conclusions he had reached were likely to be accurate. However, Mill also had serious reservations about some of Comte's historical analyses, and most notably about the condition of women.

#### **1 – The Basics of Social Dynamics.**

As Comte defined it in the Forty-Eighth Lesson of the *Cours*,

"The true general spirit of social dynamics consists in conceiving each of these consecutive social states as the necessary result of the preceding one and the indispensable driving force behind the following one (...). In this

view, the object of science is to discover the constant laws which govern this continuity, and the aggregate of which determines the necessary course of human development" (A. Comte, *PS*, p. 123).

Comte insisted on the intrinsically historical nature of social dynamics as what marked out sociology from biology:

"Only it can definitively provide the new science as a whole with its most distinctive philosophical character, by making the notion that distinguishes most sociology from mere biology prevail, that is the master-thought ("idée mère" in French) of a continuous progress, or rather of the gradual development of humanity" (*Id.*).

One striking feature of Comte's account was the primary role it ascribed to the development of the mind in its explanation of the historical evolution of mankind. For Comte held that "ideas rule and change the world" (A. Comte, *PP*, p. 38), that is that the transformations occurring at the levels of institutions, mores, laws, or customs were the results of the transformations affecting our conceptions of the world and of our place in it. This view led him to distinguish the different epochs of mankind's history with reference to the dominant mode of thinking by which they were characterized and to present human evolution as marked by a gradual transition from a theological state (in which phenomena were explained by non-natural causes), through a metaphysical state (which resorted to abstractions to account for phenomena), to a positive state (in which the mind searched for the laws of succession and coexistence of phenomena). This was Comte's famous "law of the three states", which Mill considered as a highly powerful interpretative framework. In particular, Mill was at one with Comte in singling out "the state of the speculative faculties of mankind; including the nature of the speculative beliefs which by any means they have arrived at, concerning themselves and the world by which they are surrounded" as the "one social element which is (...) predominant, and almost paramount, among the agents of social progression" (J. S. Mill, *SL*, VI, X, 7, p. 926).

What is interesting about Comte's intellectualistic conception of social dynamics and its emphasis on mind development as an historical index is that it deliberately interpreted human evolution in terms of the development of human capacities. That is, the fact that the products of the mind (such as proverbs and maxims, scientific theories, religious beliefs, political ideas, artworks, and their multifarious concrete translations in the real world) evolved through time

presupposed a similar evolution in the capacities of the mind itself. This assumption led Comte to conceive dynamic sociology as

“the successive appraisal of the various states of humanity which shows, in the light of all the historical facts, the continuous reinforcement of any given disposition, either physical, intellectual, moral or political, and the indefinite waning of the opposite disposition” (A. Comte, *PS*, p. 151).

Comte added, and that was the point where the science of society made contact with the art of politics, that this appraisal would result “in the scientific prevision of the final predominance of the former disposition and the definitive fall of the latter” (*Id.*). Now, these two features – the focus on capacities and the ability to predict the way they were to evolve – were obviously at the heart of the debate on sexual equality. Accordingly, one might assume that what Comte was expecting from the dynamic argument was evidence both for the unchangeability of women’s capacities (and especially of their intellectual capacities) and the permanence of the social structure justifying their subjection. Without that, his whole argument for women’s subjection would collapse.

A last general point about social dynamics is worth mentioning since it illustrates well the extent to which the sexual equality created a tension in Comtian thought. For when it came to describe the general trend characteristic of human evolution, Comte claimed that it amounted to

“furthering our most eminent faculties (...) either by constantly reducing the empire of physical appetites and by stimulating more the various social instincts, or by continuously sustaining the development of the intellectual functions, even the highest, and by spontaneously increasing the customary influence of reason on man’s conduct” (*Ibid.*, p. 204)<sup>20</sup>.

But if so, would it not be strange that women, who were after all members of humanity, did not partake in this general movement, especially with respect to the development of their intellectual faculties? What could explain such a difference between the sexes?

## 2 – What History Tells Us.

Comte introduced his dynamic argument for women’s subjection when he realized that his disagreement with Mill over sexual equality was much more serious than he had first thought. In a letter dated July 16, 1843, which provided an overview of his arguments, Comte invoked biology and then turned to sociology:

“From a completely sociological point of view, modern life, characterized by industrial activity and positive spirit, must develop with no lesser finality, though differently, [concerning] these fundamental differences [between the sexes], than the military and theological life of the peoples in years gone by” (Comte to Mill, July 16, 1843; in Haac [ed.], p. 180).

Unless one is conversant with Comte’s *Cours de philosophie positive*, it is difficult to see clearly how what Comte says here support his case. So, in order to clarify the gist of his argument, let us consider again the two propositions which needed to be fulfilled for Comte’s plea for women’s subjection to hold. On the one hand, Comte needed to show that women’s capacities (and especially their intellectual capacities) would not change. On the other hand, he needed evidence of the permanence of the social structure justifying their subjection. It was this second premise that the above quotation was supposed to support. In other words, Comte maintained that the historical record of mankind indicated that the subjection of women had been a constant feature of social life and, therefore, that it would remain so in the future. However, in the correspondence, Comte provided no detailed demonstration for this claim. But such an attentive reader as Mill could not have failed to notice the various developments on the subject with which Comte punctuated the historical lessons of the *Cours*. Hence the usefulness of a review of Comte’s long-term history of the relations between the sexes.

Whilst Comte readily acknowledged that the family had undergone several substantial modifications in its constitution during the course of history (the transition from polygamy to monogamy; from the extended family including the servants to the nuclear couple and its children), he nonetheless argued that it had always been structured according to “two fundamental orders of necessary relations, namely the subordination of the sexes, which constitutes the family, and that of the ages, which maintains it” (A. Comte, *PS*, p. 184). As to the first, Comte claimed that women’s subjection had become more and more pronounced with human development, which in his view proved its lasting predominance as a social trend. This argument was part and parcel of Comte’s progressive conception of history to the extent that, since it had been observed that women had become more and more subordinate and since Comte considered the general course of history to be progressive, subordination was also progressive.

According to Comte, the whole historical record of mankind testified to the growing intimacy of the relations between spouses, the strengthening of the moral authority of the husband, and the progressive confinement of women to the

domestic sphere. It was during the theological state that the first major breakthrough in the history of the relation of the sexes had taken place:

“It was under the reign of Polytheism that humanity irrevocably rose to a true monogamistic life” (*Ibid.*, p. 300).

This move changed the status of the inter-sexual relation from that of a purely organic appetite to that of a genuine social need. Whereas women had so far been considered as mere instruments of male pleasure, they came to be regarded more as companions, even if of an inferior kind. Comte added that polygamy (as practiced by the polytheistic-theocratic Egyptians) had also contributed in its way to the improvement of women’s condition to the extent that it exempted (some of) them from hard toil:

“their customary reclusion, which was indeed a necessary consequence of polygamy, already constituted in reality a first general tribute and an involuntary token of consideration, for it tended to grant them a position in the elementary order of society which was more and more compatible with their true characteristic nature” (*Ibid.*, p. 304).

Comte held the progressive spread of monogamy and the development of domestic life as signs of the “gradual improvement” of marriage, which he argued amounted to “developing the nature proper to each sex for the common benefit of mankind” (*Ibid.*, p. 300).

However, Comte also underlined that, as long as the domination of men over women remained based on “primordial brutality”, that is physical strength, woman’s true social role was also not yet properly understood, as “the political importance of women” under Polytheism illustrated. In this instance, Comte referred to “the constant though secondary participation of women in sacerdotal authority, which was directly granted to them under Polytheism, and irrevocably taken from them by monotheism” (*Id.*). The historical fact of women’s involvement in the running of public affairs (for “sacerdotal authority” referred both to religious and political responsibilities) undoubtedly faced Comte with a serious problem: if it had been the case that women had once been associated to these activities, his account of an enduring exclusion of women from the public sphere was threatened. Moreover, the historical existence of “women priests” indicated that they were not completely deprived of intellectual abilities. Comte’s rejoinder was somewhat convoluted, since he did not challenge the claim of women’s public involvement, but argued that it was no proof that this situation benefited them<sup>21</sup>.

Moreover, Comte seemed to suggest that in these early stages of human history, the intellectual differences between men and women were not marked out so as to give rise to a proper sexual division of labour. In other words, the fact that women of past ages had been involved in the managing of public matters was no sign of an intellectual equality with men, since in those times the simplicity of the problems fitted their capacities :

“Civilization essentially develops all the intellectual and moral differences, those between the sexes as well as all the others, so that this female priesthood characteristic of polytheism does not constitute a more favourable presumption of the corresponding condition of women than the one that might be induced from the almost contemporary existence of huntresses and women warriors, which was too common in such a social age to be completely mythical, how strange it might now seem” (*Id.*).

The next major step in the history of the relations of the sexes was, according to Comte, the development of domestic morals under the influence of Catholicism. Whereas Polytheism focused on personal morality (by praising the virtues of the individual) and public morality (by stressing the ethical importance of citizenship), Catholicism had given its proper place to the private sphere and, especially to family. By establishing marriage as a sacred institution and by enforcing its indissolubility, it had given to spouses “the sense of their duties to each other”, had strengthened paternal authority, and had softened the lot of children. Comte made clear that “as far as to the most fundamental tie of all was concerned, (...) the only thing left to do [was] to consolidate and complete what Catholicism [had] so happily organized” (*Ibid.*, p. 365). In particular, Comte claimed that part of the beneficial influence of Catholicism resided in having deprived women “of any participation whatsoever in sacerdotal functions, even in the constitution of the monastic orders in which they were admitted” (*Id.*) and in “barring them from kingship in all the countries where its political influence had been effective enough” (*Id.*). These exclusions from the “spiritual” and the “temporal” domains led Comte to maintain that “the improvement of women’s condition carried out by Catholicism mainly consisted in securing the due liberty of their interior life by confining them more and more to their essentially domestic existence” (*Id.*). He also insisted that the indissolubility of marriage and the proscription of divorce were also morally and materially progressive features since they prevented or contained “the fickleness of our views and the uncertainty of our plans” (*Id.*), and gave the wife “an imprescriptible right, independent even of her

own conduct, to an unconditional participation in not only all the social advantages of the one who had once chosen her, but, as far as possible, also in the consideration he enjoyed" (*Ibid.*, p. 366). It was difficult, Comte added, "to imagine any practicable arrangement more favourable to the dependent sex" (*Id.*). Finally, drawing on the example of the women of the upper class whom he thought representative of the normal feminine type in their removal from the public sphere and their dedication to the running of the household and the support of their relatives, Comte concluded that

"far from tending towards a chimerical emancipation and a no less vain equality (...), civilization, by developing the essential differences between the sexes as well as all the others, deprives women more and more of all the functions that can distract them from their domestic vocation" (*Id.*).

However, Comte also pointed out that there had been attempts to challenge this Catholic conception of marriage that had been developing steadily throughout the course of history. For the advent of the metaphysical state and the rise of the critical spirit did not fail to spark the questioning of the basis on which the domestic relation rested. In particular, Comte regarded Protestantism, with its blending of equalitarianism and free inquiry, as having started a movement aiming at the dissolution of all established social structures, including marriage: by supporting "the universal practice of divorce", Reformation testified to its negative and corrupting character. Fortunately, Comte added, there had been resistance to that dissolving trend, "against which the modern mores have always fought spontaneously, as a necessary result of the natural law of human evolution that relates to the family" (*Ibid.*, p. 437). In other words, the general opposition to divorce proved that traditional marriage was one of these "fundamental conditions of modern civilization, that no one could change" (*Ibid.*, p. 438).

Eventually, it was for the positive state to give the relations between the sexes its full and definitive development. The end of the warlike period, the abolition of slavery, the growth of the "industrial element", all these factors contributed to give the majority of mankind access to the "emotions of the family":

"Only then could appear the full and direct illustration of the final destination of almost all civilized men for domestic life, which had been among the Ancients either forbidden to the slaves or disliked by the caste of freemen, who were usually drawn from it by the clamorous emotions of the city and the battle-field" (*Ibid.*, p. 502).

By turning most men into workers, this new historical epoch had brought closer together men and women, who could now search for happiness within the domestic realm. Of course, Comte did not ignore that the industrial revolution resulted in more social mobility, the appearance of female workers in factories, and a certain degree of emancipation from traditional moral codes. But he refused to interpret these phenomena as the harbingers of “the dissolution of domestic ties” (*Ibid.*, p. 503). Both in the *Cours* and the correspondence, Comte acknowledged that a superficial view of the situation might have led one to think that the subjection of women and their confinement to the domestic sphere were about to disappear and be replaced by a world in which men and women would be on a par:

“It is true that up to now the newness of this situation has not yet permitted a sufficient manifestation of these ultimate differences [between the sexes], while the earlier distinctions seemed to fade away” (Comte to Mill, July 16, 1843; in Haac [ed.], p. 180)<sup>22</sup>.

Yet, he was also convinced that this was only a transitory phase and that, sooner or later, the tendency he had identified at work throughout the course of the history of mankind would take over once again and finally establish itself as the end-stage of human evolution.

“In making women more and more suited for their true general destination, I am convinced that the modern regeneration [of society] will increasingly return them completely to their essentially domestic life, its disarrangement being very much part of the great transition which, I believe, temporarily steered them away [from their essential function in the home] toward different secondary concerns” (Comte to Mill, October 5, 1843; *Ibid.*, p. 192).

In fact, Comte had already spotted the first signs of such a process in

“the popular tendency (...) to shift numerous professions originally practiced by women to men, so that women be more and more confined to their eminently domestic destination and could only enter the careers fully compatible with the fundamental course of human evolution” (A. Comte, *PS*, p. 503)<sup>23</sup>.

This analysis provided the conclusion of the first part of Comte’s dynamic argument for women’s subjection: according to his interpretation of the historical record of mankind, the gradual development of the social structure included more and more predominantly as one of its constitutive elements the subordination of one sex to the other, and there was no indication that this situation was about to change.

What about the second element necessary for Comte's case to hold, i.e. the evidence that women's capacities would not evolve in such a way as to enable them to carry out the same activities as their male counterparts? There again Comte resorted to social dynamics to make his point. Once again in line with his progressive theory of history, Comte acknowledged that the history of modern western societies had been characterized by a gradual process of emancipation which drove the majority of men out of a state of slavery, through serfdom, to public freedom and private independence. The reason why this liberating movement succeeded was that the inequality on which their subjection was grounded was not natural, i.e. they exhibited capacities that enabled them to overcome it. As Comte put it,

"The great mass of our species has long been submerged everywhere in social conditions of an infinitely greater inferiority than that on account of which one takes to pitying women today; but it has been able to emerge gradually [from inferiority] ever since the early Middle Ages among elite populations, because this abject state, a temporary phase of the sociability of earlier days, was really not grounded in any organic difference between the rulers and the ruled" (Comte to Mill, October 5, 1843; in Haac [ed.], p. 191).

Now, suggested Comte, what could explain that women, who had as much time as the majority of men to emancipate themselves, had so far failed to do so? Why did the analogy between the emancipation of the lower male elements of society and that of women break down? Comte had no doubt as to where the difference lay: "the subjection of women in society will necessarily last indefinitely (...) because it is directly based on a natural inferiority which nothing can undo" (*Id.*). Comte thus held the fact that women had not been able to free themselves from male domination as evidence of them being deprived of the mental capacities necessary for such an emancipation. In any case, he saw no other way to "explain the consistently inferior social status of the feminine sex" (*Id.*). With that demonstration, Comte was apparently convinced he had gathered all the elements he needed for his case for women's subjection to hold: evidence of the necessary inferiority of women's capacities and evidence that the social structure which justified sexual discrimination was not to change. Quite predictably, Mill was not convinced.

## **E – The Shortcomings of the Dynamic Argument.**

The task of refuting Comte's dynamic argument was not, on the face of it, an easy one for Mill. Since he accepted the law of the three stages and its intellectualistic interpretation of the history of mankind, it seemed that Mill had also to accept the historical account of women's subjection Comte presented as a specific instance of his general theory of history. For instance, how was he to defuse Comte's claim that the contrast between males slaves' gradual emancipation and women's enduring subjection proved women's inferiority? How was he to "explain the consistently inferior social status of the feminine sex", as Comte put it, without premising it on an "organic difference" (*Id.*)?

As I will show, the necessity imposed on Mill to come up with an alternative explanation of women's lasting subjection prompted him to propose an account rival to that of Comte and which helps to flesh out a bit more fully the outlines of his projected ethology. Moreover, Mill's insistence on "verifying" historical generalizations clarifies both the sociological relevance Mill ascribed to ethology and Comte's unshakeable commitment to phrenology. Finally, Comte's puzzling insensitivity to the weaknesses of his generalizations about women's place in society suggests that his views were suffused with a biologically-inspired understanding of historical phenomena that belied his plea for an autonomous sociology.

### **1 – Mill's Alternative Ethological Account of Women's Lasting Subjection.**

Although Mill was impressed by the methodological grasp of social dynamics and the power of historical synthesis demonstrated by the last three volumes of the *Cours*, his consideration for these achievements did not extend to a blanket endorsement of all of Comte's ideas. Mill was in fact sceptical about some of the social and political conclusions Comte drew from his historical generalizations, most notably the one contending that the history of women's warranted their subjection. On the contrary, Mill held that women's enduring subordination to male power was no proof that they were deprived of the moral and intellectual abilities characteristic of men.

In the correspondence, Mill introduced his views by challenging Comte's

"argument based on the persistence in our day of the social subordination of women, compared to the gradual emancipation of the lower classes in the

most advanced nations, although these classes began everywhere as slaves” (Mill to Comte, October 30, 1843; *Ibid.*, p. 201-2).

After having made clear that he understood that Comte explained “this difference in historic development” by “the organic inferiority of women”, Mill introduced what he took to be “a satisfactory reply to the argument” (*Ibid.*, p. 202). The gist of his rejoinder consisted in maintaining that women had been continuously subjected not because they did not have and could not acquire the capacities to emancipate themselves, but because the social environments to which they had been confined had left no room for those capacities to develop or to be expressed. The ethological rationale was obvious: the moulding of women’s character traits was ascribed to the formative influence of “circumstances” alone, with no appeal to “organic differences”.

Mill substantiated his point by drawing a parallel between women and male household slaves. For, Mill argued, it was not the case that all male slaves had been able to rise to freedom and social equality. Contrary to serfs, who enjoyed a relative independence (they owned a little plot of land from which they had to eke out their living; they were responsible of their wife and children; they could make some choices of their own as to how they wanted to live, etc.), household slaves had been kept under an infinitely more severe yoke which stifled even the slightest attempt to exhibit initiative. Obedience was all that was expected from them. Consequently it was normal that the latter never had accomplished their own emancipation, whereas the serfs, because they had benefited from a certain degree of autonomy, were able to develop the capacities (self-discipline, foresight, self-reliance, etc.) that eventually entitled them to claim and to obtain equal rights. In that case, what made the difference was not an organic factor but the social environment which was responsible for the formation of the moral and intellectual qualities required by emancipation.

The next step of Mill’s argument was to assimilate women to household slaves, a polemical comparison which was happy given Comte’s insistence on their “domestic destination”. Mill did not consider the present situation of women to be worse than that of serfs (even if it might in fact have been an appropriate description for most lower class women in nineteenth century Europe), but nonetheless argued that the state of subjection in which they were maintained had effects similar to those which prevented household slaves from emancipating. Their servitude might have been milder in the sense that it was not primarily based

on brutality, but it still was servitude. Extending to all the aspects of women's lives (the handling of their property, the education of their children, the election of their occupations and leisure, etc.), its pervasiveness insured that women had no opportunity to choose for themselves. But it was not only that "circumstances" prevented women from having a hold on the running of their existence, it was also the case they could not represent themselves as being individuals with personal interests. An education primarily aimed at the finding of a husband; a domestic life entirely dedicated to the well-being and happiness of one's relatives; a marital relation that implied sexual subjection; all these elements conspired to smother the spirit of autonomy and individuality Mill regarded as "the principal source of the impetus by which, little by little, [oppressed groups] rose to liberty" (*Ibid.*, p. 203). In these conditions, it was unlikely that women could emancipate themselves. Mill was convinced that

"These considerations would seem more than sufficient to explain the almost endless delay in the social emancipation of women, without our being able to infer that it is never to be realized. At least you will grant me that it could take place only long after that of the serfs, which itself is not a very ancient event" (*Ibid.*, p. 203).

However, the interest of Mill's environmental account of the causes of the enduring subjection of women was not only that it provided a plausible rejoinder to Comte's biologically-based argument about women's capacities. Firstly, it offered a more developed presentation of the kind of explanation ethology was to offer for the formation of character traits and the way they could be expressed or not according to the social setting in which an individual was placed. Secondly, and to this aspect of the debate I will now turn, Mill's ethological considerations were supposed to play a central evidential role in the verification of sociological hypotheses.

## **2 – Sociology, Ethology, and the Inverse Deductive Method.**

The dynamic argument proposed by Comte was easily chargeable with being an unwarranted generalization. For what would guarantee that the present historical trend could not alter its direction? Was it not possible that, for some reasons, the subjection of women Comte had observed as increasingly characteristic of the relations between the sexes would disappear or be reversed? If the dynamic argument was to deliver what Comte expected from it, that is proof

that the subjection would endure, it needed to be backed up by some other element. It was the gist of Mill's methodological argument to claim that, given the inconclusiveness of phrenology and in the absence of a fully developed ethology that would settle the question of women's mental capacities, Comte could not hold his analysis of the historical record of mankind to support male domination. In other words, it was for a "theory of human nature", understood as a theory of the formation and development of mental dispositions, to corroborate or refute the historical generalizations Comte had ventured.

Even if he did not mention it in the correspondence, Comte was aware of the evidential dependence of social dynamics on this "theory of human nature", since he had theorized it in the Forty-Eighth Lesson of the *Cours*. As we have seen earlier<sup>24</sup>, the perspective Comte had adopted there made it clear that his account of social evolution could be interpreted in mentalistic terms, as

"the continuous reinforcement of any given disposition, either physical, intellectual, moral or political, and the indefinite waning of the opposite disposition; a trend from which one could predict scientifically the final domination of the former and the definitive demise of the latter" (A. Comte, *PS*, p. 151).

Consequently, Comte claimed that the "theory of human nature" was a "necessary means for the continuous verification" (*Id.*) of historical generalizations to the extent that it stated both the various mental dispositions existing in humans and their limits of variability and operated as a theoretical check on the explanations of social phenomena. A sociological account, Comte argued, that would postulate the existence of a mental disposition not acknowledged by the theory of human nature, or that would assume a development of a given disposition beyond what had been attested by the theory of human nature would have to be rejected<sup>25</sup>. Hence,

"no law of social succession, even when duly established with the help of the historical method, should be definitively accepted until it has been rationally linked, either directly or indirectly but always unquestionably, with the positive theory of human nature: all the inductions that could not withstand such a test would necessarily end up by being proved illusory by a more mature sociological appraisal, either because the observations would have been too partial, or because they would not have been extended enough" (*Id.*, p. 153).

In the *System*, Mill stated his agreement with Comte's characterisation of the above procedure as "inseparably inherent in the nature of sociological speculation" (J. S. Mill, *SL*, VI, IX, 1, p. 897) and even singled him out as the only

thinker who had seen “the necessity of (...) connecting all our generalizations from history with the laws of human nature” (*Ibid.*, VI, X, 3, p. 914). That “necessity” was, in Mill’s view, both logical and architectonic.

On the one hand, it was not possible, due to the large numbers of factors involved and to our limited knowledge of the manner in which those interacted, to deduce historical predictions concerning social phenomena from the joint consideration of the psychological and ethological laws of human nature and of the circumstances to which individuals were exposed:

“when the question is that of compounding several tendencies together, and computing the aggregate result of many coexistent causes; and especially when, by attempting to predict what will actually occur in a given case, we incur the obligation of estimating and compounding together the influences of all the causes which happen to exist in that case; we attempt a task to proceed far in which, certainly surpasses the compass of the human faculties” (*Ibid.*, VI, IX, 1, p. 896).

However, Mill took what he labelled the “Inverse Deductive Method” to be an appropriate manner of coping with the intricacies specific to the study of social phenomena. For, whereas the “Concrete Deductive Method”, as exemplified by astronomy, amounted to deducing conclusions from ultimate laws and verifying them by checking that they were corroborated by empirical generalizations, the “Inverse Deductive Method” worked in the opposite direction, starting with empirical generalizations (social phenomena) and trying to see whether they could be derived from the psychological and ethological principles of human nature<sup>26</sup>.

From an architectonic perspective, the use of “Inverse Deductive Method” tallied with Mill’s belief, as already hinted to in Chapter IV<sup>27</sup>, that the proper “Logic of the Moral Sciences” consisted in taking the various laws responsible for the production of mental states as the theoretical basis from which to deduce the laws of collective behaviours. In other words, sociology could not be held to be an independent science because historical generalizations were derivative from the laws of human nature:

“The succession of states the human mind and of human society cannot have an independent law of its own; it must depend on the psychological laws which govern the action of circumstances on men and of men on circumstances. (...) Until that law can be connected with the psychological and ethological laws on which it must depend, and, by the consilience of deduction *à priori* with historical evidence, can be converted from an empirical law into a scientific one, it cannot be relied on for the prediction of future events, beyond, at most, strictly adjacent cases” (*Ibid.*, Chap. X, Sect. 3, p. 914).

The gist of the “Inverse Deductive Method” was to try, in cases in which it was not possible to deduce propositions explaining the actual course of history that we could check again the facts, to find middle-level principles about which we would make sure they were compatible with the laws of human nature. So, even if it was indeed the case that a deduction of social phenomena from psychological and ethological laws was practically impossible, the “Inverse Deductive Method” nonetheless secured the dependence of the former on the latter by making sure that a historical generalization would not contradict the “theory of human nature”.

How would the “Inverse Deductive Method” apply in the case of sexual inequality? To back up the dynamic argument according to which the subjection of women would persist, it would be necessary to show that the mental capacities Comte ascribed to women would not improve or develop so as to put them on a par with men. In that sense, what Comte needed from the “theory of human nature” was a demonstration of the fixity or innateness of mental dispositions. But, as Mill tirelessly underlined, this was exactly what remained to be proved. In the absence of a sound “ethology” or science of the formation of character and given the dubiousness of phrenological conclusions on the subject, there was no way to decide which mental dispositions were due to nature or nurture, and to what extent they could be altered. Consequently, in that very case, the “Inverse Deductive Method” was of no avail since it was not possible to rely on the “theory of human nature” to crosscheck the likelihood of the historical generalization bearing on women’s subjection. As long as Mill’s ethology would remain unavailable, the dynamic argument could not be corroborated as Comte’s methodology required.

### 3 – The “Biologizing” of Sociology.

As already pointed out for the correspondence<sup>28</sup>, Comte’s unwillingness to consider Mill’s arguments was particularly striking, especially with respect to Mill’s emphasis on the necessity of an account of character-traits formation. Yet, even if he was opposed to Mill’s environmentalist tendencies, Comte’s own conception of the evidential structure of sociology indeed called for the development of this independent “theory of human nature” that would shed crucial light on the origin and nature of mental dispositions.

This inability to take on Mill’s ethological suggestions might be ascribed to Comte’s implicit attempt to “biologize” sociology. For what convinced him that the

dynamic argument won the day for the subjection of women was that he explicitly regarded biology (and consequently phrenology) as an appropriate candidate to use in the “Inverse Deductive Method”. As he put it in the Forty-Eighth Lesson of the *Cours*, it was in the

“exact and continuous harmony between the direct conclusions of historical analysis and the notions of the biological theory of man that will reside the primary strength of sociological demonstrations” (A. Comte, *PS*, p. 153).

But if so, one comes to realize that what we have seen Comte describe, in the previous chapter<sup>29</sup>, as the “continuous” (*Ibid.*, p. 157) dependence of sociology on biology – another way of conceiving the “Inverse Deductive Method” – in fact prevents an objective appraisal of the dynamic argument for the subjection of women. Since phrenology postulates the innateness of mental dispositions and their relative fixity (“the necessary invariability of the human organism” [*Ibid.*, p. 158], as Comte also put it), it thus dogmatically assumes that women’s mental dispositions are unchangeable, the whole problem on knowing whether or not they are really so is glossed over. This is the first way Comte “biologized” sociology: by using phrenology as a bar on sociological explanations.

However, there was a second and more direct way in which Comte “biologized” sociology, particularly its dynamic aspect. As some commentators have noted<sup>30</sup>, the historical views of Comte were deeply influenced by a biologically driven scheme mixing the comparative anatomy of Meckel, Geoffroy Saint-Hilaire and Serres and the somewhat outdated embryological conception of “preformation”. All these elements coalesced into what Comte considered the key concept for interpreting the historical record of mankind, namely that of *development*: the regular unfolding of human dispositions through a process that could be described with the help of historical laws. As Comte put it,

“It is (...) obvious that humanity constantly develops itself throughout the gradual course of its civilization, particularly in the most eminent faculties of our nature, be they physical, moral, intellectual or political; *i.e.* these faculties, at first numb, reach, through an ever more extended and regular use, an evermore fuller development, within the general limits set by the fundamental organism of man” (*Ibid.*, p. 128).

It was this developmental scheme that Comte applied to the mental evolution of mankind. For instance, the “law of the three stages” assumed that the respective speed with which the mental dispositions responsible for the theological, metaphysical, and positive turn of mind developed in individuals accounted for the

necessary succession of the different epochs which had characterized the history of humanity. On this view, no new disposition could appear during the course of history because all the mental capacities were fixed from the outset of the process, just as on the preformationist view, all the characteristics of a living being were already present in the germ from which it developed. This resulted in Comte's claim that the history of mankind was characterized by

"the simple spontaneous development, gradually aided by an appropriate cultivation, of the preexisting fundamental faculties which constitute our nature, with no introduction of any new faculties whatsoever" (*Ibid.*, p. 129).

As Dominique Guillo underlines, Comte did not regard this developmental law as the mere "analogical transposition of the principles which govern[ed] embryonic growth" (D. Guillo, *Les figures de l'organisation*, p. 326) but held it to correspond to an actual organic process taking place in every individual. Drawing once again on Gall's idea of the existence of a fixed number of cerebral organs whose volume could vary and which were responsible for specific abilities, Comte assumed that phrenology gave a material verification of his conjectures about the mental evolution of mankind by showing that

"the succession of stages through which human conception goes is universal and inflexible because its substratum consists in a genuine organic development – that of the brain" (*Id.*).

One of the consequences of this preformationist view of mental evolution was that it left no room for a possible modification of the number or nature of mental dispositions and prompted one to conclude that, if a disposition had not been exemplified by a certain kind of individuals during the course of history, it was not part of the mental endowment of the kind considered. In the case of women, it is likely that Comte took the subjection of women to be an enduring fact of social existence because, on his developmental scheme, the historical persistence of male domination testified to its necessity. For if women had not been capable of competing intellectually and practically with men, it was because they had already reached the full measure of their intellectual and volitional development. Of course, this conclusion held only if the innate nature of mental dispositions had been proved. Perhaps Comte was too dogmatic to recognize that it was not the case, whereas Mill rightly saw that his ethology was part of the answer to that question. In any case, the biological inspiration that suffused Comte's

understanding of social phenomena certainly did not help him to overcome the shortcomings of his views on sexual equality.

Finally, what appears more clearly now is that the root of the disagreement between Comte and Mill lay in their respective conceptions of what a mental capacity was and how it developed. Comte held that intellectual and moral dispositions were fixed for every individual from the outset by its biological make-up and would develop between certain limits also fixed from the outset. At the level of mankind, the resulting picture was that of a set of basic capacities that were fixed and that would expand and develop throughout a progressive history. Mill refused Comte's concept of 'basic capacities' made sense because he held that these capacities could change since at least two of their causes (psychological and environmental) could also change. For Mill, mental capacities were primarily (and especially for intellectual and moral capacities) the result of an exposure to environmental influences which were conveyed by the sensory apparatus of the individual and whose developmental limits could not be known *a priori*.

As it now clearly appears, neither the static argument nor its dynamic counterpart delivered what Comte expected from them, namely a convincing proof that the subjection of women would remain a central feature of the social relations between the sexes. Furthermore, two important exegetical lessons can be drawn from the analysis of Comte's arguments and Mill's rejoinder carried out in this chapter. On the one hand, it is now obvious that the views of Comte's on sexual equality glaringly belied his advocacy of an autonomous science of social phenomena: for it was not only that Comte rested his case for male domination on biological arguments (as shown in the previous chapter), but it was also the case that even his sociological argument, both in its static and dynamic aspects, could not hold without appealing to biological assumptions. On the other hand, the survey of Mill's objections to Comte's views testified to the importance of developing the long-awaited "ethology" so as to be able to adjudicate, in one way or another, the sexual equality debate. To this topic, I will now turn.

---

<sup>1</sup> See IA.

<sup>2</sup> The withering away of references to Comte in Mill's *System of Logic* between the first and the eight edition has been documented by W.M. Simon, *European Positivism in the Nineteenth Century. An Essay in Intellectual History*. Port Washington & London: Kennikat Press, 1973. "Appendix to Chapter VII", pp. 275-9.

<sup>3</sup> For want of space, I cannot undertake here a comparison of Mill's appraisal of Comte's sociology in the *System* and the later *Auguste Comte and Positivism* (1865). However, it may be maintained that, except for a difference in tone, Mill's overall estimate had not changed between the two books.

<sup>4</sup> See I, n. 1.

<sup>5</sup> In these "Preliminary Considerations on Social Statics or General Theory of the Spontaneous Order of Human Societies", Comte asserted that, with respect to intellectual faculties, "no one can contest today the relative inferiority of woman in this view, unfit as she is, in comparison, for the requisite continuousness and intensity of mental labour" (A. Comte, *PS*, p. 186). As for practical qualities, he claimed that "the radical inaptitude of the female sex is there yet more marked, even with regard to the most elementary state, and limited to the guidance of the family, the nature of the task requiring, above everything, an indefatigable attention to an aggregate of complex relations, none of which must be neglected, and an independence of the mind from the passions, that is more reason" (*Id.*). He eventually concluded on the "fortunate social destination eminently reserved for women": "women are in general as superior to men with respect the spontaneous expression of sympathy and sociability as they are inferior to them in understanding and reason. Accordingly, their proper and essential function in the economy of the family, and consequently of society, must be to modify constantly, by a more energetic and more touching unmediated excitement of the social instinct, the general direction necessarily originated by the cold and rough reason which is usually distinctive of the predominant sex" (*Ibid.*, p. 187).

<sup>6</sup> On Mill's difficult relations with his wife Caroline, see IA & IB..

<sup>7</sup> Comte's only rejoinder to these objections was to regret that Mill confused "the *management* of the household and the general *government* of the family": "In all of Western Europe, I believe, just as in England, the household is administered by women, but everywhere also, except for unusual individual cases, men govern the common affairs of the family" (Comte to Mill, November 14, 1843; in Haac [ed.], p. 209).

<sup>8</sup> See VIIE.

<sup>9</sup> Mill took this to be true "except in those (so far very rare) cases where education has developed the capacity to look at the whole and who have become used to considering the overall effect of whatever conduct they adopt. You know that this is precisely what women's education lacks more than anything else, to the point where one does not even consider it a virtue of their sex to prefer the general interest to that of the family or of their friends" (Mill to Comte, August 30, 1843; in Haac [ed.], p. 184).

<sup>10</sup> Comte hold that there was no better case than the subordination of wife to husband in the family to grasp "in the same degree, the most respectful spontaneous obedience, on the part of the inferior, without the least degradation; an obedience first imposed by necessity, and then by gratitude; and nowhere else do we see in the superior party the most absolute authority untied to entire devotedness, too natural and too gentle to be regarded as duty" (A. Comte, *PS*, p.188).

<sup>11</sup> Comte agreed with Mill that sympathy could exist between equals, but certainly not between the sexes, due to their inequality: "As to the necessary imperfection of affections founded on inequality, I agree with you, and here I believe that the fullness of human sympathies could exist only between two eminent men whose moral nature is sufficient to restrain any serious impulse of rivalry. This kind of accord seems to me far superior to any that might exist between one sex and the other. However, this could obviously not be the normal type of the most basic and common relationships, where first the natural hierarchy of the sexes, then that of ages, form the most powerful bond" (Comte to Mill, July 16, 1843; in Haac [ed.], p. 180).

<sup>12</sup> See IC2. Mill certainly thought that his relation with Harriet Taylor was of that kind. As he acknowledged to Comte, it was "quite possible that here [he] judge[d] human nature too much according to my own, which may, in several respects, be exceptional" (Mill to Comte, July 13, 1843; in Haac [ed.], p. 174 ).

<sup>13</sup> See IC2.

<sup>14</sup> See *supra* n. 5.

<sup>15</sup> See IIIC.

<sup>16</sup> One might argue that Comte could have avoided to contradict his methodological principles whilst sticking to his belief that the origin of women's inferiority was biological: he could have endorsed Mill's proposal to determine first the influence of circumstances on character formation and secondly, by using the Method of Residues, to ascribe the unexplained effects to biological causes. In this instance, the argument is sociological to the extent that it is the failure of the environmental hypothesis to account for the unexplained effects that tells us that those are due to biological causes. But, as seen in IV, Comte refused to consider Mill's explanatory scheme.

<sup>17</sup> See IVB.

<sup>18</sup> *Id.*

<sup>19</sup> See V.A.

<sup>20</sup> Comte gave a phrénological version of his general view of human evolution: "From a phrénological perspective, one could clearly characterize such a tendency by claiming that, through exercise, the different organs of the cerebral apparatus gain a greater predominance in proportion to their distance from the vertebral region and their nearness to the frontal region" (A. Comte, *PS*, p. 204).

<sup>21</sup> In a footnote, Comte invoked the "undisputable proofs which, as Robertson has rightly observed, establish with full certainty how radically inferior the social state of women was under the polytheistic régime of Antiquity, compared to what it afterward became under the influence of Christianity" (*Ibid.*, p. 300). The historian William Robertson (1721-1793) was one of the great figures of the Scottish Enlightenment and some of his works, most notably his *History of the Reign of the Emperor Charles V, with a View of the Progress of Society in Europe* (1769) and his *History of America* (1777), correlated the level of advancement of society with the condition it granted women. Robertson's narratives were an illustration of the interest in the history of the sexes and its social and political relevance which surfaced in the early 1770s in Scotland, as illustrated by Adam Ferguson's *Essay on the History of Civil Society* (1767), John Millar's *Observations concerning the Distinction of Ranks* (1771), Lord Kames' essays 'Of the Progress of the Female Sex' and 'Manners' in his *Sketches of the History of Man* (1774), and William Alexander's *History of Women From Earliest Antiquity to the Present Time* (1779). Notwithstanding serious disagreements, all these authors shared the idea that the condition of women had improved throughout history and that the advent of modernity, characterized by the growing influence of Christianity and the development of the commercial spirit, was a major watershed in that process (on this, see J. Rendall, "Clio, Mars and Minerva: The Scottish Enlightenment and the Writing of Women's History", in T.M. Devine and J.M. Young (eds.), *Eighteenth Century Scotland: New Perspectives*. East Linton, Scotland : Tuckwell Press, 1999, pp. 134-51).

<sup>22</sup> In the *Cours*, Comte reckoned that "one might fear (...) that an uncoordinated industrial expansion might end up altering the necessary subordination of the sexes, by allowing women to have too independent an existence" (A. Comte, *PS*, p. 503).

<sup>23</sup> The same point was repeated in the correspondence: "The natural development of our industry certainly tends to shift over to men a number of professions which were long exercised by women, and this spontaneous disposition is, to my eyes, only an example of the growing trend in our society to exclude women from all occupations which are not sufficiently reconcilable with their domestic functions, the importance of which will become ever more preponderant" (Comte to Mill, October 5, 1843; in Haac [ed.], p. 192).

<sup>24</sup> See *supra* D1.

<sup>25</sup> As Comte put it in the following lesson, "At any age of human evolution, no direct sociological outline could be regarded as scientific, however powerful the inductions on which it rests might seem to be, if it is contradictory to the known laws of human nature" (A. Comte, *PS*, p. 158).

<sup>26</sup> However, because he considered that Comte held the Inverse Deductive Method to be the only one appropriate for the analysis of social phenomena, Mill made clear that he thought that sociology could resort to other methods. In particular, he underlined the usefulness of the "Concrete Deductive Method" for the study of those social phenomena that were primarily the result of one specific kind of cause, as was the case with political economy which was concerned with the phenomena resulting from the pursuit of wealth (see J. S. Mill, *SL*, VI, IX, 3: "To What Extent the Different Branches of Sociological Speculation can be Studied Apart: Political Economy Characterized").

<sup>27</sup> See IVB.

<sup>28</sup> See IVD.

<sup>29</sup> See IVB.

<sup>30</sup> Most notably G. Canguilhem, G. Lapassade, J. Piquemal & J. Ulmann, *Du développement à l'évolution au XIX<sup>e</sup> siècle*. Second Edition. Paris: PUF, 1985; and more recently, D. Guillo, *Les Figures de l'organisation. Sciences de la vie et sciences sociales au XIX<sup>e</sup> siècle*. Paris: PUF, 2003, Part III, Chap. 3, Sect. 1 ("L'histoire de l'humanité comme "développement" à partir d'un germe préformé").

## VI – The Ethological Fiasco: The Methodological Shortcomings of the Millian Science of the Formation of Character.

So far, my analysis of the Comte-Mill relation has mainly consisted in a critical appraisal of the sexual equality debate. In each of the previous chapters, I have laid out Comte's arguments for the subjection of women (either biological, as in chapter III and IV; or sociological in chapter V), and then introduced the objections Mill levelled against them, both with regard to the truth of Comte's premises and the soundness of his inferences. The impression one gets from such a review is that of Comte's failure to make a case convincing. As Mill demonstrated, neither the phrenological argument nor the argument based on social "statics" and "dynamics" could deliver conclusive evidence in support of the indefinite perpetuation of women's subjection.

Now, the adoption of a critical stance was of course not the whole of Mill's considered position on the issue of sexual equality, since he also intended his opposition to be constructive. Accordingly, I try in this chapter to introduce what he took to be his positive contribution to the sexual equality debate, namely his theorization of ethology or the science of the formation of character. Firstly, I show the centrality of ethology in Mill's thought (VIA). Secondly, I explain in what sense ethology can be understood as a reform science and in what sense this characterization provides an adequate interpretative hypothesis for the *System of Logic* (IVB). Thirdly, I analyse the methodology proper to ethology (VIC). I conclude by reviewing some rationales for Mill's failure to develop his ethology (IVD).

This chapter contributes two points to the correct assessment of Mill's thought. Firstly, it demonstrates that the taking into account of Mill's rhetoric is a key to an adequate understanding of the argumentative structure of some of the most convoluted passages of the *System*, and that once we take this rhetoric into account, the chapter on ethology emerges as far more coherent than has been supposed.

Secondly, unlike other commentaries, it singles out Mill's inability to come up with a sensible candidate for a law of composition as the great unsolved problem faced by Mill's ethological project.

I stress that throughout this chapter I do not intend to give an historical account of what actually stopped Mill from developing his ethology. Instead, my purpose is to identify the methodological problems that would have stood in the way of Mill or any group of researchers who might have taken up his programme.

### A – The Need for Ethology.

As seen previously, Mill was convinced that the key to the sexual equality issue lay in taking “into account the difference in education and in social position” (Mill to Comte, August 30, 1843; in Haac [ed.], p. 184) characteristic of the two sexes. Whatever inferiority in intellectual and moral powers women exhibited in the past or presently exhibit, Mill argued, was not entirely due to certain physiological features inexorably developed and fostered within the course of history but mostly resulted from the “circumstances” to which they have been subjected. Since nobody denied the possibility of modifying, to a lesser or greater extent, the various circumstances (education, access to a profession, political participation, etc.) that Mill took to be responsible for women’s subjection, the practicability of a reformist feminist agenda was obvious. What could be expected of Mill was that he came up with a convincing case for the emancipation of women merging these different elements into a coherent whole.

In his correspondence with Comte, Mill made clear that the first step of his attempt at a systematic argument for the emancipation of women rested on the establishment of the

“science I have called ethology, that is the theory of how external circumstances, either individual or social, influence the formation of moral and intellectual character” (Mill to Comte, October 30, 1843; *Ibid.*, p. 198).

What rendered this move crucial was the need to cash out into a workable explanatory scheme the abstract appraisal of the various factors at play in the scientific analysis of “moral”. To list the different laws (“of circumstances”, “of physiology”, and “of mind”) likely to contribute to this kind of explanation was indeed essential for a correct grasp of the sexual equality issue. But the adjudication of the case demanded more than that, namely the precise ascertainment of the influence of the different causes involved, including the manner in which they acted in conjunction, and the way in which they affected each other.

To put it briefly, the debate boiled down to the following alternative: either (i) women's intellectual and moral inferiority was determined by biological factors alone and then subjection would continue to prevail because there was no way to remedy the shortcomings of female "character"; or (ii) their moral and intellectual inferiority was primarily due to environmental factors (education, social position, etc.) and then avenues for progress could be explored. So far, Mill had just assumed that the consideration of environmental factors *could* explain intellectual differences, but he had not *actually* proved that they did. Such an assumption remained tentative as long as it had not been vindicated on empirical grounds, through the exact appraisal of the causal influence of the "laws of circumstances" on the formation of character. Hence the necessity of founding ethology. Here, it is important to remark that Mill often argued as if the development of an environmental account was equivalent to a demonstration of the "residual" or minor role of biological features in the explanation of moral and intellectual differences. But surely, by Mill's own logical standards, plurality of causes left open the possibility that the environmental and the biological explanations could be separately *sufficient* to explain facts about women<sup>1</sup>. However, Mill decided to frame the debate in the terms of an alternative: either one explanation or the other was right, but not both. This explains the one-sidedness of Mill's perspective, which put a somewhat exclusive emphasis on the environmental explanation, but also helps to understand what made his approach distinctive.

What was merely a hint about a worthy subject of inquiry in the correspondence with Comte developed into a more extensive account in Mill's *SL*: chapter V of Book VI was intended as an introduction to the essentials of "Ethology, or the Science of the Formation of Character" (J. S. Mill, *SL*, VI, V, p. 861), and a blueprint for future developments in the field. But what in 1843 boded well for Mill's scientifically based projects of progressive reforms did not yield results thereafter: Mill wrote nothing substantial on ethology in the years following the publication of the *System*<sup>2</sup>. Given the centrality of ethology in Mill's plans to improve social arrangements through a better knowledge of human nature, the failure to establish it on safe grounds represented a major threat to his hopes for social progress. What is striking is that Mill seemed to have realized the various difficulties associated with the development of a systematic body of ethological

knowledge at the very moment he tried to convince Comte of its usefulness for solving the problems of sexual equality.

Mill's interest in ethology surfaced years before the writing of the *System*. As Janice Carlile remarks, "Mill began to stake out his claim to the subject of the formation of character at the very beginning of his career as a writer" (J. Carlile, *John Stuart Mill and the Writing of Character*, p. 130). In the 1820s and 1830s he ventured into ethological analyses in some of his articles and newspaper essays. For instance, in 1838, Mill accounted for the tenor of Alfred de Vigny's prose by invoking a varied set of external circumstances – such as the writer's *ancien régime* upbringing, his unfulfilling career as a soldier, and the impact of recent historical events on his thought<sup>3</sup>. But those were mere trial balloons indicating the possibility of a scientific study of the causal factors at work in the determination of moral and intellectual dispositions: no laws were drawn from the cases reviewed; no conclusions were offered as to the respective weights of the formative influences bearing on human character. Yet, Mill did not doubt that the time was near when ethology would become a proper science. As he made clear to Comte, Mill hoped that his contribution would place him among the contributors to this collective endeavour:

"Even though human life is short, we can look forward to seeing the state of society and the national character of each important segment of mankind related to the laws of human nature and to the characteristics of the general or particular organic milieu to which they pertain; though, to be sure, the link will not be as complete as that we find today in the most advanced sciences. I would be happy, indeed, if I thought myself capable of playing a truly important role in this great enterprise, even if only a secondary one" (Mill to Comte, March 22, 1842; in Haac [ed.], p. 61).

One may have expected that the laying out of the theoretical basis of ethology in Chapter V of Book VI of the *SL* would have paved the way for the attainment of general explanations bearing on the causes of the different kinds of character. Yet none of this happened. As seen in the previous chapter, Mill lamented the backward state of ethology, which appeared to him "to be the least advanced of all scientific speculations of any importance" (Mill to Comte, October 30, 1843; *Ibid.*, p. 198). But the problem was that Mill, though he provided ethology with its name and foundations, was unable to carry out the task he set to himself. The correspondence with Comte testified to the unforeseen obstacles Mill encountered on his way and the growing disillusionment he experienced as to the

prospects for ethology. Despite what he had contributed in the *System*, Mill told Comte ethology remained to be created and this was to be done by

“properly evaluating the nature and the extent of the ethological effects produced either by organization or by external conditions” (Mill to Comte, December 8, 1843; *Ibid.*, p. 213; slightly modified translation).

As Bain remarks, Mill might have found in his study of the writings of the French historian Jules Michelet<sup>4</sup>, who endeavoured to explain the feelings, thoughts, and beliefs of populations of the past by referring them to a mix of racial<sup>5</sup>, geographical, political, and social factors, material for the book he “was projecting in his mind (...), which was to be on the new science, first sketched in the *Logic*” (A. Bain, *John Stuart Mill*, p. 78). By late 1843, Mill had not advanced in the completion of his project, as he told Bain:

“I do not know when I shall be ripe for beginning “Ethology”. The scheme has not assumed any definite shape with me yet” (Mill to A. Bain, late 1843; in J. S. Mill, *Earlier Letters*, p. 617).

In April of 1844, realizing that his “meditations on ethology will not be ripe for some time” (Mill to Comte, April 3, 1844; in Haac [ed.], p. 228), Mill informed Comte that he had decided to give up momentarily his ethological work in order to engage in a project easier to handle, namely the writing of the *Principles of Political Economy*. In fact, although he expressed the desire to do so throughout the remainder of his career<sup>6</sup>, Mill never returned to his “Ethology”. Of course, one could find in many of his subsequent writings fragments of ethological analyses on national, social, and of course sexual differences, but nothing that would qualify as a systematic presentation of ethology’s methods and results<sup>7</sup>. This failure to complete the “Ethology”, which jeopardized Mill’s specific approach to social reform (including his plea for women’s emancipation), had various methodological causes that I will attempt to single out in the following sections of this chapter.

#### **B – Mill’s Style and Ambitions as a “Moral” Scientist and Social Reformer.**

Mill’s inability to bring to fruition his ethological project is certainly a good reason for suspecting the presence of flaws in the chapter of the *SL* which was supposed to provide the new science with its impetus. The account of ethology offered by Mill is indeed fraught with methodological difficulties. But the acknowledgment of these shortcomings is a far cry from asserting that this chapter

clashes with the rest of the book because of an alleged lack of clarity, as for instance J. Carlile suggests<sup>8</sup>. On the contrary, I will contend that the argument of the *System*'s chapter on ethology is, in fact, quite clear, once one connects it to Mill's style and to his goals as a social and political reformer (and especially to his feminist commitment).

As A. Ryan has pointed out, much of the appeal of the *SL* "stems from the fact that it is clear that it is part of Mill's reforming programme, even if is not clear how" (A. Ryan, *J. S. Mill*, p. 60)<sup>9</sup>. Fortunately, the chapter on ethology sheds light on the manner in which the *System* could function as "a reformer's book" (*Ibid.*, p. 85). Let us take up the issue of sexual inequality as an illustration. In the functionalist framework common to Comte and Mill, the most rational and efficient organization of society was the one that took into account the whole range of individuals' needs, desires, and capacities and arranged them so that the co-operative structure thus obtained would be the most beneficial both to the individuals and society. Now, these social arrangements, be they supervised or left to the individuals' initiative, presupposed a precise and detailed knowledge of human needs, desires and capacities, and especially of the way those might be unequally distributed in the population under consideration. This knowledge, according to Mill, most often took the form of maxims or general propositions which constituted what he called the "practical knowledge of mankind" (*J. S. Mill, SL*, VI, V, 1, p. 861) or the "common wisdom of common life" (*Ibid.*, Sect. 2, p. 864). For instance, as Mill put in it in the manuscript of the *System*<sup>10</sup>, it was the case that "women are observed to be different from men in a long series of qualities" (*Ibid.*, 3, p. 868), and the existence of these differences in, say, intellectual capacities or moral dispositions was held to explain and legitimate actual arrangements between the sexes (i.e. the subjection of women to men's authority). Accordingly, if these general descriptive propositions bearing on the various constituents of human character were the grounds on which social arrangements had to be based, they had better be accurate. Mill had serious doubts about the latter fact, which doubts in turn explain his reformist tendencies.

The *System*'s chapter on ethology indeed started by voicing Mill's suspicions about the exact status of these generalizations. Let us return to sexual differences. According to Mill, it could hardly be denied that the fact that men and women differed in their needs, desires, and capacities was the result of the different causes

(such as physiological constitution, education, or social situation) involved in the formation of their respective characters. For instance, it would not have been unreasonable to ascribe the distinctive features of the feminine character in the Victorian era to the education girls were receiving (which aimed at rendering them obedient to, and supportive of, their husband) and to the role to which they were confined (the management of the household). But if their character was so determined, the determination it resulted from could only take place in situations in which the causal factors listed above were present and operative. Consequently, the deceptively general proposition according to which “women are observed to be different from men in a long series of qualities” (*Ibid.*, 3, p. 868), that is intellectually inferior to men and deprived of moral qualities such as courage or fortitude, needed to be severely qualified: it was true only of the social settings in which the currently unknown or “yet-to-be-discovered” causal factors responsible for these character traits prevailed. Because such “familiar maxims” as the one relating to sexual differences were merely “collected *à posteriori* from observation of life” (*Ibid.*, 1, p. 861), their epistemic status was that of “empirical laws”, i.e. uniformities which “holds true in all instances within our limits of observation” (*Id.*). Therefore, the scope of these propositions did not extend beyond these limits, for it might well be the case that different “circumstances” – that is a different arrangement of causal factors – result in different outcomes that might turn out to be beneficial to both individuals and society. As Mill suggested in the *System*’s manuscript, this might well happen in the case of women:

“it becomes customary, perhaps, to give [women] an education more approximating to that of a man, and in the next generation the differences, though still real, are no longer the same” (*Ibid.*, 3, p. 868).

By pointing out that the generalizations describing human character were empirical laws that may hold only for certain times and places and subject to change if circumstances altered, Mill exposed the logical blunder of inferring from the existence of a given state of affairs to its necessity and the impossibility of any alternative to it. In the manuscript of Book V of the *System* (which drew a classification of the different sorts of fallacies), Mill spotted an instance of this blunder in the argument of those who maintained that since women “as a class, have never hitherto been equal in intellectual energy and compass to men,

therefore they are necessarily inferior" (*Ibid.*, V, V, 4, p. 788). This inference, Mill argued, was to be counted among the "fallacies of generalization":

"Their fallacy consists in this, that they are inductions without elimination: there has been no real comparison of instances, nor even ascertainment of the material facts in any given instance. There is also the further error, of forgetting that such generalizations, even if well established, could not be the ultimate truths, but must be results of laws much more elementary; and therefore, until deduced from such, could at most be admitted as empirical laws, holding good within the limits of space and time by which the particular observations that suggested the generalization were bounded" (*Ibid.*, p. 789).

Those who argued that the fact of being a woman implied inferiority with respect to intellectual achievements just fell prey to the shortcomings of induction by simple enumeration. What they did, suggested Mill, was to collect instances featuring property W (being a woman) and property I (being intellectually inferior) and concluded that the former was the cause of the latter, that is that there existed a constant conjunction between the two. Now, as Mill suggested, a "real comparison of instances" would have revealed that other properties, say, E and S (being uneducated and being not in an intellectually stimulating social position) were always associated with W, and could in fact be held as the primary causes of I, since in cases where E and S were present but W was absent (as in the case of, say, working class males), I also obtained. In short, a cautious application of the method of agreement would have spared one a logical howler.

This analysis of the opening sections of the chapter on ethology helps resolve Ryan's concern as to how the *System* carried out "Mill's reforming programme". For the first reformist effect of these pages was to operate as a logical solvent against deep-seated prejudices. If, as T. Ball has remarked, "Mill regarded pernicious political doctrines as the result of flawed reasoning" (T. Ball, "The Formation of Character: Mill's 'Ethology' Reconsidered", p. 29), it was not only because this lack of argumentative rigour fostered ideas or conceptions he was opposed to. It was also because it constituted a serious obstacle to the development of a proper understanding of human phenomena. Hence the usefulness of exposing and criticizing the "faulty modes or methods of reasoning upon which such conservatism rested" (*Id.*).

This way of arguing, which dwelt on the erroneous views and methodological dead-ends associated with unsatisfactory accounts of character formation, might explain that some commentators have judged the *System*'s chapter on ethology to be crippled by a constitutive backwardness. J. Carlyle for instance

claims that the “exposition trips and stumbles, variations in tone from brash certainty to meek insinuation seem misplaced and uncoordinated, and the organization of the argument proceeds in a fashion that can be described as simply backwards” (J. Carlile, *John Stuart Mill and the Writing of Character*, p. 134). Carlile here refers to what she rightly takes to be one of the striking features of the structure of the chapter on ethology, namely the fact that a sustained emphasis on the countless obstacles standing in the way of ethology was followed by Mill’s claim that the “Science of Character” had been “formed” (J. S. Mill, *SL*, VI, V, 4, p. 869). Given the catalogue of problems he had listed and the essentially theoretical nature of his blueprint for ethology, Carlile concludes that Mill’s confidence partakes more of wishful thinking than of a sensible appraisal of the achievements of ethology.

I think two points might help diminish the strength of Carlile’s claim. Firstly, when Mill said that ethology was “formed”, he meant that, although “all things [were] prepared” for the creation of ethology, this science was “still to be created” (*Ibid.*, Sect. 6, p. 872-3). As the correspondence with Comte illustrates and as his comments on how to develop ethology indicate, Mill did not consider that ethology was a fully established science, which had already achieved momentous results. However, if by “established” science one means “constituting a sensible research programme worth implementing”, Mill surely thought that it was the case, even if – and on that I agree with Carlile – he eventually proved too sanguine as to the practicability of the project.

Secondly, the mode of exposition adopted in the chapter on ethology was typical of Mill’s bent at “dramatizing” methodological predicaments, his favourite stratagem consisting in first introducing two opposite but equally unsuccessful solutions to the problem under consideration and then in offering a last theoretical resort of his own<sup>11</sup>. This made the importance of Mill’s contribution stand out, even the more so in the field of “Moral Sciences” in which, as Mill recalled,

“the most sagacious minds have occupied themselves from the earliest date, with every assistance except that of a tried scientific method, and have never succeeded in establishing any considerable body of truths, so as to be beyond denial or doubt” (J. S. Mill, *SL*, VI, I, 1, p. 834),

This was exactly the rhetorical ploy Mill resorted to when it came to assessing the proper way of establishing the laws of the formation of character: if Mill emphasized as much as possible the shortcomings of the previous attempts to

deal with a specific problem, it was in order to introduce his proposal as the eagerly awaited solution of the problem under scrutiny.

To grasp Mill's rhetoric, let us return to these problematic "familiar maxims" and how character traits could be inferred from them. Let us take the claim that women were intellectually inferior to men. What did that generalization refer to? To dispositions to act in a definite way. For instance, to be intellectually inferior was to be unable to compete on a par with others in situations involving certain kinds of mental operations. But surely, Mill suggested, these dispositions to act were dependent on some psychological features, that is on some definite dispositions to think in certain ways, i.e. what was called a character. Accordingly, the laws of how we act depend on the laws of how we think. As seen previously<sup>12</sup>, Mill enthusiastically endorsed the principles and findings of classical associationist psychology. Now the problem was to discover the exact nature of this dependence of behavioural laws on psychological laws.

Could one simply infer the former from the latter? No, for psychological laws were universal laws stating unconditional relations between individual mental events (such as Hume's "correspondence principle", which associated every mental impression with an idea) holding for any human individual, whereas human behaviours were characterized by their variety. What could explain such variety? According to Mill and in line with the typically empiricist approach of associationist psychology, the various mental dispositions on which behavioural dispositions depended were the causal outcome of "the universal or abstract portion of the philosophy of human nature" (*Ibid.*, p. 861), i.e. psychological laws, and a set of environmental factors (what Mill called "circumstances"). Mill therefore arrived at a conception of ethology understood as the

"science which determines the kind of character produced in conformity to those general laws [the laws of psychology], by any set of circumstances, physical or moral" (*Ibid.*, Sect. 4, p. 869).

This account, which echoed that of the correspondence with Comte<sup>13</sup>, gained authentic methodological value only when the procedure for establishing the laws of the formation of character was spelt out in detail. Predictably, it was at this crucial point of his argument that Mill chose to "dramatize" his whole development by emphasizing the serious difficulties associated with the pursuit of ethology. Drawing on what he had said about the variety of causal factors at play in

the formation of character, Mill was at pains to underline that “both the character of any human being, and the aggregate of the circumstances by which that character has been formed, are facts of a high order of complexity” (*Ibid.*, Sect. 3, p. 865). But if so, Mill pointed out, the student of ethology was faced with exactly the same methodological predicament which crippled the natural scientist when she dealt with phenomena resulting from a composition of causes: neither experiment nor observation could help in ascertaining the causal laws giving rise to phenomena.

As for experiment, Mill underlined the impossibility of setting up a scientifically reliable procedure to assess the nature and the extent of the causal influence of the various circumstances on the formation of one’s character traits. For the experimental approach was not only ethically dubious<sup>14</sup>, but also practically unmanageable:

“The instances requisite for the prosecution of a directly experimental inquiry into the formation of character, would be a number of human beings to bring up and educate, from infancy to mature age. And to perform any one of these experiments with scientific propriety, it would be necessary to know and record every sensation or impression received by the young pupil from a period long before it could speak; including its own notions respecting the sources of all those sensations and impressions” (*Id.*).

Two assumptions implied by Mill’s remark on the impossibility of performing ethological experiments are worth noting. Firstly, it was not premised on our inability to modify the “circumstances” under scrutiny. As Mill’s reference to Rousseau’s and Helvétius’ pedagogical writings made clear (*Ibid.*, p. 866), a good part of modern educational theory regarded the exposure to a set of carefully selected and aptly arranged “circumstances” as a necessary condition for one’s successful upbringing. Rather it was due to the inability to take into account accurately all the variables involved. Unlike the astronomer, the ethologist was not deprived of means of altering many of the circumstances of the phenomena she studied, but the profusion of factors seemed to exceed by far her computational capacities. Secondly, this inability to register all the circumstances at play, Mill insisted, was all the more unfortunate given the extreme sensitivity of human character:

“One apparently trivial circumstance which eluded our vigilance, might let in a train of impressions and associations sufficient to vitiate the experiment as an authentic exhibition of the effects flowing from given causes” (*Id.*).

But this also testified *a contrario* to the plasticity of the individual, a feature that was in agreement with Mill's associationist-empiricist approach to the human mind, even if it might have been difficult to conciliate with his reformist endeavours. If even a "trivial circumstance" could have this momentous effects, the task of the educator might be more difficult than generally conceived<sup>15</sup>. In that instance, one might agree with Carlyle that Mill's strategy of exaggerating the obstacles standing on the way of the student of character was counterproductive, since the above assertion rendered the internalization of a character – that is of a set of ingrained purposes and habits – impossible, thereby ruining the very project of an ethology. However, this kind of exaggeration remained an exception throughout Mill's argument.

As for observation, Mill was also keen to underline its obvious shortcomings when used to establish the laws of ethology. Firstly, he argued that the initial step of the procedure resorted to in order to discover the circumstances responsible for a given character proved tricky, since the very object of study was in itself difficult to determine.

"Consider the difficulty of the very first step – of ascertaining what actually is the character of the individual, in each particular case that we examine. There is hardly any living person concerning some essential part of whose character there are not differences of opinion even among his intimate acquaintance; and a single action, or conduct continued only for a short time, goes a very little way indeed towards ascertaining it" (*Ibid.*, p. 866).

This was due to the dispositional nature of character traits, that is the fact that they were capacities to act or react in a definite manner when subjected to certain conditions. And since they were highly dependent on the environment for their manifestation, the ethologist would be subject to the endless task of assessing one's behaviour in various milieus to verify whether or not one had a certain character trait. The obvious drawback of such a method was that when there was no way to observe one's person reactions to a specific kind of situation, the ascription of character traits became impossible, since the absence of manifestation could not be taken as a proof of the absence of the character trait itself. Just as the sugar's dispositional property of being soluble revealed itself when put in a glass of water, the display, say, of warlike virtues could hardly be manifested in a tightly regulated society at peace with its neighbours.

Secondly, the gathering of observations merely amounted to the enunciation of approximate generalizations which were short of providing one

with a detailed appraisal of the causal mechanism involved in the shaping of one's personality:

"We can only make our observations in a rough way, and en masse; not attempting to ascertain completely in any given instance, what character has been formed, and still less by what causes; but only observing in what state of previous circumstances it is found that certain marked mental qualities or deficiencies oftenest exist" (*Id.*)<sup>16</sup>

Thirdly, as any instance of mere observation, such a process was unable to arrive at unconditional statements as to which specific set of circumstances could produce a specific type of character. Besides the dispositional nature of character traits (which rendered them difficult to identify) the plurality of causes was a stumbling block on the road to the establishment of ethological laws, for it might well happen that different arrangements of causal factors lead to the same outcome:

"So numerous and various, moreover, are the circumstances which form individual character, that the consequence of any particular combination is hardly ever some definite strongly marked character, always found where that combination exists, and not otherwise" (*Id.*)<sup>16</sup>

The most one could get by "the most extensive and accurate observation" was a "mere comparative result" (*Id.*) expressed in contrastive terms (for two given populations, one would find different distributions of character trait X). These comparisons could certainly direct investigations towards some elements likely to explain causally the differences registered, but they could not lead on their own to "a real induction" (*Ibid.*, p. 867). In short, observation was no better than experiment for the discovery of ethological laws.

So, if J. Carlile considers that the *System*'s chapter on ethology proceeds in an awkward manner, it is partly because she neglects the rhetorical dimension of the negative preamble with which Mill chose to open his chapter on ethology. Eager to make sure that his contribution would not be overlooked by his readers, Mill used various expository ploys – most notably the "dramatization" of methodological predicaments – to ensure this general recognition of the important part he had taken in the development of the study of human phenomena. In the early 1840s, it was for ethology, as he coined the science he aimed at creating (just as Comte had done for sociology), to secure Mill's place in the intellectual Pantheon. And the greater his theoretical feat, the higher his rank among them. Hence Mill's strategic emphasis on the serious difficulties associated with the

pursuit of ethology. But this was only the first part of his argument: for only a positive theoretical contribution to the new science would mark out Mill's originality as a social scientist.

### C – Ethology and the Deductive Method.

For the careful reader of the previous books of the *System*, the gist of Mill's remedy for the methodological predicaments of ethology is no surprise<sup>17</sup>, since the template for his solution is borrowed from Book III: given that the formation of one's character is the result of a complex of various influences, only the deductive method can be used to account for the outcomes resulting from the plurality of causes productive of one's personality.

“the logical principles according to which this question is to be decided, must be those which preside over every other attempt to investigate the laws of very complex phenomena. For it is evident that both the character of any human being, and the aggregate of the circumstances by which that character has been formed, are facts of a high order of complexity. Now to such cases we have seen that the Deductive Method, setting out from general laws, and verifying their consequences by specific experience, is alone applicable” (J. S. Mill, *SL*, VI, V, 3, p. 865).

Mill's disillusioned comments on the impracticability of the methods of observation and experiment contrast dramatically with his faith in the successful application of the Deductive Method to the establishment of ethological laws: he considers it “the most perfect mode of investigation, and which it [was] one of the principal aims of philosophy to extend” (*Ibid.*, 4, p. 869) and takes its introduction in the “Moral Sciences” as one of the conditions of their improvement. What is more, Mill's account of the Deductive Method is particularly interesting because it intends to single out and clarify two crucial aspects of the explanations of “moral phenomena” otherwise glossed over in the *System* and in the correspondence with Comte<sup>18</sup>: namely the precise logical structure of the explanations of “moral phenomena” and the “tendencial” nature of some of the laws involved in these explanations.

Consider first the structure of the explanations bearing on “moral phenomena” (including character). On that topic, Book VI improved on the views previously presented to Comte by distinguishing more clearly the nature and role of the different elements called on in these explanations.

In Section 4 of Chapter V, Book VI, Mill argues that the ethological laws accounting for a specific character trait or a particular mental capacity result from the joint consideration of the “laws of mind” and a certain set of “circumstances”:

“The laws of the formation of character are (...) derivative laws, resulting from the general laws of the mind; and they are to be obtained by deducing them from those general laws; by supposing any given set of circumstances, and considering what, according to the laws of mind, will be the influence of those circumstances on the formation of character” (*Id.*).

However, a few pages later, Mill states that “Ethology, the deductive science, is a system of corollaries from Psychology, the experimental science” (*Ibid.*, Sect. 5, p. 872). Since these descriptions of ethological laws are not equivalent, some clarification is to the point here.

If by “corollary”, one understands a proposition appended to another which has been demonstrated, and following immediately from it without new proof, one might be tempted to view ethological propositions as logical consequences drawn from the laws of psychology. Now, it is not sure that this is the right way to understand the relation existing between ethological and psychological laws. For what distinguished ethological propositions is the fact that, by feeding in the set of circumstances which give their “matter” to the laws of the association of ideas – the basic generalizations Mill took to be constitutive of psychology –; they enable one to discover the laws which give rise to the character traits of individuals or groups. The overall picture one ends up with is as follows: laws of ethology are obtained by specifying how the “laws of mind” (psychological laws) operate in given social, individual, or physiological conditions, these conditions being expressed under the form of lawlike statements describing general cases or situations.

The already quoted example Mill borrows from James Martineau might help to understand how the scheme works<sup>19</sup>. Let us consider how “Imagination”, *i.e.* the turn of mind which consists in conceiving “things in pictures and in the concrete, clothed in all their attributes and circumstances” (*Ibid.*, III, XIII, 6, p. 481) which Mill holds to be typical of painters and poets, is formed. According to the associationist psychology Martineau and Mill endorse, when impressions are associated synchronically, they give rise to stronger associations of ideas than if they were merely sequentially associated. It is a psychological law that experience of synchronous impressions results in stronger associations of ideas than

experience of successive impressions “in proportion to the pleasurable or painful character of the impressions” (*Id.*). For instance, let us assume that the feeling of man’s humble condition can be evoked by the contemplation of majestic peaks and the feeling of the purity of nature might be felt at the view of an unspoilt lake. According to the laws of association, the two feelings will be more strongly associated if the two impressions appear synchronically (just as when one seizes in one glance an imposing mountain scenery composed of an unspoilt lake surrounded by majestic peaks) than if they appear sequentially (just as when one looks first at the lake and then at the peaks). Furthermore, Mill recalls Martineau’s claim that “in minds of strong organic sensibility [that is in individuals with sensory physiological dispositions that render them more sensitive to perceptual experience] synchronous associations will be likely to predominate” (*Id.*). In the light of these elements, one can surmise the following ethological law for the formation of “Imagination”: given the laws of association of ideas, persons endowed with a “strong organic sensibility” who have been subjected to a wide range of experiences which engender in them a feeling of elation, and have turned these experiences into objects of aesthetic enjoyment can be expected to develop a tendency to conceive “things in pictures and in the concrete, clothed in all their attributes and circumstances” (*Id.*), that is an imaginative turn of mind. So, it seems to be the case that by “deduction” of ethology from psychology, Mill means the inferential operation by which the consideration of the “circumstances” (lawlike statements relating to physiological constitution, kinds of experience, etc.) indicates which laws of psychology will be at work and what kinds of character traits they are likely to produce.

A comparison made by Mill supports this interpretation of the “deduction” of ethology from psychology:

“Ethology stands to Psychology in a relation very similar to that in which the various branches of natural philosophy stand to mechanics. The principles of Ethology are properly the middle principles, the *axiomata media* (as Bacon would have said) of the science of mind: as distinguished, on the one hand from the empirical laws resulting from simple observation, and on the other from highest generalizations” (*Ibid.*, VI, V, 5, p. 870).

If one accepts the parallel, the following picture ensues: Newton’s laws state the universal laws of motion; by stipulating the initial conditions of the system in which the universal laws apply (i.e. the planetary system consists of large mass surrounded by X bodies, etc.), one is able to deduce the laws of the actual

planetary motions – Kepler's laws; which in turn explain astronomical regularities (what Tycho Brahe observed). Therefore it is not the case that the “middle principles” or *axiomata media* (Kepler's laws and ethological laws) are entailed by the “highest generalizations” (Newton's laws and psychological laws) alone.

I think this example illustrates what N. Capaldi wants to convey when he says that Mill means that ethology is deduced from psychology

“only in the sense that the laws of psychology are more general than the laws of ethology. We should recall that ethology is ‘deduced’ not only from the laws of psychology but from environmental conditions as well” (N. Capaldi, “Mill's Forgotten Science of Ethology”, p. 418).

Accordingly, some consequences derived from the laws of psychology (which are by definition held to be universally true) might turn out to be false (i.e. do not correspond to any real state of affairs) because, say, the circumstances they suppose are absent or non-existent, just as in a world constituted differently Kepler's laws would not be true. This marks out, as Capaldi also underlines, the autonomy of ethology since its propositions, notwithstanding the fact that they have to be consistent with psychological laws, cannot be “deduced” in the sense of being eliminated using psychological laws:

“The laws of psychology do not include consideration of the circumstances which affect human behaviour, and thus the concepts which embody the laws of the influence of circumstances are not eliminable in favour of psychological concepts” (*Ibid.*, p. 417).

So, on the one hand ethology cannot do without psychology as the inferential basis from which it draws its tentative explanations of the formation of human character (hence Mill's defence of psychology against Comte's strictures); on the other hand, it is the fact that it takes circumstances into account that connects ethology with the actual world of flesh-and-blood characters. More precisely, these circumstances are similar to the initial conditions that serve as factual premises in physical explanations: Mill conceives them as being descriptions of the various social, individual, and physiological conditions intervening in the formation of human character. Finally, both features make ethology the “Exact Science of Human Nature” (J. S. Mill, *SL*, VI, V, 4, p. 870). Firstly, in the logical sense that ethological laws are incorporated in a larger deductive structure dealing with causal mechanisms and not merely rough generalizations. Secondly to the

extent that it comes up with explanations for the various laws of the formation of character which can be empirically tested.

One important aspect of this model is that a proper understanding of “moral phenomena”, and consequently of character, requires at least in theory the consideration of the causal role of physiological factors, as Mill recognizes both in the correspondence with Comte and the preceding chapter of the *System* (VI, IV: “Of the Laws of Mind”)<sup>20</sup>. The chapter on ethology does not depart from this principled position, since in one of the definitions offered for the science of the formation of character Mill appealed to “physical circumstances”, which certainly refers to physiological factors:

“Ethology will serve for the subordinate science which determines the kind of character produced in conformity to those general laws [laws of psychology], by any set of circumstances, physical and moral” (*Ibid.*, p. 869).

But, just as in the correspondence with Comte, the acknowledgment of the causal role of physiological factors does not lead to a theoretical structure in which they play a positive inferential role. The reason Mill invokes to resist the use of biological data in ethological theory is primarily epistemic and mirrors the doubts he has already expressed to Comte: what is problematic, Mill argues, is

“the degree of uncertainty which still exists as to the extent of the natural differences of human minds, and the physical circumstances on which they may be dependent” (*Ibid.*, 6, p. 873).

Yet, one may claim that to dispose of physiological data because they are uncertain is to deprive ethology of relevant material: one has to work with whatever bits of knowledge available, however imperfect.

To that objection, it is likely that Mill would have a twofold reply. On the one hand, as the example of the ethological law of the formation of the imaginative turn of mind illustrates, Mill is ready to take into account certain physiological determinants (such as the various “organic sensibilities” of individuals) as long as they are compatible with the associationist theory of mental phenomena. What matters is that character traits and mental dispositions result from the kind of sensory experience favoured by empiricists, that is that complex mental states are built out of more basic discrete, atomic mental states. In that respect, it would be hard for Mill to deny that the laws of sensory physiology explaining the causal mechanism, which turned sensations into impressions and ideas, should be

altogether ignored. In fact, Mill welcomes the consideration of this kind of physiological information because he does not see it as a decisive threat to his environmentalist approach of individual differences. For Mill assumes that only in a few extreme cases are differences in organic sensibility to explain “the natural differences of human minds”, since when “considering mankind in the average or *en masse*” (J. S. Mill, *SL*, VI, V, 6, p. 873), individuals appear to be endowed with the same potential for perceptual receptiveness. In other words, given his presupposition that most people are on a par in terms of organic sensibility, the mental differences existing between them should be ascribed to other factors than physiological ones.

On the other hand, as seen previously<sup>21</sup>, what Mill objects to is the question-begging postulation of innate “faculties” to account for specific mental abilities or character traits, as when phrenologists explain women’s love for their children by the existence of a typically female inborn faculty of “philoprogenitiveness”. Moreover, given the utter lack of empirical support gathered for the localizations of these faculties, Mill was indeed entitled to think that one should rather do without phrenology<sup>22</sup>.

However, one should be clear about what exactly Mill is entitled to claim here with respect to the respective actual influences of the various factors at work in the formation of characters traits and mental abilities. His considered position, which favours environmentalist over innatist explanations, does not offer any knock-down argument against the kind of organicist views upheld by Comte and his likes: as long as an actual complete deduction of ethological laws has not been performed, which would require a dramatically improved kind of biological knowledge, environmentalism and organicism remain equally speculative.

The second feature of the use of the Deductive Method in ethology worth mentioning is the qualification Mill feels compelled to add right after having singled out the dependence of the science of the formation of character on psychology. The “exactness” of ethology, Mill argues, is of a special sort, which is marked out by the kind of lawlike statements it arrives at. For, Mill claims,

“It is (...) (as in all cases of complex phenomena) necessary to the exactness of the propositions, that they should be hypothetical only, and affirm tendencies, not facts” (*Id.*).

To what is this “tendencial” nature of ethological statements due? One might invoke two different but complementary reasons. On the one hand, one might take the term “hypothetical” in the weak epistemic sense of “likely but not demonstrated”: in that respect, as Mill takes pains to emphasize, ethological laws will remain “hypothetical” as long as all the circumstances entering into the formation of human character have not been exhaustively considered, a prospect far removed, if not unattainable, given the cognitive limits of the human mind. Furthermore, shortcomings in the procedure for the computation of the joint effect of these initial conditions might also compromise the accuracy of explanations. This explains why, according to Mill, it would be

“vain to expect (however completely the laws of formation of character might be ascertained) that we could know so accurately the circumstances of any given case as to be able positively to predict the character that would be produced in that case” (*Ibid.*, p. 869).

However, Mill puts forward a second reason why ethological laws are tendency laws which, unlike the first, is not dependent on how we come to know ethological phenomena, but relates to the way the various causes responsible for these phenomena interact. As Mill makes clear, the formation of a given character is the result of the influence of an “aggregate of circumstances” (*Ibid.*, Sect. 2, p. 865). As shown previously<sup>23</sup>, the gist of the Deductive Method is to appraise separately the laws of the different causes involved in the production of the phenomenon under consideration (the “inductive” step as Mill calls it) and then to determine which effects ensue from their compounding (the “ratiocinative” step). Now, the problem is that, in ethology as in physics or political economy, causes can counteract one another. Hence, ethological propositions “must not assert that something will always, or certainly, happen; but only that such and such will be the effect of a given cause, so far as it operates uncounteracted” (*Ibid.*, p. 870).

To take up an example from Chapter I<sup>24</sup>, it might be reasonable to maintain, as Mill does, that if women were educated so as to be able to earn their livelihood, i.e. were trained in a certain profession, they would be exposed to the virtues generally associated with such a training (perseverance, ingenuity, etc.) and would become self-reliant. In other words, circumstance X (professional training) moulds character trait Y (self-reliance). However, it is equally reasonable to think that the character trait of self-reliance will thrive only if women can actually try it in real-life situations, i.e. if social arrangements (i.e. a job market open to women, a

sharing of the workload of parental duties, etc.) sustain the development of this character trait. In that case, circumstance X' (the exclusion of women from the public sphere) can be said to thwart Y and foster  $\neg Y$  (dependence). If it turns out that the influence of X' prevails over that of X, then character trait Y might not result because of the intervention of countervailing circumstance X'. But still, Mill argues, it is accurate to claim that 'professional training tends to foster self-reliance in women' is "a scientific proposition", since ethological claims "being assertive only of tendencies, are not the less universally true because the tendencies may be counteracted" (*Id.*).

Mill concludes that the "tendencial" nature of ethological statements does not in any way compromise the reformist potential of the science of the formation of character. Of course, one might have hoped that ethology, as the science which corresponds to the art of education, would infallibly provide us with the means to realize our ends, i.e. to arrange the various circumstances so as to produce the character most productive of happiness for each individual. Unfortunately, as previously indicated, the multiplicity of agencies involved in the formation of character prevents one from being able to "predict the character that would be produced" (*Ibid.*, p. 869) in specific cases. But still, even if a complete knowledge of causes at work in specific cases and of the way they interact is out of reach, a patchy knowledge of tendencies will do, for it enables us to expect with confidence that a certain set of circumstances will bring about the desired effect.

"It is enough that we know that certain means have a tendency to produce a given effect, and that others have a tendency to frustrate it. When the circumstances of an individual or of a nation are in any considerable degree under our control, we may, by our knowledge of tendencies, be enabled to shape those circumstances in a manner much more favourable to the ends we desire, than the shape which they would of themselves assume. This is the limit of our power; but within this limit the power is a most important one" (*Ibid.*, 4, p. 869)<sup>25</sup>.

For example, it is likely that women who have been professionally trained and who are free to compete on a par with men on the job market will develop a capacity for self-reliance. If not, the ethologist will have to search for sufficient supplementary causes to explain this failure and hand in to the reformer the means, if any, to remedy the situation. Ethology allows us to predict the improvement of outcomes following the introduction of a positive tendency even if we cannot predict the exact outcomes. If we know that X tends to produce Y, then

introducing X should improve things (so long as we do not introduce contraveners) even though we cannot calculate the exact output since we are ignorant of all the causes. In situations of incomplete knowledge, that is the best one can hope for.

#### **D – The Ethological Fiasco: Complementary Explanations.**

Although commentators have seldom failed to underline Mill's ethological fiasco, only a few of them have attempted to investigate the possible reasons of this failure. In this section, I will review some explanations that have been adduced for it in the secondary literature and assess their relevance. In doing so, I will emphasise one factor that I hold to be crucial in Mill's failure, namely his inability to come up with a proper account of how to "compound" the various ethological laws so as to arrive at the explanation of actual characters.

As its title suggests, L.S. Feuer's "John Stuart Mill as a Sociologist: The Unwritten Ethology" deals with the very question we are now addressing. Feuer declares in the opening sections of his article that he intends to single out the "intellectual problems" that made it impossible for Mill, despite "his immense learning, practical experience, and logical acumen" (L. S. Feuer, "John Stuart Mill as a Sociologist", p. 87), to write the ethological treatise which was to provide the theoretical basis for his reformist endeavours.

His account takes as its starting point the contrast existing between Mill and other nineteenth century thinkers such as Hegel, Marx, Spencer, and of course Comte: for whereas the latter came up with historical (dialectic, materialist, evolutionist, or positivist) laws of human development, Mill never arrived at "a system encompassing the evolution of humanity" (*Ibid.*, p.86). What may explain this difference?

According to Feuer, Mill's prejudice-free approach, unlike that of ideologically biased thinkers, enabled him to

"do justice to all the competing drives and motives of human nature; he would never banish from his consciousness the knowledge of the many-sidedness and many levelledness of social reality" (*Ibid.*, p. 87).

Feuer's point seems to be the following: contrary to all those who tried to reduce the historical development of mankind to a causal scheme into which one single factor would take precedence over the others (the self-realization of the universal

*Geist* in Hegel's dialectics; the intellectual impetus in Comte's law of the three stages; the economic factor in Marx's historical materialism; or the progressive rise of individualism in Spencer's evolutionary liberalism), Mill's recognition of the varieties of, and tensions between, the different phenomena occurring within society prevented him from giving into the illusory belief in an all-encompassing law that would account for the whole of human reality, past, present, and future. For instance, Feuer claims, Mill recognized the existence of two empirical sociological laws "which stood as contraries to each other – progress and mediocritization" (*Ibid.*, p. 90) – but nonetheless coexisted to give modern societies their characteristic dynamics. Similarly, Mill distinguished between various mental dispositions – craving for truth or the spirit of liberty, bent for domination or the spirit of conformity – which ran counter to each other. Now, at this point of his argument, it seems that Feuer loses track, for the impression one gets from reading him is that Mill failed in establishing ethology because he acknowledged the varieties of (and tensions existing between) certain social or "moral" phenomena. But one might be tempted to rejoin that the existence of different, or even contradictory, mental dispositions in a given population was exactly the kind of facts ethology was supposed to provide a rationale for.

For instance, it was the aim of ethological analysis to explain why in modern European societies men generally seemed more equipped to carry out abstract intellectual tasks and had developed a taste for independence whereas women were less capable of the former and not driven by the latter. After all, ethology was first and foremost the science of the influence of circumstances on the human mind and the formulation of its results in terms of "tendencies" testified to the variability of characters. Accordingly, it is very unlikely that the recognition of the "competing drives and motives of human nature" (*Ibid.*, p. 87) caused Mill to discard ethology: rather, it might have constituted a good incentive to pursue it, so as to demonstrate the real causes of the differences in character traits between individuals.

On the other hand, Feuer's analysis points towards a genuine obstacle to the development of ethology: it was not so much the contradictoriness of the "competing drives and motives of human nature" that was at issue as the sheer number of them. For it might simply have been the case that the mere taking into account of the various causes explaining an actual human character proved too

complicated or too time and energy consuming. This suspicion is supported by the fact that Mill never developed a precise and workable classification of the various circumstances that were supposed to give rise to the different character traits: as seen in the previous accounts of ethology he gave, Mill always remained at a very high level of abstraction when it came to list the different kinds of circumstances. He generally contented himself with distinguishing “social” from “physiological” circumstances, without trying to specify further what these two sets corresponded to<sup>26</sup>. But in order to get off the ground, the whole ethological project needed such a classification of circumstances. Without it, one could not even start to assess inductively and separately the various ethological laws that produced actual characters and on which the use of the Deductive Method was premised.

This lack of elementary ethological laws would in turn account for Mill’s incapacity to arrive at sociological laws. Once again, contrary to what Feuer seems to suggest, Mill’s problem was not so much that contradictory empirical generalizations existed, for one was dealing with tendencies which could counteract one another. The challenge consisted in explaining them. In the light of the architectonic of the “Moral Sciences” set out in Book VI of the *System*, it indeed seemed that the predicament lay in the middle principles that were supposed to link psychological laws to sociological generalisations, namely the ethological *axiomata media*. As Mill made clear, he took uniformities bearing on collective phenomena to be logically dependent on laws relative to the character of the individuals involved in those phenomena:

“The laws of the phenomena of society are, and can be, nothing but the laws of the actions and passions of human beings united together in the social state. Men, however, in a state of society, are still men; their actions and passions are obedient to the laws of individual human nature. (...) Human in society have no properties but those which are derived from, and may be resolved into, the laws of the nature of individual man” (J. S. Mill, *SL*, VI, VII, 1, p. 879).

In brief sociology depends on ethology. Now, granted one concurred with Mill that both the psychological laws from which ethological considerations were to be deduced and the sociological empirical laws were already available, it would be natural to ascribe Mill’s inability to compete with his contemporaries in terms of grand historical panorama to some ethological shortcomings, either in the derivations of ethological propositions themselves or in the derivation of sociological laws from them. In any case, Feuer rightly points towards a first likely

reason for Mill's ethological fiasco: *the sheer number of "circumstances" relevant to ethology that might have prevented the working out of a manageable theory from which to deduce explanations for character formation and the absence of a conceptual classification to sort out the different kinds of circumstances involved in the formation of character traits.*

J. Carlile also takes "the problem of method" to be "the main subject of the chapter" (J. Carlile, *John Stuart Mill and the Writing of Character*, p. 138-9) on ethology in the *System*. Besides various criticisms bearing on the argumentative and rhetorical aspects of the chapter – which I have tried to defuse in an earlier section<sup>27</sup> –, J. Carlile focuses on one point that she believes partly account for the failure of Mill's ethology.

J. Carlile maintains that the elusiveness of character does not render it amenable to a genuinely scientific study. She suggests that the following quote from Mill's chapter on ethology might be taken as "an indirect recognition of its central problem" (*Ibid.*, p. 137):

"Consider the difficulty of the very first step – of ascertaining what actually is the character of the individual, in each particular case that we examine. There is hardly any living person concerning some essential part of whose character there are not differences of opinion even among his intimate acquaintance; and a single action, or conduct continued only for a short time, goes a very little way indeed towards ascertaining it" (J. S. Mill, *SL*, VI, V, 3, p. 866).

From this, she concludes:

"If the object under examination is the character of a specific individual, if that object cannot be apprehended because, as Mill points out, it is defined only by the opinions of those who observe it, (...) then it is pointless to try to determine the causes that have created an indeterminate outcome" (J. Carlile, *John Stuart Mill and the Writing of Character*, p. 137).

However, the conclusion reached by Carlile does not apply to Mill's conception of ethological inquiry. As she herself recalls, this quotation is "buried in the middle of the chapter, midway in the discussion of a method that Mill rejects as inapplicable to his endeavour" (*Id.*). That method was, as we have seen, that of observing actual instances of character traits and trying to infer their causes from these observations. The drawback of such a procedure, according to Carlile, is that the identification of one's character seems to be subjective and therefore highly unreliable, even the more so because of the dispositional nature of character traits. But the Deductive Method advocated by Mill preserves ethology against the threat of subjectivism and indetermination. Firstly, a character trait will be ascribed to an individual if two conditions are met: 1) if the character trait can be deduced from

the laws of psychology (which are universal generalizations, and therefore are not person-relative: they apply to any normal human mind whatsoever) and the set of circumstances (such as education, social position, etc., which are observable conditions) the ethologist knows the subject has been exposed to; and 2) if in specific conditions, the individual exhibits the character trait considered. Such a procedure dispels the charge of subjectivity, and that is why, far from making “a virtue of (...) this necessity” of resorting to the Deductive Method, Mill wholeheartedly endorsed its use<sup>28</sup>.

The issue of indetermination is trickier: character traits are dispositions to the extent that they are dependent on the environment for both their formation and their manifestation (especially in the sense that circumstances can counteract one another and thereby prevent the manifestation of character traits). This explains, as Mill claims, that “a single action, or conduct continued only for a short time, goes a very little way indeed towards ascertaining it” (J. S. Mill, *SL*, VI, V, 3, p. 866). But this has nothing to do with any intrinsic indetermination of human character: rather, it is the consequence of our limited knowledge of the influence of circumstances in the formation and manifestation of one’s character. Accordingly, one might reasonably hope that ethology, by studying one by one the laws of the different sorts of circumstances, could better our predictions about one’s actions or reactions in a given situation, even if it is likely that nobody would be able to know all the relevant laws and thus predict the exact outcomes.

However, one can still take on board a critical point suggested by Carlile’s analysis with regard to the difficulties associated with the precise identification of characters. For, in order to pursue the Deductive Method, one needs specific outcomes to deduce so as to corroborate ethological explanations – the third step of the method called Verification. But here, as Carlile underlines, it seems that one cannot even delineate a set of outcomes – a definite set of character traits – in the first place, which renders the whole procedure otiose. To use the astronomical parallel favoured by Mill, it would be just as if one was deprived of Kepler’s laws and nonetheless tried to test the adequacy of Newton’s laws. Of course, the attempts at deduction could help sort out what the outcomes might be (e.g. elliptical orbits *vs* something like them consistent with astronomical observations but not deducible from Newton’s laws). But still, it would be incredibly difficult to get started if our knowledge of the relevant outcomes was too weak<sup>29</sup>, as seemed to

be the case in ethology. Accordingly, one might list as a serious methodological predicament *the lack of precise ethological empirical generalisations against which to test ethological deductions*.

The last reason for the failure of ethology I review in this chapter focuses on the method recommended by Mill for the pursuit of ethological investigations, namely the Deductive Method. According to F. Wilson<sup>30</sup>, Mill's inadequate understanding of the requisite of the Deductive Method when dealing with complex phenomena (either material or "moral") crippled his general conception of scientific explanation. Now, Wilson has not argued specifically that the failure of ethology resulted from this incorrect grasp of the Deductive Method. So I will first show how one may extend Wilson's general claim about Mill's Deductive Method to the particular case of ethology. Secondly, I will argue that even if Wilson's criticism in fact does not hold against Mill, it nonetheless points towards a serious defect in Mill's account, *i.e.* its silence about the manner in which the different ethological laws compound to produce an actual instance of character.

Let us first turn to the way one might want to extend Wilson's general claim about Mill's misunderstanding of the Deductive Method to ethology. Mill's general strategy when it came to studying complex phenomena resulting from a composition of causes was to recommend the use of the Deductive Method, that is the appraisal of the joint effect of the various causes at work in the case at hand. As already discussed, this method consisted in three steps: firstly, one listed the different variables concerned and the laws according to which they exercised their influences (Induction); secondly, one ascertained the result of the interaction of the different variables given their specific laws (Ratiocination); thirdly, one checked that the conclusions deduced were consistent with the empirical generalizations available, if any, or some given phenomena (Verification). As Mill explained, complex phenomena were the outcome of "an intermixture of laws, producing a joint effect equal to the sum of the effects of the causes taken separately". Accordingly, the "law of the complex is explained by being resolved into the separate laws of the causes which contribute to it" (*Ibid.*, III, XII, 2, p. 464).

As Mill made clear, intellectual and moral phenomena were complex phenomena. Consequently, they were said to be deduced from the ultimate laws of psychology and the "circumstances" to which individuals were subjected. Now the number of "circumstances", that is of the variables, that would explain similarities

and differences between individuals was so considerable as to render observational or experimental approaches to character traits impracticable. On the other hand, Mill assumed that some of these circumstances weighed more in the process of the formation of the human character: education and social position were among those, as well as the “effect of institutions or social arrangements upon the national character” (*Ibid.*, VI, IX, 4, p. 905)<sup>31</sup> and the commercial and industrial conditions typical of modern societies which were the objects of political economy<sup>32</sup>. By contrast, Mill downplayed the causal influence of what he termed “physical circumstances”. However, and irrespective of Mill’s own bias in favour or against the respective weight of these various factors in the explanation of human character, the procedure for arriving at ethological conclusions would call for the taking into account of a complex set of circumstances. For a person’s character was the outcome of the interaction of different kinds of circumstances, *i.e.* the result of a process of what Mill called a “composition of causes”. Hence the necessary application of the Deductive Method to ethology. However the success of the extension of the Deductive Method to mental phenomena was premised on the fact that Mill actually got the workings of the general method right. It is Wilson’s contention that Mill did not. An example might help to see his point.

Out of the stock of illustrations he resorted to in the *System*, Mill held the example furnished by astronomy as the “most perfect” (*Ibid.*, Book VI, Chap. IX, Sect. 1, p. 895) to characterize the essence of the Deductive method<sup>33</sup>. The case of the explanation of the motions of the planets in the solar system indeed gives a fairly good idea of what Mill had in mind, especially when it came to accounting for the “ratiocinative” step of the deductive process. Wilson draws almost exclusively on it to support his claim that Mill got the details of the Deductive Method wrong. Imagine one is willing to predict the position of a given planet in the solar system for a given date. A way to proceed is to arrange the solar system (that is the various bodies relevant to the case at hand, *i.e.* the sun and the seven planets known in Mill’s days) in sub-systems composed of two bodies for which it is relatively simple, thanks to Newton’s laws, to compute the motions the objects would have in case this system would be isolated. This is the inductive step of the procedure: the different forces at work in the case considered are ascertained independently from each other.

What about Ratiocination? Mill held that

“if we happen to know what would be the effect of each cause when acting separately from the other, we are often able to arrive deductively, or *à priori*, at a correct prediction of what will arrive from their conjunct agency” (*Ibid.*, III, VI, 1, p. 370).

Wilson argues that Mill’s above statement assumed that one is in a position to deduce the state of the system at large from the knowledge of the laws of the subsystems *alone*. According to Wilson, Mill had it that complex phenomena were the result of the “*conjunct agency*” (*Id.*) of simple causes, and that “the joint effect of a plurality causes is identical with the *sum* of their separate effects” (*Ibid.*, p. 371). What is missing from Mill’s account, Wilson contends, is “a knowledge of additional initial conditions telling one the relational structure by which the objects are arranged in the complex system” (F. Wilson, *Psychological Analysis*, p. 91) and a *composition law*<sup>34</sup>, that is a law “that enables one to deduce the law for the complex systems from this structural knowledge and from the laws for the simple systems” (*Id.*).

Taking up the case of planetary motions, Wilson claims that if one were to proceed as Mill advocated, it would be

“much as if Newton failed to take into account the relative positions of the planets when he inferred the forces acting in the solar system from the assumption that gravity would act among the planets and the sun taking them pairwise” (F. Wilson, “Mill on Psychology and the Moral Sciences”, p. 244).

In particular, Wilson argues that it would ignore the composition law governing the interaction between the elementary systems, namely the law of vector addition of accelerations or forces<sup>35</sup>. Without these ingredients, Wilson concludes that it is not possible to achieve the deductive process leading to the explanation of complex phenomena. But if Mill really misconceived the general requisites of the Deductive Method, this misunderstanding is very likely to have affected his conception of ethology, since Mill held the Deductive Method to be the only procedure capable of coping with “moral” phenomena. This might in turn partly explain why the science of the formation of character never got off the ground. For ethology was all about discerning the respective influences of the various “circumstances” (physical, “moral”, and social) responsible for the shaping of one’s personality and about ascertaining of how they interacted. But just as it was impossible in astronomy to predict the position of a planet in the absence of a knowledge of the various forces to which it was subjected and how the latter were to be compounded, it was impossible to deduce the character of a person or a group in

the ignorance of the “forces” which conditioned it and of the manner in which they interacted. In short, Mill’s blindness as to the importance of a composition law ranging over the relations existing between the different kinds of “circumstances” and his subsequent incapacity to establish one might have partly accounted for his inability to bring his ethological pet-project to fruition.

Let us now discuss the above explanation of Mill’s ethological failure. For clarity’s sake, I think it is important to distinguish its twofold nature. For, whereas I do not believe that Wilson’s reading of Mill’s general conception of Deductive Method is accurate, I nevertheless agree that Mill’s inability to come up with a sensible candidate for a law of composition for ethology might have prevented him from developing the science of character formation.

As to the first aspect of the question – did Mill really misunderstand the way the Deductive Method operates? -, I fear that Wilson’s argument operates as a *reductio ad absurdum* of his own claim. For, on the face of it, it would be very unlikely that Mill, who rested his analysis of the composition of causes in Book III, Chap. VI, Sect. 1 & 2 of the *System* primarily on the example of mechanics, would have neglected to incorporate in his account of this kind of causal interaction some of the relevant facts (namely the relative positions of the planets), as Wilson would have it. The unlikelihood of such an oversight from Mill seriously undermines the plausibility of Wilson’s claim.

Furthermore, there is nothing in what Mill says that suggests that the initial conditions specifying the relational structure by which the objects are arranged in a complex system such as the solar system can be overlooked. To be sure, Mill claims that

“if we happen to know what would be the effect of each cause when acting separately from the other, we are often able to arrive deductively, or *à priori*, at a correct prediction of what will arrive from their conjunct agency” (*Ibid.*, III, VI, 1, p. 370).

But Mill does not say that this is *all* we need. So one might wonder why in the case of celestial mechanics Wilson exacts from Mill that he assumes that we do not need to know some facts which are actually relevant to the phenomena we consider. If the explanation of cases of composition depends on relational facts about their causes, why think Mill would not expect to use these facts?

As to Mill’s alleged omission of a composition law that would enable one to deduce the laws for the complex phenomena from the laws for of its causes, I

admit I cannot make sense of Wilson's claim, especially when it is considered in the light of the example of celestial mechanics: Sect. 1 and 2 of Chap. VI, Book III of the *System* clearly testifies to Mill's awareness of the necessity of having a law to compound the different causes involved in the production of motion, since he modelled his account of the "Composition of causes" after what he called the "principle of the Composition of Forces" (*Ibid.*, p. 370), that is on the law of vector addition of forces in mechanics. In short, it appears that Mill's general account of the Deductive Method neither discarded the consideration of relational facts in the explanation of complex phenomena nor overlooked the necessity of relying on a law of composition.

I nevertheless agree that Mill did not provide an adequate account of the scientific method appropriate for ethology, since he was unable to come up with a sensible candidate for a law of composition ranging over "moral" phenomena. Of course, when he dealt with political economy, Mill assumed that the law of composition dictating how the separate effects specified by the different tendency laws combine when a number of causes act jointly was modelled on the law of vector addition at work in Newtonian mechanics<sup>36</sup>. But in that very case, the only mental cause to consider was the "desire for wealth". To be sure, Mill acknowledged that a realistic explanation of men's characters and conducts would have to take into account a myriad of other moral and intellectual features. But he never ventured any hypothesis as to how they would combine. And in that regard, it does not seem that the model offered by mechanics describes adequately the conflicting compounding of opposite character traits characteristic of some instances of human nature.

For instance, only a very shallow psychologist would claim that one's tendency for frankness and one's concern for others' feelings would counteract one another so as to result in a state of quiet indifference, just as two opposite forces exerted on a body would result in rest. A much more realistic picture would have it that such conflict would produce some sort of moral discomfort. In another vein, one may suggest that when reinforcement of certain character traits goes past a certain limit, it brings about an ethological feature opposite to the one that was aimed at: for example, an education focused on the development of autonomy and self-reliance might induce insecurity and indecisiveness if those who are subjected to it cannot cope with the ever more demanding trials imposed on

them. In that case, conditioning does not add up like vector forces. More generally, Mill gave no reason as to why the composition law for ethological phenomena might take the form of a vector addition and fell short of proposing any sensible candidate for such a role.

With this last reason, one can conclude by singling out three likely causes for the failure of Millian ethology: 1) *the sheer number of “circumstances” relevant to ethology which prevented the working out of a manageable theory from which to deduce explanations for character formation and the absence of a conceptual classification to sort out the different kinds of circumstances involved in the formation of character traits* 2) *the lack of precise ethological empirical generalisations against which to test ethological deductions* 3) *the absence of a composition law governing the combination of ethological causes*. Given the obstacles standing in the path of its development, the prospects of an ethological settlement of the question of sexual equality were somewhat bleak. But, if so, was Mill left deprived of any support for his case against the subjection of women? To this question, I will now turn.

---

<sup>1</sup> At least one of Mill's statements in the *System* indicates that he recognized the possibility that both the environmental and biological could be sufficient to explain character traits: see *infra* n. 15.

<sup>2</sup> Complementary accounts of the prospects and failure of Millian ethology can be found in: N. Capaldi, “Mill's Forgotten Science of Ethology”, *Social Theory and Practice*, 1973, 2/4, pp. 409-20; L.S. Feuer, “John Stuart Mill as a Sociologist: The Unwritten Ethology”, in J.R. Robson & M. Laine (eds.), *James and John Stuart Mill: Papers from the Centenary Conference*, Toronto: University of Toronto Press, 1976, pp. 87-110; D.E. Leary, “The Fate and Influence of John Stuart Mill's Proposed Science of Ethology”, *Journal of the History of Ideas*, 1982, 43/1, pp. 153-162; J. Skorupski, *John Stuart Mill*, Chap. 8, Sect. 5; J. Carlile, *John Stuart Mill and the Writing of Character*. Athens & London: The University of Georgia Press, 1991, esp. Chap. 3 (“Ethology as Politics: The Character of Marginal Groups”); and T. Ball, “The Formation of Character: Mill's ‘Ethology’ Reconsidered”, *Polity*, 2000, 18/1, pp. 25-48.

<sup>3</sup> See J. S. Mill, “Writings of Alfred de Vigny”, in J. S. Mill, *Autobiography*, pp. 463-501.

<sup>4</sup> See J. S. Mill, “Michelet's History of France”, in J. S. Mill, *Essays on French History and French Historians*, pp. 217-255. This review appeared in the *Edinburgh Review* in January 1844, just after the publication of the *System*.

<sup>5</sup> According to G. Varouxakis, Mill's statements on the racial determinants of human character testified to his “deliberate effort to concede as little importance as possible to race and other physical factors” and were motivated by “a strong determination to stand by certain assumptions about rationality and capacity for improvement that were dear to him” (G. Varouxakis, *Mill on Nationality*. London & New York: Routledge, 2002, p. 52). This view tallies with Mill's equalitarian positions with respect to sex differences. See also J.M. Robson, “Civilization and Culture as Moral Concepts”, in J. Skorupski (ed.), *The Cambridge Companion to Mill*, pp. 338-71 (especially pp. 353-4 and 358).

<sup>6</sup> For instance, almost at the end of his correspondence with Comte, whom he told that he “shall devote [his] main effort to this other great enterprise [i.e. ethology]” (Mill to Comte, March 26, 1846; in Haac [ed.], p. 366) after the completion of the *Principles of Political Economy*. Similarly, in a letter to his wife Harriet, whilst listing possible topics worth writing about, Mill put first that of “Differences of character (nation, race, age, sex, temperament), a subject he thought he “could do most to by [himself]” (Mill to H. Mill, February 7, 1854; in J. S. Mill, *Later Letters*, p. 152).

<sup>7</sup> For Mill's ethological comparison of the French and English characters, see G. Varouxakis, *Mill on Nationality*, Chap. 4 ("Nations and nationhood II: National character and politics, or the discrete charm of Englishness"); on the Irish character, see J. Carlile, *John Stuart Mill on the Writings of Character*, Chap. 3, pp. 146-53. For Mill's views on the character of the working classes, see J. Carlile, *Ibid.*, pp. 153-9; and J. Carlile, 'Mr. J. Stuart Mill, M.P., and the Character of the Working Classes', in E.J. Eisenach (ed.), *Mill and the Moral Character of Liberalism*, University Park, PA: The Pennsylvania State University Press, 1999, pp. 143-68. For Mill's sexual ethology, see the sketchy comments in J. Carlile, *John Stuart Mill and the Writing of Character*, pp. 159-63, and T. Ball, "The Formation of Character: Mill's 'Ethology' reconsidered", especially pp. 37-40. Both Ball (*Ibid.*, pp. 33-7) and Carlile (J. Carlile, *John Stuart Mill and the Writing of Character*) emphasize the ethological dimension of Mill's *Autobiography*.

<sup>8</sup> See J. Carlile, *John Stuart Mill and the Writing of Character*, p. 134.

<sup>9</sup> A. Ryan, *J. S. Mill*. London & Boston: Routledge & Kegan Paul, 1974.

<sup>10</sup> The example of sexual differences was replaced by that of mental and moral differences between the higher and lower classes in the first two editions of the *System* (1843 and 1846) but reinstated in the third (1851). At the time of the first publication of the book, Mill perhaps thought that his audience was not ready to give a fair hearing to such topics as women's emancipation.

<sup>11</sup> Notable instances of such a rhetorical ploy are to be found in the exposition of the Deductive Method (J. S. Mill, *SL*, III, XI), which comes right after the acknowledgment of the incapacity of experiment and observation to deal with phenomena resulting from a plurality of causes (*Ibid.*, Book III, Chap. X, Sect. 6), and in the introduction of the "Physical or Concrete Deductive Method" for the study of social phenomena (*Ibid.*, VI, IX), which is supposed to remedy both the shortcomings of the "Chemical, or Experimental Method in the Social Science" (*Ibid.*, VI, VII) and the "Geometrical, or Abstract Method" (*Ibid.*, VI, VIII).

<sup>12</sup> See IVC and Appendix V.

<sup>13</sup> See IVD.

<sup>14</sup> Mill declared that it would take an "Oriental despot" to implement such a research programme. But a good old English utilitarian would also do. In fact, Bentham's *Panopticon* could serve that end, for Bentham himself suggested that one could take a pair of twins, and subject them to a complete education within the walls of the *Panopticon* in order to observe the effects of controlled circumstances on a certain character: see M. Bozovic (ed.), *Jeremy Bentham: The Panopticon Writings*. London & New York: Verso, 1995, p. 91.

<sup>15</sup> A few pages earlier, Mill had already insisted on this extreme sensitivity of human character. Since "our mental states, and our mental capacities and susceptibilities, are modified, either for a time or permanently, by every thing which happens to us in life" (J. S. Mill, *SL*, Book VI, Chap. V, Sect. 2, pp. 863-4), it seems almost impossible to spell out discretely the various circumstances at work in the determination of a type of character, and, consequently, to establish a proper ethological law.

<sup>16</sup> For Mill's acknowledgment of plurality of causes in character formation, see *supra* p. 4.

<sup>17</sup> See IVB and n. 10 *supra*.

<sup>18</sup> See IVB.

<sup>19</sup> See IVD4.

<sup>20</sup> See IVB.

<sup>21</sup> *Id.*

<sup>22</sup> See IVB.

<sup>23</sup> See IIIC.

<sup>24</sup> See IC2.

<sup>25</sup> The point was repeated later: "The aim of practical politics is to surround the society which is under our superintendence with the greatest possible number of circumstances of which the tendencies are beneficial, and to remove or counteract, as far as practicable, those of which the tendencies are injurious. A knowledge of the tendencies only, though without the power of accurately predicting their conjunct result, gives us to a certain extent this power" (J. S. Mill, *SL*, VI, IX, 2, p. 898).

<sup>26</sup> Apart for his mentioning of the importance of the "national" factor in ethology (which he acknowledged through his repeated plea for a "political ethology"), Mill never gave further precisions as to what exactly was comprised in the set of social circumstances. On political ethology, see J. S. Mill, *SL*, VI, IX, 4, and the secondary literature quoted in n. 2 *supra*.

<sup>27</sup> See IV b *supra*.

<sup>28</sup> On Mill's belief in the usefulness of the Deductive Method for the study of complex phenomena, see IVB.

<sup>29</sup> As Mill put it, “it was reasonably deemed an essential requisite of any true theory of the causes of the celestial motions, that it should lead by deduction to Kepler’s laws: which accordingly, the Newtonian theory did” (J. S. Mill, *SL*, III, XI, 3, p. 461).

<sup>30</sup> See F. Wilson, “Mill’s ‘Proof’ of the Utility and the Composition of Causes”, *Journal of Business Ethics*, 1983, 2/2, pp. 135-55 (especially pp. 143-7); F. Wilson, *Psychological Analysis*, Chap. 2, Sect. 2 (“The Composition of Causes”, especially pp. 90-2); and F. Wilson, “Mill on Psychology and the Moral Sciences”, in J. Skorupski (ed.), *The Cambridge Companion to Mill*, pp. 203-54 (especially pp. 240-4).

<sup>31</sup> As the *System* (VI, IX, 4) illustrated, Mill believed that differences in national character were crucial for a proper understanding of social phenomena. Hence his desire to establish a “Political Ethology, or the Science of national character”. On political ethology and Mill’s conception of national differences, see G. Varouxakis’ *Mill on Nationality*, Chap. 4 (“Nations and Nationhood II: National Character and Politics, or the Discrete Charm of Englishness”).

<sup>32</sup> The breadth of ethological considerations and the dependence of sociological laws on them might have accounted for Mill’s temptation to apply the name ethology “to the entire science of our mental and moral nature” (J. S. Mill, *SL*, VI, V, 4, p. 869).

<sup>33</sup> See for instance *Ibid.*, III, XI, 2, p. 459 & p. 461; XII, 2, p. 466.

<sup>34</sup> Wilson explicitly draws on G. Bergmann’s conception of composition laws: see G. Bergmann, *Philosophy of Science*. Madison: The University of Wisconsin Press, 1957, Chap. 3 (especially pp. 131-55).

<sup>35</sup> As Bergmann underlines, composition laws are not rules in the sense that they are not mathematical or logical elements introduced to render practicable the computation of the influence of the various causes: they are matter of fact generalization which might turn out to be true or false. Hence the fact that they are qualified as “laws”. As he puts it: “A composition rule is a law ; only it is a law of a peculiar kind. Its peculiarity is that it states how to “make” laws out of other laws. (...) A composition law R, being a law, is synthetic” (*Ibid.*, p. 137). Accordingly, if the deduction is to be valid when explaining complex phenomena via the laws of their different causes, the composition law has to be true. For Mill, this would amount to subject it to the various inductive methods discussed in Book III of the *System*.

<sup>36</sup> See in particular J. S. Mill’s “On the Definition of Political Economy and on the Method of Philosophical Investigation in that Science” (1836), in J. S. Mill, *Essays on Economics and Society*. Edited, with a Textual Introduction, by J.M. Robson. Introduction by L. Robbins. Toronto & London: University of Toronto Press – Routledge & Kegan Paul, 1967, pp. 309-339.

## VII – How To Discover One’s Nature: Mill’s Argument for Emancipation in the *Subjection of Women*.

In a letter dated February 21<sup>st</sup> of 1849 written to his beloved Harriet, John Stuart Mill contended that he saw only “two things” capable of shaking the “nonsensical prejudice” commonly entertained as to women’s nature and capacities”: “a better psychology & theory of human nature, for the few; & for the many, more & greater proofs by example of what women can do” (Mill to Harriet Taylor, February 21, 1849; in J. S. Mill, *The Later Letters*, pp. 12-3).

Mill never brought to fruition the first prop he mentioned: his pet-project of an ethology did not get off the ground. Consequently, he had not been able to arrive at an environmental explanation of character traits that would definitively discard the kind of biological arguments advanced, among others, by Comte. Furthermore, he had not succeeded in identifying precisely the causal mechanisms that would enable one to modify characters and to carry out the needed transformations of the social structure. As a result, Mill’s reformist blueprint lost much of its appeal since it lacked the proper theoretical basis that would distinguish it from mere “empirical” approaches to social reform.

That failure to develop the scientific account on which to ground his case for the emancipation of women might help explain Mill’s silence on the subject in the years following the publication of the *System of Logic*. Not that his commitment to the cause had faded, for one finds in Mill’s post-1843 writings numerous statements echoing the following declaration from the second edition (1849) of the *Principles of Political Economy*:

“The ideas and institutions by which the accident of sex is made the groundwork of inequality of legal rights, and a forced dissimilarity of social functions, must ere long be recognised as the greatest hindrance to moral, social, and even intellectual improvement” (J. S. Mill, *Principles of Political Economy*, IV, VII, 3, p. 765)<sup>1</sup>.

Two years later, Mill published under his name an article written by his wife Harriet Taylor on the “Enfranchisement of Women”, which testified to the unfailing interest of the couple in the issue<sup>2</sup>. However a newspaper article was a far cry from the kind of investigations that, as Mill once told Comte, would settle the sexual equality debate: “what he need[ed]”, as S. Collini points out, “if his case [was] to rise above mere assertion [was] some systematic demonstration of the

ways in which circumstances [had] moulded and [could] mould certain types of character" (S. Collini, "The Tendencies of Things: John Stuart Mill and the Philosophic Method", p. 156)<sup>3</sup>. However, for many years. But Mill wrote nothing substantial on the subject. S. Collini suggests that his reluctance to air his views on the women's question might be partly accounted for by the fact that

"Mill's failure to make any progress with the Ethology deterred him from attempting a systematic exploration of an issue which (...) was so closely dependent on that project as he conceived it" (S. Collini, *Public Moralists*, p. 149)<sup>4</sup>.

Yet, by the end of the 1860s, Mill seemed to have overcome the ethological predicament for he offered the public a book-length argument in support of female emancipation, namely his 1869 *Subjection of Women*<sup>5</sup>.

However, even a casual glance at the book reveals that one is not to find in the *Subjection of Women* a unique line of reasoning according to which Mill's argument for the emancipation of women would develop throughout the chapters. On the contrary, one gets the impression that Mill attempted to turn anything that supported his views to good account. Hence the broad range of his arguments: Mill invoked arguments from justice (the subjection of women infringed their rights as members of society), from freedom (the subjection of women thwarted them in their personal development as human beings), and from utility (the subjection of women was detrimental to the greatest happiness of the greatest number, most notably because, by keeping women at home, it divided by half the pool of human resources available for the job market and because, by promoting a degrading model of inter-sexual dependence, it compromised the moral improvement of mankind).

Many commentators, especially among scholars assessing Mill's intellectual legacy to contemporary feminism, have taken issue with his argumentative eclecticism on the ground that they believe it to be inconsistent<sup>6</sup>. As Julia Annas puts it, Mill's "desire to have things too many ways at once, to do justice to all the complexities of a topic which even now is far from being adequately clarified" results in "deep confusions" (J. Annas, "Mill and the Subjection of Women", p. 180)<sup>7</sup>.

In this chapter, I attempt to demonstrate that, although Mill's way of arguing is not always crystal-clear, many of his arguments in the *Subjection of Women* can be saved if replaced in their historical context and related to other aspects of

his thought. More precisely I argue that the criticisms levelled at Mill's plea for women's emancipation are most of the time misguided for three different reasons.

Firstly, most critics do not pay enough attention to the various ways in which Mill appealed to the concept of 'human nature' to support his views. I maintain that this neglect often leads them to regard as contradictory statements which are in fact complementary when their meaning is properly construed.

Secondly, an assessment of the arguments developed in the *Subjection of Women* benefits from taking into account the argumentative strategy Mill adopted to get a fair hearing for his message and to convince his readers that the legal, social, and moral reforms he championed were practicable. Mill knew that for his plea in support of sexual equality to succeed, it was necessary to convince those who were responsible for women's subjection – men in general –, and more specifically, those who theorized that subjection (the likes of Comte), that neither reason nor interest called for its perpetuation.

Thirdly, the failure of the ethological project brought about a change in Mill's approach to the sexual equality issue, which eventually resulted in the specific argumentative structure of the *Subjection of Women*. One may say that instead of trying to prove sexual equality, Mill attempted to disprove sexual inequality. Whereas the *System of Logic* and the correspondence with Comte assumed that ethology would establish that, since mental differences between men and women were primarily the results of environmental influences, both sexes were endowed with the same moral and intellectual capacities, the *Subjection of Women* took stock of the demise of ethology and changed tactics: the aim of the book was to prove that none of the reasons so far adduced for justifying the subjection of women were sound. But this change in approach was also part and parcel of a more essential shift in Mill's social thought, which progressively moved away from the *System of Logic*'s idea that large-scale reforms ought to be based on a "Science of Human Nature" to a less grandiose, but politically more promising, form of liberalism.

In the following sections, I will attempt to show how these three features – the appeal to the concept of human nature, the use of rhetoric, and the endorsement of a liberal approach to the sexual equality issue – structure the *Subjection of Women*. I start by exposing Mill's conception of equality and explain how it provides him with a critical framework from which to argue (VIIA).

Secondly, I turn to Mill's actual refutation of what he takes to be the two main arguments adduced for women's subjection, namely a historical argument (VIIB) and an argument based on human nature (VIIC). I then introduce what I call Mill's analogical argument for the emancipation of women (VIID). Eventually, I defend the consistency of Mill's feminist case against the various objections levelled against it in the secondary literature (VIIE).

### A – Inequality, Justice, and Expediency.

To grasp the new perspective adopted by Mill in the *Subjection of Women*, it is appropriate to adopt the interpretative approach suggested by F.R. Berger in his seminal study of Mill's moral and political philosophy *Happiness, Justice, and Freedom*<sup>8</sup>. According to Berger, along with an appeal to a principle of freedom, “considerations of justice – an appeal to equality – (...) played a crucial role” (F.R. Berger, *Happiness, Justice, and Freedom*, p. 196) in Mill's argument for the emancipation of women. These considerations are to be understood in the light of a “baseline” conception of equality that constitutes the theoretical background against which any political or practical claim can be assessed. This conception can be reduced to four tenets:

1. Substantive inequalities of wealth, education, and power are *prima facie* wrong, and require justification.
2. Substantive inequalities must not permit any to “go to the wall”; redistribution to provide subsistence must be guaranteed.
3. Inequalities must not undermine the status of persons as equals. In concrete terms, this means that inequalities must not result in some gaining complete power over the lives of others, or in some persons being degraded.
4. Only *certain* kinds of grounds serve to justify inequality – that the inequality will make no one worse off, or that it is the result of rewarding according to desert. Advantages must be earned through voluntary effort (*Ibid.*, pp. 159-60).

As Berger remarks, it was with respect to this conception of equality, and most particularly its first and fourth propositions, that Mill denounced the subjection of women as unjust. And what supported his denunciation was an appeal to the facts of human nature.

In practical matters, as Mill put it, the “*a priori* presumption [was] in favour of freedom and impartiality” (J. S. Mill, *The Subjection of Women*, p. 262) and it fell on those

“who contend[ed] for any restriction or prohibition; either any limitation of the general freedom of human action, or any disqualification or disparity of privilege affecting one person or kind of persons, as compared to others” (*Id.*)

to prove that the practical measures they upheld were the right ones. Accordingly, there could be no reason for discriminatory treatment except when “required by the general good” and “the law (..) should treat all alike, save where dissimilarity of treatment [was] required by positive reasons, either of justice or of policy” (*Id.*). By putting the issue of sexual inequality in these terms, as S. Collini notes, Mill adopted “a recurring motif in radical arguments against the order of things” which assumed that “individuals should be treated equally unless good cause can be shown to do otherwise” (S. Collini, *Public Moralists*, p. 138).

What were the “positive reasons of justice” that supported sexual inequality? Surely not the mere fact of being born belonging to one of the two sexes. For this was a purely contingent fact which could neither entitle one to privileges nor legitimate one’s subjection. There was no voluntary exertion involved in being born a man or a woman, and hence birth was neutral with respect to considerations of justice. In that regard, the facts of human nature (being born male or female) were irrelevant to the question of sexual inequality.

Surely, most of Mill’s opponents concurred with him in what constituted desert and what authorized one to claim specific rights for oneself. Even Comte regarded merit as a key-element for the social allocation of positions and resources. But Comte would have added that the mere consideration of birth in the abstract was not enough to adjudicate the case in favour of sexual equality. With respect to justice, Mill had a point: sex seemed irrelevant. But with respect to expediency, this was a different story.

Mill’s baseline conception of equality was not a conception of strict equality since it allowed for departures from the latter as long as they derived from “positive reasons, either of justice or of policy”. For instance, as Berger points out, “in areas where some will exercise power over others, “policy” requires that competence be a basis for higher status” (F.R. Berger, *Happiness, Justice, and Freedom*, p. 197). This was exactly the line of argument chosen by Comte to argue for sexual

inequality, for he maintained that women were deprived of the capacities required to take part in the activities characteristic of the public sphere and argued that they should be confined to a submissive position within the household because of the limitations of their volitional capacities. Since women lacked the “competence” to speculate, organize, and command, expediency required that only men, who were endowed with such capacities, ruled over the destinies of society. How was Mill to respond to this argument?

Mill’s refutation focused on the appeal to human nature (more precisely to “competence” and “capacities”) on which the argument for subjection depended. But, whereas in the case of the argument from equality Mill showed that *some facts of human nature had no relevance*, in the case of the argument from expediency Mill attempted to demonstrate that *the present knowledge of some other facts of human nature could not settle the question*. By doing so, Mill did not have to rely on his unwritten ethological treatise.

What was the form of the argument from expediency in support of women’s subjection? The problem was to know whether “any of the other social arrangements of mankind”, that is any arrangement different for the present one in which women were subjected to men, would not be more “advantageous to humanity in general” (J. S. Mill, *The Subjection of Women*, p. 275). For instance, would it not be possible that an equalitarian society would be more expedient in reaching the goal aimed at? The most sensible way to decide between the different alternatives would be to compare their respective ability to achieve the intended result. Therefore, it would be appropriate to organize a social experiment in which women’s capacities would be tried and see what happened. However, neither Comte nor Mill’s opponents would have any of this, since they claimed they knew beforehand that such an experiment would fail and therefore felt entitled to claim that the subjection of women was the most expedient social arrangement. The *a priori* reasons they invoked were rooted in an alleged knowledge of what women could and could not do. Of course, it was the accuracy of this knowledge of human nature that Mill questioned.

### **B - Inequality and History.**

In an alternative reminiscent of Comte’s historical and biological considerations on women<sup>9</sup>, Mill distinguished between two sources of support for

female subjection: on the one hand, a reference to the “experience of mankind” (*Ibid.*, p. 276); on the other hand, an appeal to “the nature of the two sexes” (*Id.*). As to the first, Mill held the advocates of subjection to claim that since there had not been any example in human history of a society in which women had competed with men on equal terms, it was therefore proof that they lacked the capacities for doing so. But this was just begging the question: as Mill took pains to demonstrate in the opening pages of Chapter I (esp. pp. 263-72), the subjection of women was not the result of a carefully designed historical experiment in which women’s capacities had been put to the test and had turned out not to be on a par with those of men. If women had not exhibited the capacities looked for, one could surmise that it was because they were maintained in a state of subjection in which nothing called for the exercise of these capacities. In other words, female subjection might not need be the result of women’s inferior capacities, but the reason why they had not been able to develop their capacities to the full. Accordingly, Mill refused to accept that the “experience of mankind” had pronounced in favour of subjection, i.e. that history has proved than only men possessed the competences for speculation, organization, and command:

“Experience cannot possibly have decided between two courses, so long as there has only been experience of one. (...) All that is proved in [favour of subjection] by direct experience, is that mankind have been able to exist under it, and to attain the degree of improvement and prosperity which we now see; but whether that prosperity has been attained sooner, or is now greater, than it would have been under the other system [sexual equality], experience does not say” (*Ibid.*, p. 276).

The only way “the experience of mankind” could have provided an answer to the question of sexual equality would have been to run the “social experiment” of emancipation, which only could try women’s capacities. But, as Mill put it, nobody knew what were women’s “capabilities (...), not even themselves, because most of them have never been called out” (*Ibid.*, p. 278). Therefore, since all possible social arrangements –and most notably that consisting in emancipation – had not been assayed, the historical record could not qualify as an unquestionable source of support for the advocates of subjection.

Yet, S. Collini suggests that Mill’s treatment of historical evidence is not consistent throughout the *Subjection of Women*. For on the one hand, Collini argues, “Mill attempts systematically to undermine the standing of *any* evidence about ‘the natural subordination of women drawn from past experience’ ” (S. Collini,

“Introduction”, p. xxxiii)<sup>10</sup>. But, on the other hand, “Mill’s ban on evidence drawn from history” is removed “where that evidence may seem to suggest a positive conclusion about women’s capacities”, thereby leading to “its doubtful epistemological credentials [being] treated more leniently” (*Id.*), as it is the case when Mill refers in Chapter III to female monarchs, regents and rulers as “proofs by example of what women can do” (Mill to Harriet Taylor, February 21, 1849; in J. S. Mill, *The Later Letters*, p. 13)<sup>11</sup>. Now, Collini is wrong when he maintains that Mill put a “ban on evidence drawn from history” (S. Collini, p. xx), if he means that Mill altogether eschewed history as a source of evidence for settling the sexual equality issue. What Mill argued was that history afforded “no presumption in favour of the arrangements which place women in social and political subjection to men” (J. S. Mill, *The Subjection of Women*, 272), but not that history “could not *in principle* furnish” (S. Collini, “Introduction”, p. xx) that evidence. If, as Mill suggested, the social experiment of emancipation had been tried and had failed to produce better results than subjection, history would have given evidence supporting the latter. And when he referred to “proofs by example of what women can do”, Mill did not insidiously appeal to evidence he refused his adversaries to use. He just resorted to singular instances of women having displayed intellectual capacities and volitional dispositions comparable to that of men to refute the following inference: “if there had never been any woman exhibiting intellectual capacities and volitional dispositions comparable to that of men, it is because women as a group lack these capacities and dispositions”. What Mill showed was that there had been such women and that consequently the proposition holding that women were universally and in all circumstances inferior in intelligence did not hold. Moreover, the lesson Mill wanted his reader to draw from his assessment of the “experience of mankind” was that there was no reason to assume that the full extent of women’s capacities and competences had already appeared in the historical record<sup>12</sup>.

### C - Inequality and the Science of Human Nature.

The appeal to a historical knowledge of human nature having failed them, Mill suggested that advocates of subjection might fall back on an appeal to human nature *per se*. The claim would thus become that “the *nature* of the two sexes adapts them to their present functions and positions and renders them appropriate to

them" (*Ibid.*, p. 276). Once again, the knowledge on which the case for subjection rested was a knowledge of human nature, this time understood as the mental and moral endowment inherent in each of the sex and which grounded their capacities and competences. Once again, it was the soundness of this knowledge that Mill questioned. He bluntly denied that

"any one knows, or can know, the nature of the two sexes, as long as they have only been seen in their present relation to one another" (*Id.*).

Three main reasons were invoked by Mill to explain his scepticism about the reliability of the knowledge of human nature: the patchiness of the biological knowledge, the absence of a fully-developed ethology, and the artificiality induced in women's character by their subjection.

### **1 - Inequality and Biology: The "Craniological" Argument for Women's Subjection.**

As the position of Comte demonstrates, biological knowledge appeared to many as a good source of information on human mental capacities. The psychophysical approach, which tied mental and moral characteristics to their anatomical and physiological substratum, had an air of scientific respectability about it which attracted rationally minded reformers. However, despite the twenty-five years that had elapsed, Mill's opinion on the topic in the *Subjection of Women* remained similar to that he had expressed in the *System of Logic* and the correspondence with Comte<sup>13</sup>: Mill did not believe that the nature of the relation existing between body and mind (and especially between the brain and psychological dispositions) had been clarified enough so as to enable one to reduce states of the latter to those of the former. Although Mill acknowledged the plausibility of a close relation between mind and brain, he also observed that

"the precise relation which exists between the brain and the intellectual powers is not yet well understood, but is a subject to great dispute" (*Ibid.*, p. 311).

Mill's could then return to his longstanding advocacy of the indispensability of a psychological analysis of mental capacities, which he thought biologically oriented inquirers were not qualified to pursue.

“the preliminary knowledge” of “what the differences between the sexes now are (...) is still in the crudest and most incomplete state. Medical practitioners and physiologists have ascertained, to some extent, the differences in bodily constitution; and this is an important element to the psychologist: but hardly any medical practitioner is a psychologist. Respecting the mental characteristics of women; their observations are of no more worth than those of common men” (*Ibid.*, p. 278).

As seen previously<sup>14</sup>, Mill held that these observations, being empirical generalizations, could not be taken as a reliable ground for inferring the entire scope of women’s capacities. Mill complemented this in-principle rebuttal with a criticism of some of the recent biological data used to back up the thesis of women’s intellectual inferiority. Such a concern testifies to Mill’s awareness that the scientific context had changed since the publication of the first edition of the *System of Logic*.

For it was indeed the case that most advocates of sexual inequality had lost confidence in phrenology, whose repute seriously dwindled during the 1840s so as to have become generally disregarded by the end of the 1860s. They now relied on the data afforded by the budding science of physical anthropology to support their case<sup>15</sup>. As C. Russett has documented in her *Sexual Science*, physical anthropology threaded on the same path as phrenology by trying to establish the biological basis of mental dispositions, but differed both in its method and focus. On the one hand, it appealed to quantitative procedures of investigation of various somatic variables (bone size, facial angles, blood flow, menses, etc.) whereas phrenologists only considered the brain and generally stuck to the impressionistic method of skull reading. On the other hand, whilst physical anthropology focused on racial differences to demonstrate the superiority of the white race, phrenology, at least in its “classical” form, remained highly ethnocentric by considering diversity only within its European specimens. Yet, as C. Russett points out,

“While it is true that the main thrust of physical anthropology was toward the classification of races, the problem of the sexes posed too many similarities too ignore. This was all the more true because mid-century women were exhibiting a disturbing propensity to challenge long-established social arrangements with respect to their rights and duties” (C. Russett, *Sexual Science*, p. 27).

Whilst the Civil War and the campaign for the abolition of slavery in America sparked an intense debate on racial inequality, the agitation caused by the “Women’s Rights” question placed at the forefront of the discussion the

consideration of the biological differences existing between the sexes. And in this last respect, it was the brain that received most attention.

In his *Subjection of Women*, Mill singled out clearly the crucial biological claim of his opponents:

“But (it is said) there is anatomical evidence of the superior mental capacity of men compared with women: they have a larger brain” (J. S. Mill, *The Subjection of Women*, p. 310).

Now, just as in the case of phrenology<sup>16</sup>, it is difficult to specify exactly where from Mill drew this “anatomical evidence”. But it was undoubtedly the case, as many commentators have noted<sup>17</sup>, that the measuring zeal of the physical anthropologists gave rise to a rejuvenated “craniology” which took as one of its favourite subjects women’s heads.

The whole enterprise was based on the assumption that “bigger was better”, i.e. that there was a correlation between brain-size and intelligence. As the neurologist and founder of the *Société d’anthropologie de Paris* Paul Broca put it, “other things being equal, there is a remarkable relationship between the development of intelligence and the volume of the brain” (quoted in C. Russett, *Sexual Science*, p. 33). This resulted in an avalanche of comparative quantitative charts and, although their figures were often far from matching, most European physical anthropologists claimed that their measurements revealed the existence of a ten percent discrepancy in absolute brain-size in favour of men. For instance Karl Vogt’s *Lectures on Man*<sup>18</sup>, which Mill might have read<sup>19</sup>, reported that the English physician Boyd had weighted the brains of 2,086 males and 1,061 females of all ages and found that the weight of the adult brain varied from 1,366 to 1,285 grams in men and from 1,238 to 1,127 in women. In the 1855 edition of his *Principles of Human Physiology*, W.B. Carpenter came up with different figures, probably because he considered the encephalon whereas other researchers tended not to include the cerebellum in their weightings: he reported that the size of men’s encephalon varied from 40 to 60 oz, averaging around 50 oz, whereas women’s varied from 36 to 50 oz, averaging around 45 oz (W.B. Carpenter, *Principles of Human Physiology*, p. 536)<sup>20</sup>. These “missing five ounces of female brain”, as they came to be known, were held to account for the differences in mental capacities between the sexes.

Mill's rebuttal of this "craniological" argument was twofold. Firstly, he argued that not all women's brains were smaller than men's or the average of men's and that some may have been bigger than many men's:

"in the first place the fact itself is doubtful. It is by no means established that the brain of a woman is smaller than that of a man. (...) It is certain that some women have as large a brain as any man. It is within my knowledge that a man who had weighed many human brains, said that the heaviest he knew of, heavier even than Cuvier's (the heaviest previously recorded), was that of a woman" (J. S. Mill, *The Subjection of Women*, p. 310)<sup>21</sup>.

So even if it were true that intelligence was correlated with brain-size, it was nonetheless the case that the factual premise on which physical anthropologists relied could be and was challenged on purely empirical grounds<sup>22</sup>. In passing, Mill also operated a clever *reductio ad absurdum* of the claim that intelligence was dependent on brain weight. For if one brain's weight was inferred from one's bodily frame (and in particular from the size of the skull), it would follow that

"A tall and large-boned man must on this showing be wonderfully superior in intelligence to a small man, and an elephant or a whale must prodigiously excel mankind" (*Ibid.*, pp. 310-1).

If only the absolute brain size was considered as an index of intelligence<sup>23</sup>, it clearly appeared that man was not nature's most intelligent offspring: more massive mammals outdid him.

This jest led Mill to his second objection against the "craniological" argument. His point was that, even if one had to acknowledge that the function of an organ depended on its size, it was certainly not the only factor to consider for the explanation of mental capacities. The composition of the brain and the kind of activity it developed were also relevant elements. For instance, a finer fabric of the nervous tissues and a more intense blood circulation might compensate for women's smaller brains, if it was proven that they had smaller ones<sup>24</sup>.

Yet, at this point Mill's demonstration took a surprising course. One might have expected that he would have argued that various compounding causes could account for the same phenomenon: for example, that a less active but bigger brain would be equivalent in terms of intellectual achievements to a smaller but more active one. But Mill surmised that men's bigger brains and women's more active brains could well account for "the differences actually observed between the mental operations of the two sexes" (*Ibid.*, p. 311). On the one hand, the slowness of men's mental operations, their capacity to bear more work, and their sticking to

the same kind of objects would be explained by the inertia associated with the size of their brain. On the other hand, women's impressionability, their ability to change the focus of their attention rapidly, their lesser endurance but greater power of recovery would be ascribed to their more active brain.

This way of arguing is certainly intriguing in so far as the conclusion goes counter the very purpose of Mill's demonstration, which was to rebut the "craniological" argument based on the idea that biology *alone* could explain psychological differences. As we have seen<sup>25</sup>, Mill's strategy was to show that the available biological knowledge did not provide any sure grounds for a reliable theory of human nature. But here Mill appears to contradict himself since he now argues that differences in organization might explain differences in intellectual dispositions. It is this kind of stepping backward that gains Mill the charge of being confused. In that regard, Julia Annas' comments readily express the feelings of many commentators, for she finds Mill's argument "quite pathetic" and is surprised that "Mill feels that he needs to argue at all on this level" (J. Annas, "Mill and the Subjection of Women", p. 186).

Now, one can still make sense of Mill's convoluted way of arguing by paying attention to one explicit and one implicit element of his demonstration. On the one hand, Mill clearly specifies that his physiological explanation of psychological differences is a "speculation [that] is entirely hypothetical; it pretends to no more than to suggest a line of inquiry" (J. S. Mill, *The Subjection of Women*, p. 312). So, he is not saying that biology has explained some existing psychological differences between men and women. Secondly, and that is the implicit element in his reasoning, if Mill argues on the biological level, it is because a proper account of "moral" phenomena has to include, by his own explanatory standards, the consideration of biological factors. For note that Mill is not presently arguing that no biological factor whatsoever would be relevant to the question at hand, but rather that the "craniological" argument based on brain weight was inconclusive and that his biological "speculation" about brain activity had the merit of being at least more realistic. Nowhere in this passage does he say that this biological "speculation", if true, would account for the phenomenon of inter-individual mental differences in its entirety, since some other factors (such as education or social position) might well enter the picture.

In fact, when one considers Mill's explanatory scheme for "moral phenomena", his way of arguing seems sound. For it seems reasonable for him to rejoin to the claim that the smaller brain of women (X) is the cause the intellectual inferiority of women (Y) by maintaining that 1) probably X is false, 2) that it has not been proven that X supports Y, and 3) that even if X were true and did support Y, Y could still be offset by Z (say, education). Of course, it sounds a bit odd to claim at one and the same time that biology at present cannot afford an explanation of mental phenomena and to come up with a conjecture as to how differences in organization might relate to differences in psychological differences. Perhaps Mill's refutation of the "craniological" argument would have been more convincing if he had abstained from dabbling in neurology<sup>26</sup>.

## **2 – The Acknowledgment of the Ethological Failure and Its Consequences.**

The second key-element of Mill's demonstration of the unreliability of the knowledge of human nature consisted in his acknowledgment of the absence of a fully developed ethology. One might have expected the failure of ethology to have seriously compromised his case for sexual equality. But Mill turned that weakness into a strength, by showing that, in the absence of ethology, no argument for women's subjection grounded on knowledge of human nature was admissible.

Let us remember what exactly was the gist of Mill's ethological argument. Comte and his likes maintained that there existed "natural" (*i.e.* biological) differences between men and women that accounted for the inferior intellectual achievements of the latter, and that since the causes of such an inferiority were congenital (and therefore not liable to be altered), women's subjection was naturally justified in the sense that no other social arrangement was possible. On the contrary, Mill claimed that environmental factors might explain this inferiority, and argued that since some of the factors (such as education or social position) responsible for women's actual characters were amenable to change, other social arrangements could be tried and, if conducive to more happiness for society at large, adopted. Understood in those terms, the whole debate between supporters and opponents of sexual equality was premised on a specific interpretation of the epithet "natural": whereas the former argued that mental differences between sexes were "natural" in the sense of being innate, hence not modifiable, and consequently were necessary properties of the individuals who had them, the latter

took these differences to be contingent properties depending on the presence or absence of certain conditions, some of which were within the reach of human agency.

Unfortunately, the sexual equality issue could not be settled since neither side had much evidence to support their respective claims. As Mill previously argued, the “craniological” argument was flawed. But his environmental account fared no better, as he acknowledged: he bemoaned the “unspeakable ignorance and inattention of mankind in respect to the influences which form human character” and the lack of cultivation of the “analytic study of the most important department of psychology, the laws of the influence of circumstances on character” (*Ibid.*, p. 277)<sup>27</sup>. The debate had apparently reached a stalemate. Within the framework elaborated by Mill for the explanation of “moral” phenomena, this dual lack of physiological laws and laws of the influence of circumstances prevented one from carrying out the ethological deduction, since the ultimate biological and environmental generalizations on which it depended were in fact non-existent.

However, in the light of the previous conclusion, it is surprising to observe Mill arguing as if his environmental hypothesis was on a better footing than the innatist. For, after having underlined our ignorance about “the laws of the influence of circumstances on character” (*Id.*), Mill asserted that the evidence of the naturalness of the intellectual and moral differences existing between men and women could only be “negative”, meaning that

“Those only could be inferred to be natural which could not possibly be artificial – the residuum, after deducing every characteristic of either sex which can admit of being explained from education or external circumstances. The profoundest knowledge of the laws of the formation of character is indispensable to entitle any one to affirm even that there is any difference, much more what the difference is, between the two sexes considered as moral and rational beings; and since no one, as yet, has that knowledge (for there is hardly any subject which, in proportion to its importance, has been so little studied” (*Id.*).

As noted previously<sup>28</sup>, Mill’s sustained reference to the Method of Residues was somewhat questionable, since it covertly assumed *a priori* that the role of biological factors in the explanation of “moral” phenomena was minor. But given his acknowledgment that the causal role of circumstances in character formation was unknown, Mill’s presumption that an environmental explanation could account for the greater part of the mental differences between the sexes now became outright empty. Moreover, the appeal to the Method of Residues was pure rhetoric: the gist

of the Fourth Method of induction was to subtract from the parts of the effect due to known causes a residuum that was assumed to depend on antecedents which had been overlooked. But in that very instance, Mill himself recognized that the laws of what he took to be the main causes (i.e. environmental factors) of the effect under scrutiny (mental capacities) were not available. There was simply nothing to subtract from! Apparently, Mill's willingness to champion the feminist cause with the support of his conjectural environmentalism caused him to forget what he had preached regarding the study of moral phenomena: that a definitive explanation would have to take into account *all* the relevant causes, whatever their nature. Therefore, whereas Mill was entitled to criticize the unscientific methods of those who considered only biological causes, the very same methodological objection could be fired back at him assuming the truth of the environmentalist account.

However, if one set aside Mill's unfounded claim about the primacy of environmental factors, the soundness of his point remained: the absence of a comprehensive scheme taking into account all the factors (biological and environmental) involved in the explanation of "moral" phenomena forbade any scientifically based pronouncement as to what constituted the natural intellectual endowment of women. Consequently, one was entitled to discard any argument for women's subjection allegedly grounded on knowledge of human nature.

### 3 - The Unnaturalness of Women's Subjection.

The above declaration of ignorance might seem a bit farfetched if one loses sight of the kind of knowledge Mill thought one was deprived of. For he was not contending that no empirical generalizations were available, quite the contrary<sup>29</sup>. What he argued was that the sort of causal knowledge that would allow the solving of the problem of the natural capabilities of women, and thereby corroborate or refute these empirical generalizations, was lacking. Yet, one might have retorted that, short of that causal knowledge, one had to rely on what was available, i.e. on these imperfect empirical generalizations. Perhaps one was ignorant of the causes that brought about these effects, but at least the effects could be observed and perhaps a tentative conclusion reached.

This suggestion prompted Mill to introduce the third reason he had for claiming that the current state of the knowledge of human nature (and especially of

women's nature) prevented any successful theoretical attempt at adjudicating the cause at hand. He argued that

"the knowledge which men can acquire of women, even as they have been and are, without reference to what they might be, is wretchedly imperfect and superficial" (*Ibid.*, p. 279).

Firstly, Mill claimed that in matters psychological (which comprised the identification of intellectual capacities), the introspectionist account was crucial in the analysis of the phenomena under scrutiny. But men dogmatized on that subject without ever, or only exceptionally, listening to what women had to say. Secondly, Mill pointed out that the actual position of women, which confined most of them to their home with no chance of gaining access to the public sphere, restricted severely the sample of instances on which male analysts could rely. For most of them, their female relatives or those of their circle of sociability would be their unique, and necessarily incomplete, source of information. In these circumstances, social and national distinctions would be hard to come by.

Now, none of these predicaments were insuperable: nothing in principle prevented the development of a first-hand acquaintance with a larger sample of women joined with a more extensive reliance on their own account of their character traits and mental dispositions.

However, Mill singled out another methodological predicament that a mere improvement in the observational procedure would not accommodate as easily. For he maintained that

"What is now called the nature of women is an eminently artificial thing – the result of forced repression in some directions, unnatural stimulations in others" (*Ibid.*, p. 276).

It was not only that the appraisal of women's character traits was difficult. More radically, Mill maintained that what was observable was a deformation of women's nature. Drawing covertly on an ethological account of how the subjection of women by men's power moulded the former, this motif of the influence of the circumstances on women's personality ran throughout his book. Of course, given Mill's previous recantation of the availability of an ethological analysis, his claim to show how the conditions women were subjected to impacted on their character sounds strange. But even if this account could certainly not qualify as scientific by Mill's own standard, it was nonetheless a plausible one. As Mill put it,

“Conjectures are all that can at present be made; conjectures more or less probable, according as more or less authorized by such knowledge as we yet have of the laws of psychology, as applied to the formation of character” (*Ibid.*, pp. 278).

So Mill conjectured, rather convincingly in my view, about the manner in which women’s present lot guaranteed the continuation of their subjection. For everything was made so that the actual paternalistic order would endure:

“All women are brought up from the very earliest years in the belief that their ideal of character is the very opposite to that of men; not self-will, and government by self-control, but submission, and yielding to the control of others. All the moralities tell them that it is the duty of women, and all the current sentimentalities that it is their nature, to live for others, to make complete abnegation of themselves, and to have no life but in their affections” (*Ibid.*, pp. 271-2).

Women’s education, based on the idea that all the mental cultivation girls needed to receive was circumscribed to the few skills necessary to the entertainment and pleasures of their male associate; their domestic life, which narrowed their interests to the care and nurturing of the members of their family; and their social position, which excluded them from taking an active part in the productive and political aspects of the public sphere; all these circumstances were likely to explain why women had not been able to compete on a par with men in various respects, including intellectual ones. Their character had been shaped so as to best serve the purposes men ascribed to women: that of a loving servant. And as Mill himself remarked, the utter cunningness of the whole process culminated in the fact that it instilled in women the belief that their present condition was natural: hence “it is accepted voluntarily; women make no complaint, and are consenting to it” (*Ibid.*, p. 270).

What is problematic about Mill’s account of women’s deformation, besides his issuing some sort of ethological analysis, is that it apparently contradicts his previous point about the lack of an adequate knowledge of human nature. For on the one hand, as seen above, Mill argued that nobody knew what women’s nature was (what G.W. Smith labels the *Ignorance Claim* or IC)<sup>30</sup>. But, on the other hand, Mill claimed that the character women displayed as a result of their subjection was unnatural (the *Unnaturalness Principle*, or UP). But is it possible to know that a certain state of a given thing is unnatural if one ignores the nature of the thing considered?

David Stove has argued that this joint upholding of UP and IC, that is “the conjunction of ‘I know that the subjection of women to men is unnatural’, with ‘the nature of women is quite unknown, or else there is no such thing’, constitutes the “central mistake in the *Subjection of Women*” (D. Stove, “The Subjection of John Stuart Mill”, p. 12)<sup>31</sup>. According to Stove, Mill’s howler derives from his not realizing that the knowledge of what is not natural for a thing supposes the knowledge of what is natural for that thing, which renders the assertion of UP dependent on a knowledge of women’s nature and therefore belies IC. Because he judges Mill’s inconsistency “too obvious to make a detailed analysis of it worth the trouble” (*Ibid.*, p. 8), Stove leaves us with an example that is supposed to expose Mill’s logical blunder:

“Suppose we were asking about the nature of a certain kind of physical object, the X’s. And suppose that the question were, more specifically, what the natural or proper *shape* of an X is; whether it is spherical, or a disk, or like a bullet, or what. Then someone would contradict himself if he held that no one knows anything about the natural shape of X’s but also claimed to know that certain particular X’s have been pushed *out of shape* by something or other” (*Id.*).

Now, most commentators<sup>32</sup> agrees that Stove’s point does not hold, because there is nothing contradictory in maintaining that something is pushed into an unnatural shape whilst claiming that one does not know the nature of that thing.

Let us take Stove’s example of shape to see why. Imagine that I enter a garden in which I encounter several trees of apparently the same species but whose respective foliages have been pruned so as to represent different animals. In that case, even if I do not know what is the natural shape of the trees when left uncut, I surely know that their actual shape is unnatural. Knowing nothing about the natural shape of a thing does not entail knowing nothing about what is not its natural shape, for the latter kind of knowledge derives from our awareness of human intervention. In the case of women, we know that they are moulded by male power and we know that this moulding makes them different from a situation in which no such moulding would take place, even if we are not able to tell what exactly the difference amounts to.

Mill’s own line of argument, which drew heavily on a horticultural metaphor close to that of the “tree” example I have just mentioned, reinforces the interpretation proposed by Stove’s critics. As Mill put it,

“in the case of women, a hot-house and stove cultivation has always been carried on of some of the capabilities of their nature, for the benefit and pleasure of their masters. Then, because certain products of the general vital force sprout luxuriantly and reach a great development in this heated atmosphere and under this active nurture and watering, while other shoots from the same root, which are left outside in the wintry air, with ice purposely heaped all around them, have a stunted growth, and some are burnt off with fire and disappear; men, with that inability to recognize their own work which distinguishes the unanalytic mind, indolently believe that the tree grows of itself in the way they have made it grow, and that it would die if one half of it were not kept in a vapour bath and the other half in the snow” (J. S. Mill, *The Subjection of Women*, pp. 276-7).

This analogy was supposed to suggest that male intervention thwarted the spontaneous development of women’s character by favouring the manifestation of certain traits (submissiveness) and frustrating some other dispositions (self-will). It assumed that the natural character of women would appear if male interference was removed or, to use Smith’s able phrase, women’s nature would be known only when the “human topiary” (G.W. Smith, “J. S. Mill on What We Don’t Know about Women”, p. 43) practised by men over women would cease. Apparently, the horticultural metaphor saves Mill from the charge of inconsistency: it would not be contradictory to maintain the conjunction of IC and UP.

Yet, as G.W. Smith remarks, a closer inspection of the metaphor reveals that it does not deliver what Mill is after. Firstly, because it gives a conception of character formation that is at odds with Mill’s view. Secondly, because it evokes a totally unMillian manner of ending women’s subjection. And thirdly, because it actually fails to prove that IC and UP are compatible claims.

What was implied by the horticultural metaphor regarding the formation of human character? Here again, it is helpful to stop to consider the meaning Mill ascribed to the words “natural” and “unnatural”. As the topiary simile suggests, the difference between the two lies in the fact that a state of affairs is “unnatural” (or artificial) when it results from human agency, whereas it is “natural” when it results from a purely material agency. Consequently, the contrast conveyed by the metaphor is that of an opposition between nature and society, which assumes that women’s natural character would appear with the removal of human (and most notably male) intervention. But this view is incompatible with Mill’s own conception of character formation. For, as seen previously<sup>33</sup>, both Mill’s empiricist-associationist theory of knowledge and his environmentalism induced him to consider one’s personality as primarily the effect of the human influences one is

subjected to. As G.W. Smith claims, “human beings depend precisely upon social circumstances for the development of their potentialities and powers” (*Ibid.*, p. 44). So the idea of a character developing in a human vacuum belies Mill’s deeply rooted conception of the gist of the ethological process, according to which any character, deformed or not, is artificial.

Secondly, it seems that the topiary simile advocates some sort of sexual seclusion – women being put out of reach of men’s influence – that would let the potential of women express unfettered. But Mill’s feminism is certainly not about creating some sort of sexual apartheid: what he wants to promote is equality within a society comprised of men and women.

Thirdly, the nub of Mill’s horticultural metaphor also threatens Mill’s feminist argument in so far as it rests on the conjunction of IC and UP. For Smith points out that if Mill wants to conserve the topiary image, he must find what distinguishes between “constraining” and “unconstraining” male social intervention. Given Mill’s earlier emphasis on the conditioning of women by their present paternalistic subjection, which “mis-shape their wants, narrow their mental horizons and constrict their aspirations” (*Ibid.*, p. 46), he cannot rely on women’s own actual desires and longings since those are not ultimately theirs but rather those created by their male oppressors. But if so, Mill can only distinguish between “liberating” and “oppressive” conditions because he assumes *a priori* what desires and longings are natural or not for women to have, which is incompatible with IC. As Smith suggests, that is exactly what the reasoning behind the topiary image requires, since

“just as the gardener needs to know the nature of a plant before he can distinguish inhibiting from enabling growth-conditions – the circumstances which enable the cactus to flourish will kill the lily – so Mill requires a prior conception of female nature in terms of which to distinguish desire-constraining (i.e. ‘unnatural’) from desire-liberating (i.e. ‘natural’) social circumstances” (*Id.*).

At first glance, there seems no easy solution to this conceptual predicament. To get rid of either component of the incriminated conjunction will not do. For to give up IC would amount to arguing that Mill is in possession of a reliable knowledge of women’s nature, a position very few would endorse in the light of Mill’s own acknowledgment of the failure of ethology. Furthermore, it would weaken his attack on the biological arguments for subjection. On the other hand, the abandonment of UP would sap the call for a reformist plan in favour of women’s

emancipation, since it is the awareness of the detrimental effects of subjection on women in particular, and of society at large, that legitimated the urgency of the transformation of existing social arrangements. Obviously, neither solution is satisfactory: the former claims an epistemic basis that Mill's argument lacks; the latter makes light of his deeply-held conviction that the subjection of women was a social evil to be tackled head-on. One is left wondering whether, besides the "topiary" metaphor, Mill can provide a valid alternative argument for the emancipation of women.

#### **D - The Analogical Argument for Women's Emancipation.**

The gist of Mill's challenge resided in being able to assert jointly IC and UP. The former claim was supposed to discard any argument for women's subjection based on an unreliable knowledge of female nature, whereas the latter, by stressing the deleterious effects of sexual domination, gave part of its motivation to the feminist struggle. And the problem lay in not having UP depending on IC, that is in avoiding assessing women's present condition as unnatural in the light of knowledge of women's nature which Mill had, at the outset of his analysis, claimed we do not have.

Interestingly enough, one finds an argument to that effect in the first chapter of the *Subjection of Women*, which rested on the parallel existing between the present case of women and that of groups which had been oppressed in the past on account of their alleged natural inferiority but eventually got emancipated. The interest of this line of reasoning<sup>34</sup>, which we have first encountered in the correspondence with Comte<sup>35</sup>, is that it enables one to defuse the charge of inconsistency addressed to Mill's topiary metaphor. For it allows him to stick to his declaration of ignorance as to "what is, or is not, [women's] vocation" (J. S. Mill, *The Subjection of Women*, p. 280) whilst arguing that the social subordination of women (...) stands out an isolated fact in modern social institutions" (*Ibid.*, p. 275), is a "relic of the past [that] is discordant with the future, and must necessarily disappear" (*Ibid.*, p. 272). In that instance, there is no contradiction involved in the joint upholding of IC and UP because the unnaturalness of women's condition is not premised on an acquaintance with their nature but rather on the consideration of mankind's social progress and a comparison of it with women's present lot.

Mill's argument drew both on a contrast and an analogy. As for contrast, Mill distinguished two kinds of social arrangements which he held to be characteristic of pre-modern and modern societies respectively. In the former, individuals were subjected to a fixed social position determined by their birth and status and were held at this position by law and custom. A slave could not become a freeman, or a commoner could not become a noble. The rationale for such an organization was that society needed to be hierarchically structured so as to minister most diligently to the needs of its members. As Mill put it,

“The old theory was, that the least possible should be left to the choice of the individual agent; that all he had to do should, as far as practicable, be laid down for him by superior wisdom. Left to himself he was sure to go wrong” (*Ibid.*, p. 273).

On the other hand, modern societies had chosen to leave to the unfettered choice of individuals the election of a career or an occupation because unrestricted competition between various contenders proved socially more productive and more efficient. Given the unreliability of the grounds on which pre-modern social organization was premised (birth or status) and the fact that a task is generally carried out more satisfactorily when freely chosen, the acknowledgement of the “general principle of social and economical science” (*Ibid.*, p. 274) that considered each to be the best judge of her interests had resulted in the liberalization and deregulation of most human activities. Accordingly,

“In consonance with this doctrine, it is felt to be an overstepping of the proper bounds of authority to fix beforehand, on some general presumption, that certain persons are not fit to do certain things” (*Id.*).

So the contrast between modern and pre-modern societies can be summarized as follows: in modern societies,

“human beings are no longer born to their place in life, and chained down by an inexorable bond to the place they are born to, but are free to employ their faculties, and such favourable chances as offer, to achieve the lot which may appear to them most desirable” (*Ibid.*, pp. 272-3).

The analogy could then be set to work, for Mill suggested – as we have seen him doing in his correspondence with Comte - that the present condition of women was strikingly similar to that of certain oppressed male groups in pre-modern societies. For just as, say, slaves in antiquity had not been held capable to live the same kind of rational life as freemen, or commoners had been denied a voice in the

conduct of military affairs because they were supposed to lack warlike virtues, women had been refused freedom of choice and action because they had been said to lack the necessary moral and intellectual qualities necessary for an existence of that kind. But just as the new ruling principle typical of modern societies had permitted slaves and commoners to display and put in practice for their own benefit and that of society the qualities they have been so far denied to have, the same could be expected for women if only they were given the chance to try out their potential.

“But if the principle is true, we ought to act as if we believed it, and not to ordain that to be born a girl instead of a boy, any more than to be born black instead of white, or commoner instead of a nobleman, shall decide the person’s position through all life – shall interdict people from all the more elevated social positions, and from all, except a few, respectable occupations” (*Ibid.*, p. 274).

In other words, the disabilities to which women were subject on account of their sex were unnatural, that is contrary to the “whole stream of modern tendencies” (*Ibid.*, p. 272), because they contradicted the progressive trend typical of advanced societies, which favoured the free and autonomous development of individuals unless it impinged on the rights of others<sup>36</sup>.

Now, the obvious question to ask is whether the analogy applies to the case at hand. Can one extend what is true of formerly dominated male groups to presently oppressed women? Could not one say that it just begs the question to assume that a parallel could be drawn between men and women when what one is really after is the appraisal of the differences between the sexes? To that objection, one could reply that the above argument was not intended as a demonstration of sexual equality (even if Mill believed that men and women had similar moral and intellectual capacities) but as a proposal for an experimental setting in which this claim could be assessed. To avoid any confusion, it is helpful to distinguish three related but logically independent theses one might attribute to Mill. Firstly, there is the “positive thesis for sexual equality”, which claims that both sexes are on par in terms of intellectual endowments. Secondly, there is the “negative thesis for sexual equality”, which maintains that none of the grounds so far adduced justify the subjection of women. Thirdly, there is the “emancipation thesis”, which maintains that the removal of all social, legal, and political barriers imposed on women is the crucial test for assessing the capacities of women. In the *Subjection of Women*, Mill defended only the “negative thesis for sexual equality” and the “emancipation

thesis”, even if he certainly hoped that the “emancipation thesis” would provide the experimental setting in which to establish the truth of the “positive thesis for sexual equality”. For, since we have no independent reliable knowledge on which to ground our analysis, the only way to decide what women can or cannot do is to let them try and see what happens. Just as Aristotle’s speculations as to the existence of “different natures among mankind, free natures, and slave natures” (*Ibid.*, p. 269) had been refuted by the fact that emancipated slaves could live as rational and virtuous a life as that of their masters, the nature and scope of women’s abilities could only be known when called out. In both cases, our ignorance could be remedied only by experiment, that is by emancipation. Mill’s analogical argument was meant to deliver this practical message.

But the argument had other – rhetorical – advantages. Firstly, by resorting to historical evidence, Mill encroached on one of the favourite domains of his opponents and showed that there existed another interpretation of the “experience of mankind” which reached conclusions opposed to that of Comte<sup>37</sup>. Secondly, by setting women’s emancipation in the larger context of the gradual enlargement of civil and social freedom characteristic of modernity, Mill turned the support of women’s emancipation into a matter of political consistency and dulled some of the revolutionary aspects of the cause that might have alienated many of his Victorian readers. For if one had welcomed the Reform Acts of 1832 and 1867, which granted voting rights to previously disfranchised citizens, and if one had celebrated the victory of the abolitionist party in the American Civil War, Mill’s argument suggested there was no reason to shrink from extending the liberating movement to women

Moreover, by singling out women’s subjection as “a single relic of an old world of thought and practice exploded in everything else, but retained in the one thing of most universal interest” (J. S. Mill, *The Subjection of Women*, p. 275), Mill clearly indicated what was the next social evil to address, thereby conveying the sense of urgency and the need for change he already hinted at with UP.

In addition, the analogical argument had practical consequences that could only please a liberal social reformer of Mill’s stamp. Firstly, it called for an *immediate* emancipation of women as the proper way to settle the sexual equality issue. Secondly, it fit Mill’s conception of a knowledge-based reformism, even if to some extent rather different from the one imagined in the *System of Logic*: reform

produced knowledge, since the acquisition of the knowledge of human nature that would transcend IC was inseparable from the reform process itself. Thirdly, the kind of emancipation proposed (the granting of opportunities to women so to enable them to test their capacities) tallied perfectly with the liberal baseline conception of equality Berger ascribes to Mill<sup>38</sup>, in which inequalities were warranted only as long as they were deserved or earned through voluntary effort. As Mill put it, it was not that “all persons [were supposed] to be equally qualified for everything” (*Ibid.*, p. 273), and therefore that there should not be any departures allowed from a strict conception of equality. Rather, it would be the case that the merit of individuals would be judged according to their achievements, and irrespective of their sex. Certainly, people would end up with unequal lots, but this would be the consequence of what they do, not what they are. This was the gist of Mill’s liberal feminism.

For now one might conclude that the analogical argument for women’s emancipation provides a satisfactory way to defuse the logical charge of inconsistency levelled against Mill’s joint upholding of IC and UP: for it allows one to claim that the subjection of women is unnatural even if we are ignorant of what women’s nature is. However, even if as a matter of logic the analogical argument seems to be valid, many feminist commentators have underlined that some of Mill’s actual statements in the *Subjection of Women* appear to belie one of its components, namely IC. It is to that objection that I now turn.

#### **E – Mill on “Feminine” Traits: Logical Inconsistency or Rhetorical Ingenuity?**

One major source of the criticisms levelled against the soundness of the case for female emancipation in the *Subjection of Women* resides in the allegation that Mill blatantly contradicted his declaration of ignorance as to women’s nature in Chapter I by offering in Chapter III a description of “the capacities of women in general” (*Ibid.*, p. 201) he thought could justify their involvement in social, professional, and political activities so far closed to them. For instance, by drawing on the examples of female monarchs, regents and rulers<sup>39</sup>, Mill attempted to show that certain women had contributed as successfully as men to the running of public affairs. Mill also suggested that women’s capacity of intuitive perception and sense of reality would prove useful in practical matters outside the household. But, so the argument goes, by doing so Mill fell prey to inconsistency for, whereas he had

earlier claimed that one could not know women's true nature because their character has been distorted by men's subjection, he nonetheless embarked on what he had so far deemed impossible, i.e. a disquisition on what were the "peculiar tendencies and aptitudes characteristic of women" (*Ibid.*, p. 304).

Several commentators have castigated Mill for having committed what they take to be a crucial logical mistake, and have tried to show how this howler compromises Mill's overall case for sexual equality and his argument for women's emancipation. Jennifer Ring claims that Mill's invocation of alleged "feminine" practical qualities to support women's wider participation in the public sphere merely constitutes a "capitulation to stereotypes" (J. Ring, *Modern Political Theory and Contemporary Feminism*, p. 66) and comforts the traditional patriarchal conception of women's nature, most notably by insinuating that they are deprived of speculative abilities<sup>40</sup>. Julia Annas contends that the fact of "arguing from a few examples to the capacity of women in general in a specific respect – e.g. from a few women rulers to women's bent for the practical" amounts to committing "the fallacy of arguing from the behaviour of a few to the behaviour of all members of a class like women" (J. Annas, "Mill and the Subjection of Women" pp. 183-4), the very fallacy of which Mill had accused his opponents. Moreover, Annas maintains that it is dangerous ground for a feminist to argue from such a historical sample, for "there have always been many more women who have failed to rise above their education than have succeeded" (*Ibid.*, p. 184). Finally, Mary Lyndon Shanley underlines the oddness of Mill's reliance on women's present character traits, which he nonetheless regarded as the product of their subordination, to support "his brief for eliminating barriers to their participations in public life" (M.L. Shanley, "The Subjection of Women", p.406)<sup>41</sup>, and argues that Mill's way of arguing seems to assume that "women be admitted to the franchise and public life not because their humanity entitled them to the same rights as men, but because of various sex-based traits" (*Id.*). In the remainder of this sub-section, I will attempt to show to what extent these various objections can be defused when the exact targets and purposes of Mill's arguments are correctly identified, their rhetorical dimension duly taken into account, and the content of his liberal feminism properly understood.

As for Mill's "capitulation to stereotypes", Ring's charge certainly finds textual support in Mill's unqualified claim that

“looking at women as they are known in experience, it may be said of them, with more truth than belongs to most other generalizations on the subject, that the general bent of their talents is towards the practical” (J. S. Mill, *The Subjection of Women*, p. 305),

a statement Mill declared conformable to “all the public history of women” and borne out by “common and daily experience” (*Id.*). Surely, the hopelessly broad scope of that assertion might suggest that Mill was not totally immune from entertaining the kind of preconceived and oversimplified ideas of the characteristics typifying women he often criticized in others. However, his failure to distance himself from some of the prejudices of his time should not prompt one to believe that Mill ended up agreeing with his opponents. For Mill would have really capitulated to stereotypes if he had maintained that what women presently were or did was all they could ever be or do. But that was exactly what he refused to conclude when he stated that he was considering

“the peculiar tendencies and aptitudes characteristic of women, as women have hitherto been. I do not say, as they will continue to be; for, as I have already said more than once, I consider it presumption in any one to pretend to decide what women are or are not, can or cannot be, by natural constitution” (*Ibid.*, pp. 304-5).

Moreover, whereas his opponents rooted their stereotypes in what Ring rightly calls an “unexamined use of feminine ‘nature’ ” (J. Ring, ““Mill’s The Subjection of Women: The Methodological Limits of Liberal Feminism”, p. 39), Mill went the opposite way and ascribed women’s present moral and intellectual characteristics to environmental influences, for he argued that

“even the least contestable of the differences which now exist, are such as may very well have been produced merely by circumstances, without any difference of natural capacity” (J. S. Mill, *The Subjection of Women*, p. 305).

In that respect, the case of women’s capacity of intuitive perception and sense of reality offers a good illustration of the manner in which Mill’s conception of the formation of character traits prevented him from turning some contingent properties into necessary features of one’s nature. For Mill tirelessly repeated in Chapter II and III of the *Subjection of Women* that if women had developed “this practical bent”, these capacities of being able to shift quickly one’s attention from one thing to another and of adapting general rules to particular instances, it was very likely to be the outcome of their daily managing of the multifarious and never-ending chores associated with the household existence they were confined to. That

“capacity of passing promptly from one subject of consideration to another”, Mill contended, women

“perhaps have it from nature, but they certainly have it by training and education; for nearly the whole of the occupations of women consist in the management of small but multitudinous details, on each of which the mind cannot dwell even for a minute, but must pass on to other things, and if anything requires longer thought, must steal time at odd moments for thinking of it” (*Ibid.*, p. 310).

In other words, the “feminine practical” type was just for Mill the result of at least women’s exposition to a certain kind of circumstances which in turn favoured the development of certain character traits. As he later concluded,

“Whoever is in the least capable of estimating the influence on the mind of the entire domestic and social position and the whole habit of a life, must easily recognize in that influence a complete explanation of nearly all the apparent differences between women and men, including the whole of those which imply any inferiority” (*Ibid.*, p. 320).

As seen previously, for all its plausibility, Mill’s environmentalist account merely remained an appealing conjecture. But conjecture or not, it was in any case radically opposed to the kind of essentialist stereotyping Ring evokes: for what most ascribed to a mysterious “nature” so as to defuse further questioning, Mill wanted to explain by overcoming (most) preconceived and oversimplified ideas about women.

What about Annas’ claim that Mill, by arguing from the examples of a few women rulers to women’s bent for the practical, committed the fallacy of extrapolating the behaviour of all the members of a given class from the behaviour of a few members of that class? I believe Annas misses Mill’s point when she suggests that he primarily intended the “women’s rule argument” to prove inductively something about women’s nature in general. The examples of female monarchs, regents and rulers Mill adduced were meant as so many refutations of what he regarded as the only proposition strong enough to justify the exclusion of women from competing with men for occupations and functions in the public sphere:

“that no women at all are fit for them, and that the most eminent women are inferior in mental faculties to the most mediocre of the men on whom those functions at present devolve” (*Ibid.*, p. 300).

As Mill made clear, his use of historical examples of successful woman rulers was a polemical weapon aimed at the theoretical groundings of the patriarchal position.

For in the case at hand, logic had it that one counter-example was enough to refute the argument that licensed the exclusion of women from the public sphere. Furthermore, this tied in nicely with the other crucial logical point Mill had made in the course of his analysis of the arguments bearing of the sexual equality issue<sup>42</sup>, namely that universal negatives (such as ‘women will never become the equals of men intellectually’) were groundless. As Mill put it,

“in this case, negative evidence is worth little, while any positive evidence is conclusive. It cannot be inferred to be impossible that a woman should be a Homer, or an Aristotle, or a Michael Angelo, or a Beethoven, because no woman has yet actually produced works comparable to theirs in any of those lines of excellence. This negative fact at most leaves the question uncertain, and open to psychological discussion. But it is quite certain that a woman can be a Queen Elizabeth, or a Deborah, or a Joan of Arc, since this is not inference, but fact” (*Ibid*, p 302).

What these examples were conclusive evidence of was that the major premise of the patriarchal argument was false: it was simply not the case that the most eminent women were inferior in mental faculties to the most mediocre of men. Consequently, in the absence of any reliable source of information regarding the respective capacities of men and women, the emancipation of the latter and their participation in the competition for professions and occupations was the only way the sexual equality issue could be adjudicated.

Now, as Annas rightly underlines, the ground on which Mill argued for sexual equality – what I called earlier the “positive thesis for sexual equality” – was excessively narrow: he had nothing more to rely on than *the possibility* that it might turn out that women *could* compete with men (for a few did in the past), but certainly no assurance that they *would*. This was all his argument warranted.

This emphasis on the precise nature of Mill’s argument for emancipation helps us to distinguish two facets in Mill’s commitment to women’s cause: on the one hand, Mill surely believed that it was illegitimate to discriminate against, or in favour, of individuals on account of sex, because there was no good reason either of justice or expediency for doing so; on the other hand, as an individualist liberal, Mill also held that what entitled a person to moral praise and social reward was that person’s achievements, irrespective of her sex. So, what Mill in the end advocated was an equality of opportunity (the removal of all barriers to female freedom of action and thought, the possibility of receiving a proper education, etc.).

Finally, now that peripheral objections to Mill's way of arguing have been dealt with, time has come to focus on the central charge levelled against the coherence of the *Subjection of Women*. M.L. Shanley aptly sums it up as follows:

"Where Mill argued in chapters I and II that one could not know women's true nature because the character of women (...) had been distorted by the relationships of domination and subordination between the sexes, in chapter III he frequently invoked women's nature (that is their present nature) as a reason for dropping barriers to their wider social and political participation"  
(M.L. Shanley, "The Subjection of Women", p. 405).

Several sources of concern motivate Shanley's questioning of the consistency of Mill's argument. Firstly, his apparent surrender of the claim, which was central to his analogical argument for the emancipation of women, that woman's nature is unknown. Secondly, the oddness of appealing to the present character traits of women, which Mill himself presented as the products of their subordination, to support their integration in the various activities typical of the public sphere. And thirdly, the fact that Mill's way of arguing seems to assume, contrary to the central tenet of the feminist liberalism I have ascribed to him, that "women be admitted to the franchise and public life not because their humanity entitled them to the same rights as men, but because of various sex-based traits" (*Ibid.*, p. 406).

As for the first problem, one finds in Mill's essay "Nature"<sup>43</sup> (one of the *Three Essays on Religion* written between 1850 and 1858) a conceptual distinction between two meanings of the term "nature" that helps to clarify what exactly Mill assumed when he upheld IC. On the one hand, if the "nature" of women is understood as the set of attributes that they would display "without the agency, or without the voluntary and intentional agency, of man" (i.e. in the absence of any socializing process), Mill certainly thought that it was simply impossible for one to know women's (or men's) nature: firstly, because mankind was a social species, and secondly because he held that human development was the result of socialization. Consequently, when Mill reviewed "the peculiar tendencies and aptitudes characteristic of women" (J. S. Mill, *The Subjection of Women*, p. 304) in chapter III, he could not have considered these tendencies and aptitudes as "natural", in the sense of resulting from a process in which human intervention had no part. On the contrary, Mill emphasized the artificial character of these capacities, which he held to be dependent on the social environment in which they thrive. Therefore, on that interpretation, Mill did not surrender IC.

On the other hand, if by the “nature” of a thing one understands “the ensemble or aggregate of its powers or properties”, that is “the modes in which it acts on other things (...) and the modes in which other things act upon it” (J. S. Mill, “Nature”, p. 374), Mill’s ignorance claim should not be interpreted as a claim of total ignorance. Mill’s own account of how women’s “practical bent” derived from an existence confined to ancillary tasks also indicated that some knowledge of their nature, albeit shallow, was already available. So, what Mill wanted to convey when he said that no one knew woman’s nature was that the *full range* of their capacities and abilities could not have been observed yet. Since the formation and display of these capacities depended on “circumstances” and given that women, because of their subjection, had only been exposed to a very narrow range of influences (mainly those constitutive of a household life), their “entire capacity of exhibiting [mental] phenomena” (*Id.*) had not been tried out. As D.G. Brown argues, what Mill’s position assumed was a “denial of tolerably complete or adequate knowledge” but not a denial of “all knowledge” (D.G. Brown, “Stove’s Reading of Mill”, p. 125) of women’s nature. Now, on this weak reading of IC, Mill would have contradicted himself if and only if he had argued in chapter III that the capacities he was describing were the only ones that women could exhibit. But, as argued above, that was his refusal to make this move that was at the root of his argument for the emancipation of women. Accordingly, it is not the case that Mill’s reliance on the present character traits of women belied his upholding of IC.

What about Shanley’s concern with Mill’s appeal to the present character traits of women, as supporting their integration in the various activities typical of the public sphere? At first glance, it is difficult not to agree with Shanley that the way Mill proceeded seems somewhat awkward. For if the present character traits of women – such as intuitive perception and the sense of reality – were so useful, one might be tempted to conclude that women’s subjection was not after all that bad, since it fostered those qualities of mind. But if so, why would one want to embark on the large scale plan of reforms advocated by Mill with respect to franchise, employment, and family? If the daily management of the household was conducive to a “practical bent”, the best for men was to keep women at home - where they would continue to carry out their usual tasks - and call on them when needed. Surely, this kind of emancipation was not what Mill had in mind.

However, one might argue that Mill's appeal to women's present character traits, for all its potential drawbacks, also served a psychological and rhetorical purpose in his advocacy for emancipation. What Mill tried to do when he held out the practical prospects of women's involvement in public affairs to his readers was to convince them that women's liberation would be socially beneficial. He had to show them that, in some respects, the actual improvements it would bring were not far in the future, for some of its ingredients were already present. Eventually, he had to appease some of the fears aroused by the changes he advocated. By arguing that women could use long-time recognized domestic virtues to help men in their running of public practical matters, Mill attempted to reach these three goals at once. Of course, the range of transformations he called for in the social realm was much more ambitious than that. But, as a reformist primarily relying on his power of persuasion, the primary condition for Mill's success in his feminist endeavour was for him to lure his audience into his cause.

Unfortunately Mill's rhetorical engagement to win his readers' approval sometimes blurred his discourse. For, as Shanley remarks (M. L. Shanley, "The Subjection of Women", p. 406), after having underlined the almost slave-like condition of women in modern societies and the moral and psychological debasement it caused, Mill tipped the balance in the opposite direction by emphasizing how well women's present turn of mind made them apt to intervene in public affairs alongside men.

However, one might clear Mill from the charge of inconsistency by once again qualifying some of his claims. For although he insisted on the deformation of women's nature so as to convey the necessity and urgency of changes in their condition, Mill certainly did not think that nothing could be saved from existing social arrangements. In the case at hand, a household life at least had the advantage of developing a "practical bent". Similarly, one might perhaps have argued that marital subjection had sown in women the seed of this sense of "restraining discipline" Mill regarded as a necessary ingredient of the social union, by training them "in the habit, and thence the power, of subordinating [their] personal impulses and aims, to what were considered the ends of society" (J. S. Mill, "Coleridge", p. 133)<sup>44</sup>. This difficulty in disentangling the positive from the negative effects of subjection was well illustrated by the problem of the cultivation of moral feelings. For on the one hand, as Mill suggested, because the

“education which women receive from society inculcates on them the feeling that the individuals connected with them are the only ones to whom they own any duty – the only ones to whom they won any duty” (J. S. Mill, *The Subjection of Women*, p. 321),

they tended to display a form of altruism which, albeit restricted to the family, was better than the rank egoism so often found in men. On the other hand, that same education left women strangers “even to the elementary ideas which are presupposed in any intelligent regard for larger interests of higher moral objects” (*Id.*). So, what was truly oppressive in women’s subjection was not so much that it favoured practically detrimental or morally contemptible character traits – which it certainly did in certain respects, but not in the case of the practical skills referred to by Mill -, but rather that it favoured a one-sided development of the individual’s full range of capacities.

What is particularly interesting in this manner of qualifying Mill’s claims about the deformation of women’s nature is that it links his advocacy of female emancipation to some of the prominent themes of his later writings, namely the romanticist-inspired advocacy of ‘many-sidedness’, the apology of human wholeness, and the plea for “experiments of living” (J. S. Mill, *On Liberty*, p. 261) as the only way to discover one’s individual nature. In a passage of Chapter III of *On Liberty* which announced the development of the *Subjection of Women*, Mill claimed that

“human nature is not a machine to be built after a model, and set to do exactly the work prescribed for it, but a tree, which requires to grow and develop itself on all sides, according to the tendency of the inwards forces which makes it a living thing” (*Ibid.*, p. 263).

For, unlike a machine, which is set to perform a certain purpose and is constrained by the very features of its task, a character obeys an internal law of development which is proper to itself and which can be nurtured or thwarted by the circumstances. Given our inability to predict the content of this character by any scientific means, every one should be allowed to try out for himself or herself different styles of life (Mill’s “experiments of living”), and choose, through a autonomous and self-critical process of trial-and-error, the one which seems to fit best one’s character and expectations. This was the only way one could discover one’s nature, that is “the ensemble or aggregate of its powers or properties” (J. S. Mill, “Nature”, p. 374) one was endowed with. Obviously, this argument, which

Mill invoked to secure individuals' rights to engage in whatever kind of life they wish unless it harmed others, also bear on the case of women: in the absence of any *a priori* knowledge about their nature, the only way to assess their capacities was to emancipate them from men's rule and see what happened. But if the logic of Mill's general emancipatory argument applies to the case of women, it is because it is supposed they partake in a common human nature with (male) individuals in general, and not, as M. L. Shanley fears, because of various sex-based traits.

To be sure, Mill's account of the manner in which the greater involvement of emancipated women in public affairs would benefit society at may appear to support some of the very prejudices he was opposing: for instance, by limiting the role of women to that of a practically-minded check on men's plans and projects, Mill might have given his readers the impression that women were not fit for speculative or theoretical tasks.

The danger of such a stance has been clearly spotted by J. Annas when she reminds us that

"As long as one admits that women are intuitive and men suited to reasoning, one's best efforts at valuing women's contribution will be patronizing and damaging, encouraging women to think that the most highly regarded intellectual achievements are not for them" (J. Annas, "Mill and the Subjection of Women", p. 185).

Now, this reluctance on Mill's part to challenge more radically some of the most traditional representations of sexual differences may once again be ascribed to his desire not to alienate his mildly conservative readers from the feminist cause: by proposing, as one of the first steps in his plan of social reforms, a very gradual extension of women's participation in the public sphere on account of some of their generally acknowledged capacities, Mill surely attempted to convince his audience of the viability of female emancipation. Furthermore, in the light of his environmentalism, one might suspect that Mill held that a complete transformation of the methods and goals of women's education would be necessary before most of them could venture into intellectual and theoretical work on a par with men.

Finally, these strategic arrangements Mill made with his readership's prejudices so as to further women's emancipation should not obscure the fact that his commitment to the feminist cause was grounded in a liberal humanism that transcended the sexual divide. For Mill believed that a harmoniously developed character would have to include character traits so far deemed "masculine" and

“feminine”, what N. Urbinati calls “psychological androgyny” (N. Urbinati, “John Stuart Mill on Androgyny and Ideal Marriage”, p. 630)<sup>45</sup>. This ideal of human flourishing, which laid stress on human originality and provided “experiments of living” with their epistemic rationale, was a long-standing element of Mill’s moral views that can be traced back to some of his 1830s writings and his early correspondence<sup>46</sup>. An exchange with Thomas Carlyle aptly summarizes Mill’s views on the subject. In a letter to Mill, Carlyle claimed that Madame Roland “was almost rather a man than a woman” (Mill to Thomas Carlyle, October 5, 1833; J. S. Mill, *The Earlier Letters*, p. 184), suggesting that manliness in a woman was unnatural. In his reply, Mill did not object to the fact that Madame Roland – the wife of a Girondin Minister during the French Revolution and renown *salonarde*, who was eventually guillotined – fit Carlyle’s description, but rather to Carlyle’s doubts about the excellence of her character, and, more generally, to his claim that the possession of “masculine” traits of character compromised the excellence of the “feminine” character<sup>47</sup>.

“I believe that I quite agree in all that you really meant, but *is* there really any distinction between the highest masculine, & the highest feminine character? I do not mean the mechanical *acquirements*; those, of course, will very commonly be different. But the women, of all I have known, who possessed the highest measure of what are considered feminine qualities, have combined with them more of the highest *masculine* qualities than I have ever seen in any but one or two men, & those one or two men were also in many respects almost women. I suspect it is the second-rate people of the two sexes that are unlike – the first rate are alike in both – except – no, I do not think I can except anything” (*Id.*)

Several elements are worth noting in Mill’s statement. Firstly, Mill assumed that moral predicates applied *de jure* to the entire extension of the concept “mankind” irrespective of the “mechanical *acquirements*”, that is of the purely physical factors correlated with the two sexes. Secondly, Mill claimed that there were some moral traits, traditionally ascribed to women, which had to be regarded as elements of human excellence, even if no details are given as to what these “feminine” qualities could be<sup>48</sup>. But it is not so much the properties of a good character that mattered here, that the fact that a fully developed character was to include several or all of these traits, irrespective of sex. Mill, contrary to a long tradition in moral and social thought, defended an androgynous conception of morality, which could appear obvious to us but was certainly not for most of Mill’s contemporaries<sup>49</sup>. Of course, this latter conception fitted well with his view of how

character traits were acquired and developed: the situation of dependence to which women were generally subjected impressed on them – by way of social conditioning which forced them to adopt certain attitudes and conducts- a debased kind of morality. But other aspects of their existence could prompt them to acquire and develop genuinely valuable moral traits. Accordingly, traits should not be regarded as “sex-based” (understood as biologically determined) but rather as “gender-based”, that is as the result of the endorsement of certain social roles. Thirdly, Mill’s distinction between “first” and “second rate” characters indicated that the contrast between “masculine” and “feminine” traits needed to be overcome and replaced by a conception of excellence based on *human* qualities. And it was this ideal embodied in a few “first rate” characters that gave Mill’s call for female emancipation its ultimate justification. Almost twenty-five years before the publication of the *Subjection of Women*, Mill introduced the same idea to Comte, when he argued that

“people have always perceived in the French, to some degree, a nature regarded as feminine. Even so, what people has produced greater philosophers and more distinguished statesmen?” (Mill to Comte, 30 August, 1847, in Haac [ed.], p. 185).

As I hope to have demonstrated in this last chapter, the argumentative structure of the *Subjection of Women* marks an evolution in Mill’s approach to the “Women’s Questions”. Taking stock of the failure of ethology and giving up the *System of Logic*’s hope of establishing the “positive thesis for sexual equality” on the basis of a “Science of Human Nature”, Mill was nonetheless able to provide supporters of the feminist cause with convincing arguments against sexual discrimination and in favour of women’s emancipation. As I have also tried to show, when proper attention is paid to the various senses in which Mill appealed to the concept of human nature, to his use of rhetoric, and to his endorsement of a typically liberal approach to the sexual equality debate, a clearer understanding of the nature and extent of Mill’s contribution results, which fortunately defuses many of the objections and charges of inconsistency raised against the *Subjection of Women*.

<sup>1</sup> J. S. Mill, *Principles of Political Economy, with Some of Their Applications to Social Philosophy*. Edited, with a Textual Introduction, by J.M. Robson. Introduction by V.W. Bladen. Toronto & London: Toronto & London: University of Toronto Press and Routledge & Kegan Paul, 1965.

<sup>2</sup> The article was unsigned – its topic and tone easily explained why anonymity had been preferred – but Mill’s words convinced Hickson (the editor of the *Westminster Review*) that the paper was Mill’s, which prompted him to publish it in July of 1851. Years later, when Mill decided to reprint his *Dissertations and Discussions*, within which the essay in question had been included, Mill acknowledged Harriet’s authorship by stating that in that case he had simply been an “editor and amanuensis” (J. S. Mill, *Essays on Ethics, Religion and Society*, Appendix C, p. 393) to his wife.

<sup>3</sup> S. Collini, “The Tendencies of Things: John Stuart Mill and the Philosophic Method”, in S. Collini, D. Winch, and J. Burrow, *That Noble Science of Politics. A Study in Nineteenth-Century Intellectual History*. Cambridge: Cambridge University Press, 1983, pp. 127-59.

<sup>4</sup> S. Collini, *Public Moralists. Political and Intellectual Life in Britain 1850-1930*. Oxford: Clarendon Press, 1991. Collini assumes that the ethological failure was a contributing cause to Mill’s silence on the sexual equality issue, but his claim remains a conjecture for want of textual evidence.

<sup>5</sup> J. S. Mill, *The Subjection of Women*, in J. S. Mill, *Essays on Equality, Law, and Education*, pp. 259-340. In fact, the writing of the book had started towards the end of 1860, but Mill decided to wait more propitious times for publication. He suspected that public opinion was not ready to give feminist claims a fair hearing. In the following years, Mill took advantage of the parliamentary platform (he had been elected MP for Westminster in 1865) to further the social visibility and political relevance of the “women’s rights question”, most notably by presenting to the Commons a petition for the extension of the suffrage to women (1866) and by gathering considerable support for an eventually unsuccessful amendment to the 1867 Reform Act, which omitted the reference to the gender of householders entitled to vote. Mill also participated, in close connection with his stepdaughter Helen Taylor, in the foundation of the National Society for Women’s Suffrage and greatly contributed to defining the Society’s political agenda. The fact that this planned agitation had been successful in bringing the sexual equality question to the forefront of public discussion certainly convinced Mill, who had lost his parliamentary seat at the 1868 General Election, that it was time for him to revert to what singled him out as an unrivalled “public moralist” (Collini): the timely delivery of carefully rounded arguments in support of progressive liberal views. The *Subjection of Women* would give Mill’s advocacy of female emancipation its definitive theoretical rationale

<sup>6</sup> Besides Annas (see note 7 *infra*), one may refer to L. Goldstein, “Mill, Marx, and Women’s Liberation”, *Journal of the History of Philosophy* 1980, 18, pp. 319-334; S. Moller Okin, *Women in Western Political Thought*. Princeton: Princeton University Press, 1992, Chap. 9; J. Ring, “Mill’s The Subjection of Women: The Methodological Limits of Liberal Feminism”, *The Review of Politics* 1985, 47, pp. 27-44, and her *Modern Political Theory and Contemporary Feminism. A Dialectical Analysis*. Albany: State University of New York University Press, 1991, Chap. 3 & 4.

<sup>7</sup> J. Annas, “Mill on the Subjection of Women”, *Philosophy* 1977, 52, pp. 179-94.

<sup>8</sup> F.R. Berger, *Happiness, Justice, and Freedom. The Moral and Political Philosophy of John Stuart Mill*. Berkeley: University of California Press, 1984 (esp. pp. 195-204).

<sup>9</sup> See III, IV and V.

<sup>10</sup> S. Collini, “Introduction”, in J. S. Mill, *Essays on Equality, Law, and Education*, pp. vi- lvi.

<sup>11</sup> Mill mentions Queen Victoria, Hindoo princesses, Blanche of Castile, Duchess Anne of Beaujeu, Margaret of Austria, Mary of Hungary, Duchess Margaret of Parma, and Catherine de Medici. See J. S. Mill, *The Subjection of Women*, pp. 302-4. All these women, Mill remarks, “have been much remarked for the firmness and vigour of their rule, as for its intelligence” (*Ibid.*, p. 302).

<sup>12</sup> As we will see shortly (see *infra* VIID, Mill indeed uses a historical argument in support of women’s emancipation, but it is of a different kind than the one just reviewed.

<sup>13</sup> See IIC. Mill’s position was clearly sketched in his 1859 laudatory review of Alexander Bain’s *The Senses and the Intellect* (1855) and *The Emotions and the Will* (1859). He praised Bain’s introduction of physiological considerations at the beginning of his treatise, because nervous physiology was “the science most nearly allied, both in subject and method, with psychological investigations” and because, since Hartley, Brown, and James Mill, “the science [had] (...) assumed almost a new aspect, from the important discoveries which had been made in all its branches, and especially in the functions of the nervous system” (J. S. Mill, “Bain’s Psychology”, in J. S. Mill, *Essays on Philosophy and the Classics*. Edited, with a textual introduction, by J.M. Robson. Introduction by F.E. Sparshott. Toronto & London: University of Toronto Press and Routledge & Kegan Paul, 1978, p. 352). But whereas Mill readily acknowledged the light shed on the mechanism of sensation and action by the sensory-motor distinction of the functions of the posterior and anterior roots spinal nerves, he thought physiology merely warranted the postulation of a very general claim about the

---

dependence between higher mental phenomena and the brain: “The instrumentality of the brain in thought is a more mysterious subject; the evidence is less direct, and its interpretation has given rise to some of the keenest controversies of our era, controversies yet far from being conclusively decided. But the general connexion is attested by many indisputable pathological facts (...); and is confirmed by the entire range of comparative anatomy, which shows the intellectual faculties of the various species of animals bearing, if not an exact ratio, yet a very unequivocal relation, to the development in proportional size, and complexity of structure, of the cerebral hemispheres” (*Ibid.*, p. 353).

<sup>14</sup> See VIB.

<sup>15</sup> The emergence of physical anthropology can be traced back to the creation of the *Société d'anthropologie de Paris* in 1859 and the *Anthropological Society of London* in 1863. On Mill's acquaintance with the work of members of the latter, see G. Varouxakis, *Mill on Nationality*, pp. 47-49. Varouxakis argues convincingly that “for all his exhortations for the scientific study of differences among societies Mill does not seem to have followed closely developments in the new disciplines of ethnology and anthropology” (*Ibid.*, p. 48). However, as I show in this section, it is likely that Mill made the effort to review some of that literature in connection with the “women's question”. Yet, in his survey of recent findings adduced in support of sexual inequality, Mill made “abstraction of the great unsettled controversy respecting the appropriation of different parts of the brain to different mental faculties” (J. S. Mill, *The Subjection of Women*, p. 311). In that instance, Mill's glossing over this aspect of the problem was legitimate since Broca's discovery of the seat of the faculty for articulate language in the third convolution of the left frontal lobe of the brain (1861), which represented the latest advance in the localization of mental dispositions, made no direct reference to sexual differences. The correlation of distinct sexual characters with cerebral-hemisphere dominance came latter: see A. Harrington, *Medicine, Mind, and the Double Brain*.

<sup>16</sup> See Appendix V.

<sup>17</sup> Besides C. Russett's *Sexual Science* (especially pp. 31-9), one may consult E. Fee, “Nineteenth-Century Craniology: The Study of the Female Skull”, *Bulletin of the History of Medicine* 1979, 53:3, pp. 415-33, and S.J. Gould, *The Mismeasure of Man*. Second Edition. London: Penguin Books, 1986 (especially pp. 135-41).

<sup>18</sup> K. Vogt, *Lectures on Man: his Place in Creation and in the History of the Earth*. Ed. by J. Hunt. London: Longman, Green, Longman, and Roberts for the Anthropological Society, 1864. Vogt (1817-1895), a German naturalist and geologist, and professor at Geneva, was well connected with other European physical anthropologists such as Paul Broca and James Hunt. On Hunt and Mill, see *supra* n. 20.

<sup>19</sup> Whilst writing his *Examination of Sir William Hamilton's Philosophy*, Mill asked Bain for suggestions to enrich the book: “Do you know the psycho-physiological writings of Vogt & Moleschott, said to be the heads of the new materialist school in Germany?” (Mill to Bain, November 22, 1863; in J. S. Mill, *The Later Letters*, p. 902). The editors of the correspondence indicate Vogt's *Lectures on Man* as a possible reference.

<sup>20</sup> W.B. Carpenter, *Principles of Human Physiology: with their Chief Applications to Psychology, Pathology, Therapeutics, Hygiene & Forensic Medicine*. Fifth Edition. London: J. Churchill, 1855. On Carpenter, see Appendix II and V.

<sup>21</sup> A footnote referred to the German pathologist Rudolf Virchow 's *Untersuchungen über die Entwicklung des Schadelgrundes* (Berlin: Reimer, 1857) as Mill's source.

<sup>22</sup> As historians have shown, the whole mensurational business physical anthropologists gave into was highly questionable. With respect to measuring the brain, people were faced with tricky methodological problems. First of all, brains to measure were hard to come by in the first place, so that the actual samples on which measurements were performed were rather small. Secondly, the influence of the various causes of death on brain-size often was not taken into account, which biased the data. Furthermore, brain weight was generally inferred from the volume of the skull. But, there again, the problem was that anthropologists used all sorts of substances (seeds, lead shot, water, etc.) and that the results varied considerably according to the substance resorted to. See C. Russett, *Sexual Science*, pp. 31-35.

<sup>23</sup> The consideration of brain weight relative to body weight was of no help to anthropologists, since certain animals (most notably the various species of little singing birds) had a much more favourable brain weight/body weight ratio than man. See E. Fee, “Nineteenth-Century Craniology”, pp. 421-2.

<sup>24</sup> This idea could be found in Bain's *The Senses and the Intellect* (London: J.W. Parker and Son, 1855): “It cannot be maintained that size is the only circumstance that determines the amount of mental force; quality is as important as quantity, whether in nerve, muscle, or any other portion of the

---

animal structure. But just as largeness of muscle gives greater strength of body as a general rule, so largeness of brain gives greater vigour of mental impulse" (*Ibid.*, p. 11). W. B. Carpenter also evoked the issue (W.B. Carpenter, *Principles of Human Physiology*, p. 542).

<sup>25</sup> See *supra* pp. 198-9.

<sup>26</sup> As already observed in the correspondence with Comte, Mill was eager to prove his acquaintance with recent biological findings. This might perhaps explain his attempt to provide a biological explanation of his own for some of the psychological differences existing between men and women.

<sup>27</sup> Mill reiterated his point in the book's third chapter: "the psychological laws of the formation of character have been so little studied, even in a general way, and in the particular case never scientifically applied at all" (J. S. Mill, *The Subjection of Women*, p. 312).

<sup>28</sup> See VID.

<sup>29</sup> See VIB.

<sup>30</sup> See G.W. Smith, "J. S. Mill on What We Don't Know about Women", *Utilitas* 2000, 12:1, pp. 41-61.

<sup>31</sup> D. Stove, "The Subjection of John Stuart Mill", *Philosophy* 1993, 68, pp. 5-13.

<sup>32</sup> See B. Brecher, "Why patronize Feminists? A Reply to Stove on Mill", *Philosophy* 1993, 68, pp. 397-400; I. Thiel, "On Stove on Mill on Women", *Philosophy* 1994, 69, pp. 100-1; F. G. Downing, "A Cynical Response to the Subjection of Women", *Philosophy* 1994, 69, pp. 229-30; and D.G. Brown, "Stove's Reading of Mill", *Utilitas* 1998, 10:1, pp. 122-6.

<sup>33</sup> See IVC and Appendix VI.

<sup>34</sup> The argument is developed in the first chapter of Mill's *Subjection of Women*, pp. 272-5.

<sup>35</sup> See VE.

<sup>36</sup> This is of course the "one very simple principle" Mill advocated regarding the relations between the individual and society in *On Liberty*, which had been published ten years (1859) before the *Subjection of Women*: "the sole end for which mankind are warranted, individually or collectively, in interfering with the liberty of action of any of their number, is self-protection. (...) The only part of the conduct of any one, for which he is amenable to society, is that which concerns others. In the part which merely concerns himself, his independence is, of right, absolute. Over himself, over his own body and mind, the individual is sovereign" (J. S. Mill, *On Liberty*, in J. S. Mill, *Essays on Politics and Society*. Edited, with a Textual Introduction, by J.M. Robson. Introduction by A. Brady. Toronto & London: University of Toronto Press and Routledge & Kegan Paul, 1977, p. 223-4).

<sup>37</sup> See V.

<sup>38</sup> See *supra* p. 193.

<sup>39</sup> See *supra* n. 11.

<sup>40</sup> Ring maintains that in Chapter III of the *Subjection of Women*, "Mill falls back upon an unexamined use of feminine "nature", in spite of his earlier denial of the validity of such a concept" (J. Ring, "Mill's The Subjection of Women: The Methodological Limits of Liberal Feminism", p. 39)

<sup>41</sup> M.L. Shanley, "The Subjection of Women", in J. Skorupski (ed.), *The Cambridge Companion to John Stuart Mill*, pp. 396-422.

<sup>42</sup> See VIB.

<sup>43</sup> J. S. Mill, "Nature", in J. S. Mill, *Essays on Ethics, Religion and Society*, pp. 373-402.

<sup>44</sup> J. S. Mill, "Bentham", in J. S. Mill, *Essays on Ethics, Religion and Society*, pp. 131-41.

<sup>45</sup> N. Urbinati, "John Stuart Mill on Androgyny and Ideal Marriage", *Political Theory* 1991, 19, pp. 626-648.

<sup>46</sup> In particular, one can refer to J. S. Mill, "Periodical Literature: Edinburgh Review" (1824), in J. S. Mill, *Autobiography*, pp. 291-325 (esp. pp. 311-2); J. S. Mill, "Modern French Historical Works" (1826), in J. S. Mill, *Essays on French History and French Historians*, pp. 15-52 (especially pp. 45-48); and J. S. Mill, "On Marriage" (1832-1833), in J. S. Mill, *Essays on Equality, Law, and Education*, pp. 35-49; J. S. Mill, "Ware's Letters from Palmyra", in J. S. Mill, *Autobiography*, pp. 431-61 (especially p. 460). For a minute analysis of most of these documents, see N. Urbinati, "John Stuart Mill on Androgyny and Ideal Marriage", pp. 626-35.

<sup>47</sup> A few years later, an excessively violent controversy about the treatment of Black populations and the issue of slavery opposed Mill and Carlyle, the latter defending oppression on an essentialist and racialist ground, whereas the former advocated equality of treatment. The objects were different, but the logic of the arguments resorted to was similar.

<sup>48</sup> As the *Autobiography* illustrates, Mill held that Harriet Taylor embodied the perfect mix of feminine and masculine traits.

<sup>49</sup> For the concept of androgyny, see N. Urbinati, "John Stuart Mill on Androgyny and Ideal Marriage", pp. 632-5. As O. H. Pappe recalls, the genealogy of the concept is an intricate one and

---

the idea “may have come to Mill from Plato’s *Symposium*. The Hermaphrodite and the Androgynie represented a traditional concept of Greek mythology” (O. H. Pappe, *John Stuart Mill and the Harriet Taylor Myth*. Victoria: Melbourne University Press, 1960 p. 26, n. 69). Mill could also have found it in Saint Simonian writings, especially those of Enfantin: see R. K. P. Pankhurst, *The Saint Simonians, Mill and Carlyle. A Preface to Modern Thought*. London: Sidgwick & Jackson, 1957 p. 107.

## Conclusion :

As I hope to have shown in my thesis, the sexual equality issue provides an interesting vantage point from which to investigate the various epistemological, methodological, political, social, and moral disagreements existing between Comte and Mill, as well as it allows a more accurate grasp of the evolution of Mill's arguments in support of the emancipation of women. In order to single out more precisely what I take my research to have added to the existing scholarship on Comte, Mill, and the question of sexual equality, I hold it is convenient to consider, as the subtitle of my thesis suggests, its contribution under three different heads, namely historical, methodological, and philosophical. Once this is done, it will also be easier to distinguish what remains to be done and along which lines future work is to be undertaken.

### 1 – Historical Contributions:

As far as history is concerned, I think that the choice of the sexual equality issue has proved particularly appropriate to grasp the precise way the activity of philosophising was practiced, say, between the French Revolution and the last quarter of the nineteenth-century in France and in England. Whereas today the division of intellectual labour has taken over the philosophical field (one may often hear nowadays that 'a good philosopher is a specialized philosopher'), figures like Comte and Mill took philosophy to be a systematic and encyclopaedic endeavor in which theory and practice, knowledge and action could not be separated.

As I have tried to show, both Comte and Mill thought that the solution of the problem of sexual equality lay in the correct articulation of a sound knowledge of human nature and its capacities with practicable and beneficial social reforms, what I have labelled the "Scientificisation" of Politics. Hence the need to consider jointly both aspects and the manner in which their connection obtained: just as Comte's paternalistic proposals cannot be severed from his methodology and philosophy of science, Mill's liberal feminism as it is exposed in the *Subjection of Women* is not just a political doctrine, for it is premised on robust assumptions about the knowledge one can secure regarding human nature and is also the result of a long and complicated intellectual history which starts even before the publication of the *System of Logic*.

This attempt at a systematic reconstruction of Comte's and Mill's positions seems to me to provide for a better historical understanding to the extent that it offers the

advantage of remaining faithful to the philosophical inspiration of the Comtian and Millian intellectual endeavour. In particular, it protects one from the temptation of breaking into bits as so many unrelated and independent units the various elements (be they methodological, political, moral, social) which constitute the different dimensions of the problem under scrutiny, as is usually the case when one comes to studying the various aspects of Comte's and Mill's thought. In my eyes, even if it may seem paradoxical at first glance, a problem-centred approach, which deliberately focuses on a specific issue, might well be the best way to grasp the exact nature and extent of the achievements of thinkers of Comte's and Mill's stamp. Eventually, it has to be noted that, in this particular instance, the endorsement of a 'history of ideas' perspective for the analysis of the debate between Comte and Mill on sexual equality and the cognate question of divorce could not eschew the taking into account of the biographical dimension, for it was indeed the case – as I have insisted in Chapter I – that both figures (Comte with Caroline Massin and Mill with Harriet Taylor) had experienced first-hand the hardships associated with existing legal arrangements concerning marriage and their moral and social consequences. Accordingly, since Comte's and Mill's private situations certainly impacted on their reflections and undoubtedly constituted an important reason why they were both so interested in the problem of sexual equality and that of divorce, an appraisal of their views on these topics could not save itself the foray into intimate details. Here, the consideration of the aspects of one's life was part of the story, that is of history. Of course, to argue for the necessity of taking into account the biographical dimension does not amount to saying that Comte's and Mill's respective solutions to the problem were dictated only, or even primarily, by their personal experience or longings. Rather, one may suggest that it has the heuristic benefit of reminding us of the variety of motives that need to be considered in order to grasp fully, from a historical perspective, their thoughts on the topic.

Furthermore, it is not only the case that a proper historical understanding of Comte's and Mill's respective views on sexual equality necessitates a synoptic view of their works, but it is also the case that the choice of studying their private correspondence whilst constantly keeping in mind the importance they both attached to that very issue enables one to advance a particularly suggestive and stimulating interpretative hypothesis to account for their epistolary exchange. Whereas most commentators have generally contented themselves with a cursory review of the various subjects broached throughout the correspondence as if none of them was more important than the others, the focus on sexual equality provides one with a key to a good many puzzling questions. First of all,

and in the absence of any other textual evidence bearing on this point, I am convinced that Mill's concern that the "positive" methodology of science could legitimate the subjection of women was one of his motives, if not the primary motive, for exchanging with Comte, as I have tried to demonstrate in Chapter I. This might in turn explain Mill's reservations about Comtean social statics and some elements of social dynamics, as argued in Chapter V, and the puzzling appearance of phrenology in the correspondence documented in Chapter II and III. To be sure, as I have underlined in the course of my analysis, most of these points were not explicitly addressed within the context of the debate on sexual equality and this gives the reader the misleading impression, reinforced by the stylistic and rhetorical constraints imposed on both Comte and Mill by the very medium they used, that the correspondence resembles more an unarticulated series of rambling remarks than a intelligible line of argument made out of the proposals, objections, and replies issued by our two thinkers. However, and this certainly constitutes the most favourable indication of its relevance as an interpretative vantage point, as soon as the sexual equality issue is introduced to structure bits of correspondence which at first seem unrelated – such as the discussion about phrenology or Mill's qualified appraisal of Comtian sociology –, one discovers the rationale behind the exchange: just as Mill questioned the soundness of Comte's sociological conclusions because it appeared to him that, in at least one instance, they were neither warranted by the facts nor deduced as the logic of the moral sciences required, Mill similarly raised the problem of the empirical value of phrenology because of its importance in the Comtian justification of women's subjection. In other words, the main merit of choosing sexual equality as the interpretative perspective for the Comte-Mill correspondence is that it affords a considerable gain in intelligibility.

Eventually, and this will be the last point of historical relevance I will make, I would like to emphasize the manner in which a proper appraisal of the phrenological debate – which is in itself dependent on the choice of the sexual equality perspective – can benefit the understanding of Comte's and Mill's thoughts and writings. Firstly, the study of this aspect of the Comte-Mill correspondence enables one to shed a precious light on a much neglected subject in the secondary literature, that is the nature and extent of Mill's acquaintance with the life sciences, and more particularly with brain science. So far, most commentators have agreed with the already quoted comment by Susan Faye Cannon according to which Mill "knew little about science". I think this comment needs qualification and that is what I have tried to contribute (especially in Chapter III and VII)

by showing that, when the topic he was broaching required it – as was the case with the sexual equality issue –, Mill was able to master a considerable amount of scientific data and to deal with up-to-date scientific theories. In this regard, what is particularly striking is that Mill tried to keep abreast of biological developments throughout the years, as early as the first editions of the *System of Logic* (in the 1840s) and as late as the *Subjection of Women* (in the 1860s). Of course, Mill was certainly not what we would call today a “philosopher of biology” nor was he on a par with, say, Whewell in terms of biological knowledge. But nor was he a complete layman about these questions, even if his biological interests were merely derivative on his concerns for the sexual equality issue. As for Comte, I have tried to show (in Chapter III) that his endorsement of phrenology was not a mere *ad hoc manœuvre* used to back up his social views – even if it is obvious that a certain interpretation of phrenology served his political goals, especially with regard to sexual equality –, but that his acceptance of phrenological principles also derived from the methodological principles of his positive philosophy. Finally, I think it is important to insist on the phrenological component of the Comte-Mill correspondence since, to the best of my knowledge, no commentator so far has precisely identified the actual point of contention existing between the two thinkers about phrenology. As I have documented, what was at stake was not the scientific status of the phrenological hypothesis, for both Comte and Mill were at one when it came to recognizing that it was a perfectly legitimate scientific conjecture, but rather its empirical confirmation. According to Mill, the actual results borrowed by Comte from phrenology were either false or unwarranted and hence unreliable as evidence for the settlement of the sexual equality debate. As far as I know, no study of the Comte-Mill correspondence has insisted on this distinction, which I take to be essential to a proper understanding of the methodological and philosophical aspects of Comte’s and Mill’s views on sexual equality. Let us now turn to the former.

## **2 – Methodological Contributions:**

As for methodology, I take it that my research has clarified at least three intricate problems associated with the kind of scientific knowledge Comte and Mill considered essential to tackle the sexual equality issue. The first problem relates to the logic of the explanation of “moral phenomena”. The second problem has to do with the role of psychology within the explanatory framework characteristic of the “moral sciences”. The third problem touches on the centrality of Mill’s Ethology for the understanding of

“moral phenomena” and the reasons why Mill failed to bring about his pet project of a science of the formation of character.

Since the debate about sexual equality hinged on the intellectual and moral capacities of women, it was necessary to reach some sort of agreement as to how one was to explain “moral phenomena”. Now, and that is a point generally ignored by commentators that I have developed in Chapter IV, Comte and Mill agreed that these phenomena were the result of a “composition of causes”, namely physiological, psychological and environmental causes. However, when it came to fleshing out actual explanations, it became clear that both were biased in favour of some definite set of causes, biological for Comte, environmental and psychological for Mill, as their controversy about the Method of Residues exemplified. Accordingly, it is important to distinguish, something commentators generally fail to do, between Comte’s and Mill’s general agreement about the Architectonics of the Moral Sciences and their respective and contrary manners of cashing it out in the case of sexual equality: for whereas Comte insisted on the biological factors that he thought were responsible for women’s intellectual and volitional inferiority, Mill put a premium on social factors to explain their subjection. Only a minute reconstruction of the logic of the explanation of “moral phenomena” enables one to identify precisely when and why Comte and Mill parted way.

The second methodological clarification that I have tried to convey in Chapter IV is the one bearing on the exact content of Comte’s and Mill’s disagreement about psychology. The received view is that the gist of the controversy had to do with the scientific status of the psychological method, namely introspection. However, a closer inspection of all the textual evidence available reveals that this interpretation is flawed and that it is one of the advantages of the study of the sexual equality debate that it dissipates this illusion. In fact, I argue that Mill never cared about Comte’s critique of introspection, just as any empiricist in her good sense should not worry about sceptical and radical doubts raised about the reliability of our senses. What really worried Mill, on the other hand, were the consequences of Comte’s repudiation of psychology for the explanation of “moral phenomena”, for without psychology no explanations of “moral phenomena” were possible.

The last noteworthy methodological contribution of my thesis – given in Chapter VI – lies in the correct assessment of Mill’s ethological pet project and the actual reasons for its failure. It consists of a twofold endeavour: on the one hand, I have tried to defuse the charge of confusion generally levelled against the *System of Logic*’s chapter on Ethology;

on the other hand, I have attempted a critical review of the various causes invoked to account for Mill's ethological fiasco and I have come up with an original explanation so far not mentioned by commentators.

Contrary to what is generally maintained, Mill's developments on ethology in the *System of Logic* are far from clashing with the rest of the book because of an alleged lack of clarity. To be sure, Mill's account is indeed fraught with methodological difficulties, but, as I have demonstrated, the argument of the *System's* chapter on ethology is, in fact, quite clear, once it is connected to Mill's rhetoric, his style and his goals as a social and political reformer. Eager to make sure that his contribution would not be overlooked by his readers, Mill used various expository ploys – most notably the “dramatization” of methodological predicaments – to ensure the general recognition of the important part he had taken in the development of the study of human phenomena. Hence Mill's strategic emphasis on the serious difficulties associated with the pursuit of ethology, on the erroneous views and methodological dead-ends associated with unsatisfactory accounts of character formation: all this was intended to secure Mill's place in the intellectual Pantheon.

As for the ethological fiasco, one may single out three likely causes for it. Firstly, the sheer number of “circumstances” relevant to ethology and the absence of a conceptual classification to sort out the different kinds of circumstances involved in the formation of character traits prevented the working out of a manageable theory from which to deduce explanations for character formation. Secondly, in the absence of precise ethological empirical generalisations, ethological deductions could not be verified. Thirdly, and that is the original point I have brought in, Mill was unable to come up with a composition law that would govern the combination of ethological causes. But if so, what became of Mill's defense of the emancipation of women, since it was deprived of the scientific rationale that would prove the intellectual and volitional equality of both sexes? This last methodological consideration leads us to the philosophical clarifications my thesis intends to convey.

### **3 – Philosophical Contributions:**

The philosophical ambition of my thesis is twofold, critical with respect to Comte and constructive with respect to Mill. On the one hand, the focus on the sexual equality issue brings out the crucial role played by biology in Comte's social thought and investigates to what extent this distinctive feature can be reconciled with Comte's plea for an autonomous sociology. On the other hand, it accounts for the evolution of Mill's

argument for the emancipation of women from the *System of Logic* to the *Subjection of Women* and defends Mill's mature feminist views against various charges of inconsistency.

As documented in Chapter I, Comte's *Cours de philosophie positive* theorizes both the status of the science of social phenomena as a specific discipline and the relative independence of the different sciences. This has led many commentators to consider Comte as one of sociology's forefathers and as an early advocate of the "disunity of science" thesis. However, and that is another advantage of choosing this interpretative perspective, it turns out that Comte's treatment of the sexual equality issue seems to challenge both descriptions. For it was indeed the case, as shown in Chapter II and III, that Comte gave precedence to biology over sociology in the settlement of the sexual equality debate. A minute analysis of textual evidence reveals that what Comte chose to argue from to adjudicate the issue of women's role in society was not an account of the nature and history of inter-individual interactions (as would be required of sociology by Comte's own admission) but a biological account of character traits. And, as demonstrated in Chapter V, even in what Comte took to be his properly sociological argument for subjection, his ideas were suffused with biological assumptions. Neither the "static" argument, which relied on phrenology to establish that women's innate mental capacities did not allow them to be treated as men's equals, nor the "dynamic" argument, which was based on a biologically-inspired developmental scheme that legitimated the continuation of the subjection of women by referring to the history of the relations between the sexes, could qualify as sociological arguments. From this consideration of Comte's treatment of the sexual equality issue a critical philosophical conclusion ensues: because he did not live up to the standards of his own methodology and was unable to find independent and genuine sociological support for his belief in the necessary subordination of women, Comte had failed to reach the status of a true "positive" social philosopher he had yearned for. Accordingly, Comte's depiction as one of sociology's forefathers and as an early advocate of the "disunity of science" thesis needs serious revision.

As for Mill, the philosophical contribution of my thesis is of a more constructive character. For, given the centrality of ethology in Mill's case for women's emancipation and the role he ascribed to it in his architectonic of the "moral sciences", one might have feared that the failure of ethology would have left Mill deprived of argument to support his feminism. Yet, as I demonstrate in Chapter VII, Mill was in fact able to overcome this predicament and came up with convincing arguments that took stock (and put to good use) the ethological failure. In particular, the *Subjection of Women*, which presented Mill's mature

feminist views, developed a new way of addressing the problem, which supposed that the liberal component of Mill's philosophy, and especially its emphasis on the necessity of letting individuals engage in "experiments in living", constituted the proper experimental setting in which to adjudicate the sexual equality issue. To grasp the exact nature of the changes that took place in Mill's way of arguing between the *System of Logic* and the *Subjection of Women*, it is convenient to distinguish three related but logically independent theses one might attribute to Mill. Firstly, there is the "positive thesis for sexual equality", which claims that both sexes are on par in terms of intellectual endowments. Secondly, there is the "negative thesis for sexual equality", which maintains that none of the grounds so far adduced justify the subjection of women. Thirdly, there is the "emancipation thesis", which maintains that the removal of all social, legal and political barriers imposed on women is the crucial test for assessing the capacities of women. As the analysis of the *System of Logic* and the correspondence with Comte has shown (Chapter IV), the "positive thesis for sexual equality" could not stand without the development of ethology and failed with the demise of the latter. This explains that in the *Subjection of Women* Mill defended only the "negative thesis for sexual equality" and the "emancipation thesis", even if he certainly hoped that the "emancipation thesis" would provide the experimental setting in which to establish the truth of the "positive thesis for sexual equality". For, since we have no independent reliable knowledge on which to ground our analysis (for neither the stillborn ethology nor faulty or incomplete biological considerations would do in that instance), the only way to decide what women can or cannot do is to let them try and see what happens. By way of conclusion, it is worth noting that this argument for the emancipation of women combines in a non-contradictory manner the two tenets of the philosophical position I have ascribed to Mill in Chapter I, namely "liberal naturalism": it is liberal to the extent that it insists on the importance of letting the individual choose which capacities she wants to develop; it is naturalistic to the extent that it grounds its conception of human nature in the observation of the variety of ways in which a human individual might develop herself.

I hope the perspective I have adopted in these pages has contributed to convince the reader that there are still some interesting lessons to be learnt from this episode in the history of ideas. Firstly, I am convinced that Comte's and Mill's emphasis on the necessity of relying on the best knowledge available to solve social or political problems is still relevant today. Sound policies are well informed policies. Secondly, the disagreement

between Comte and Mill about the respective influence of biological and environmental factors remains with us today, although phrenology has been replaced with the theory of evolution and its psychological and sociological offspring. Accordingly, there is a pressing need to come up with a convincing account of the articulation of the biological and sociological levels that would take into account all the factors involved in the production of human phenomena. Perhaps one could draw on Comte's and Mill's attempts to develop a satisfactory solution to that problem.

Finally, this thesis has paved the way for future work on Comte and Mill. With regard to Comte, I think it would be interesting to study more closely the fate of the biological arguments for women's subjection in his later works (most notably the *Système de politique positive*) and see whether they remained as important as they were in the *Cours* or whether Comte found new grounds on which to rest his case. As for Mill, as I have tried to show, it would certainly prove fruitful to investigate a bit more closely the way he conceived the role of environmental factors in the formation of character and to establish more precisely than has been the case here the kind of physiology Mill was ready to introduce in sociological explanations.

## Appendix I: Comtean Studies (1993-2005).

A revival of Comtean studies has recently taken place. The public has now regained access to most of Comte's writings and a wealth of commentaries bearing on almost all the aspects of his thought have been published in the past few years. This bibliography intends to provide an overview of this historiographic trend. It takes as its chronological starting point the publication of Mary Pickering's *Auguste Comte. An Intellectual Biography* (1993), a book that has played a crucial role in the renewed interest in Comte's life and philosophy.

### Primary Literature:

Comte, A. (1993) *Calendrier positiviste ou système de commémoration publique*. Presentation by P. Tacussel. Fontfroide: Editions Fata Morgana.

Comte, A. (1994) *Rede über den Geist des Positivismus*. Edited by I. Fettscher. Hamburg: F. Meiner Verlag.

Comte, A. (1995) *Discours sur l'esprit positif*. New edition with a chronology, an introduction, and notes by A. Petit. Paris: Vrin, 1995.

Comte, A. (1995a) *Leçons sur la sociologie. Cours de philosophie positive, leçons 47 à 51*. Introduction and notes by J. Grange. Paris: Garnier-Flammarion.

Comte, A. & Mill, J.S. (1995b) *The Correspondence of John Stuart Mill and Auguste Comte*. Translated from the French and edited by O.A. Haac, with an introduction by A. Kremer-Marietti. New Brunswick & London: Transaction Publishers.

Comte, A. (1996a) *Philosophie des sciences*. Presentation, selection of extracts, and notes by J. Grange. Paris: Gallimard.

Comte, A. (1996b) *Politique d'Auguste Comte*. Texts selected and presented by J. Grange. Paris: Payot.

Comte, A. (1998a) *Auguste Comte and Positivism: The Essential Writings*. Edited by G. Lenzer. New Brunswick & London: Transaction Publishers. [reprint of the 1975 Harper Collins edition of the Lenzer selection]

Comte, A. (1998b) *Cours de philosophie positive. I : leçons 1 à 45*. Presentation and notes by M. Serres, F. Dagognet, and A. Sinaceur; new edition revised and amended by A. Petit. Paris: Hermann.

Comte, A. (1998c) *Discours sur l'ensemble du positivisme*. Presentation, notes, and chronology by A. Petit. Paris: Garnier-Flammarion.

Comte, A. (1998d) *Early Political Writings*. Edited and translated by H.S. Jones. Cambridge: Cambridge University Press.

Comte, A. (1999a) *Auguste Comte*. Edited by R. Sharp. London: Paragon Press Publishing.

Comte, A. (1999b) *Dizionario delle idée. Scienzia, politica, morale*. Edited by S. Mariani. Roma: Editori Riuniti.

Comte, A. (2000) *Synthèse subjective, ou système universel des conceptions propres à l'état normal de l'humanité*. Ed. by J. Grange. Paris: Fayard.

Comte, A. (2001a) *Discorso sullo spirito positivo*. Edited by A. Negri. Roma: Laterza.

Comte, A. (2001b) *System of Positive Polity*. 4 volumes, translated by J.H. Bridges, F. Harrison, E.S. Beesly, R. Congreve, and H.D. Hutton. Bristol: Thoemmes Press. [reprint of the 1875-7 edition]

Comte, A. (2001c) *The Positive Philosophy of Auguste Comte*. 2 volumes, abridged and translated by H. Martineau. Bristol: Thoemmes Press. [reprint of the 1853 edition]

Comte, A. (2001d) *Plan des travaux scientifiques nécessaires pour réorganiser la société*. Presentation and notes by A. Kremer-Marietti. Paris: L'Harmattan.

Comte, A. (2003a) *Appeal to Conservatives*. Translated by T.C. Donkin. Kila, MT: Kessinger Publishing. [reprint of the 1889 edition]

Comte, A. (2003b) *Science et politique. Les conclusions générales du Cours de philosophie positive*. Presentation and notes by M. Bourdeau. Paris: Pocket.

Comte, A. (2003c) *The Positive Philosophy of Auguste Comte*. 2 volumes, abridged and translated by H. Martineau. Kila, MT: Kessinger Publishing. [reprint of the 1853 edition]

### Secondary Literature:

Andréani, R. (2003) 'Le Montpellier d'Auguste Comte.' In A. Petit (ed.), 2003a, pp. 13-22.

Alonso, A. (1996), 'De Positivismo a Positivistas: interpretações do positivismo brasileiro.' *Revista Brasileira de Informação Bibliográfica em Ciências Sociais*, 42, pp. 109-134.

Avelino de La Pienda, J. (2003) 'Mito del gran tiempo en A. Comte (1798-1857).' *Thémata*, 30, pp. 119 – 134.

Bagchi, J. (2002) 'Le positivisme dans l'imagination scientifique du Bengale.' In M. Bourdeau & F. Chazel (eds.), 2002, pp. 239-253.

Balan, S. (1997) 'Alexandru Bogza sur le modèle de l'évolution chez Auguste Comte' *Revista de Filosofie*, 44:3, pp. 223-234.

Battini, M. (2001) 'Il dottor Comte e monsieur Bonaparte. Intorno all'opera di Mirella Larizza.' In C. Cassina (ed.), 2001, pp. 115-126.

Baumgarten, C.A. (1997) 'Le positivisme et les origines de la critique naturaliste dans le Rio Grande do Sul.' *Imprévue*, 1 & 2, pp. 113-131.

Becquemont, D. (2003a) 'Auguste Comte et l'Angleterre.' In A. Petit (ed.), 2003a, pp. 317-331.

Becquemont, D. (2003b) 'Positivisme et utilitarisme: regards croisés, Comte, Spencer, Huxley' *Revue d'histoire des sciences humaines*, 8, pp. 57-72.

Ben Cherni-Saïd, Z. (ed.) (2000) *Auguste Comte et le positivisme*. Carthage: Académie Tunisienne des Sciences, des Lettres et des arts "Beït Al-Hikma": Orbis.

Ben Cherni-Saïd, Z. (2003) 'L'inaccessible dans les sciences de la vie et le "degré de liberté en philosophie.' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 91-110.

Bensaude-Vincent, B. (1999a) 'Atomism and Positivism: A Legend about French Chemistry' *Annals of Science*, 56, pp. 81-94.

Bensaude-Vincent, B. (1999b) 'Le positivisme fait-il obstacle au progrès scientifique ? Le cas de l'atomisme au XIX<sup>e</sup> siècle.' In A. Despy-Meyer A. & D. Devriese (eds.), 1999, pp. 217-243.

Bensaude-Vincent, B. (2003) 'Comte et la diffusion des sciences.' In A. Petit (ed.), 2003a, pp. 127-134.

Benson, T. (1994) 'Auguste Comte and Positivist Sociology.' In P. Halfpenny & P. McMylor (eds.), *Positivist Sociology and its Critics*, vol. 1. Brookfield, Vermont : Edward Elgar Publishing Company, pp. 18-45.

Berthelot, J.-M. (2002) 'Durkheim, lecteur de Comte?.' In M. Bourdeau & F. Chazel (eds.), 2002, pp. 185-206.

Billoux, C. (2002) 'Une "relique"? Le fonds "Auguste Comte" dans les archives de l'Ecole Polytechnique.' *Bulletin de la Société des amis de la bibliothèque de l'Ecole polytechnique*, 30, pp. 65-68.

Blanckaert, C. (2003) 'Un artefact historiographique? L'anthropologie "positiviste" en France dans la seconde moitié du XIX<sup>e</sup> siècle.' In A. Petit (ed.), 2003a, pp. 253-283.

Bonaiuti, G. (2001) 'Sistema della società e identità di popolo. Il piano dell' "epistemocrazia" comtiana.' In C. Cassina (ed.), 2001, pp. 137-149.

Boudon, R. (1997) 'Peut-on être positiviste aujourd'hui?.' In C.H. Cuin (ed.), *Durkheim d'un siècle à l'autre*. Paris: Presses Universitaires de France, pp. 265-287.

Bourdeau, M. (1998) 'Et si Comte avait raison?.' *Dialogue*, XXXVII, pp. 361-373.

Bourdeau, M. (2000) 'L'esprit ministre du cœur.' *Revue de Théologie et de philosophie*, 132, pp. 175-192.

Bourdeau, M. (2002a) 'Science de l'homme, ou science de l'humanité?' In M. Bourdeau & F. Chazel (eds.), 2002, pp. 279-297.

Bourdeau, M. (2002b) '“Auguste Comte aujourd’hui”: Colloque de Cerisy'. *Bulletin de la Société des amis de la bibliothèque de l'Ecole polytechnique*, 30, pp. 1-5.

Bourdeau, M. (2002c) 'La réception du positivisme il y a un siècle: pour un état des lieux.' *Bulletin de la SABIX*, 30, p. 12-19.

Bourdeau, M. (2003a) 'Introduction.' *Revue d'histoire des sciences humaines*, 8, pp. 3-8.

Bourdeau, M. (2003b) 'Auguste Comte et la religion positiviste: présentation.' *Revue des sciences philosophiques et théologiques*, 87, pp. 5-21.

Bourdeau, M. (2003c) 'Présentation' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 13-22.

Bourdeau, M. (2004) 'L'idée de point de vue sociologique. La philosophie des sciences comme sociologie des sciences chez Auguste Comte.' *Cahiers internationaux de sociologie*, 117, pp. 225 – 238.

Bourdeau, M. & Chazel, F. (eds.) (2002) *Auguste Comte et l'idée de science de l'homme*. Paris: L'Harmattan.

Bourdeau, M. , Braunstein J.-F. & Petit A. (eds.) (2003) *Auguste Comte Aujourd'hui*. Paris: Kimé.

Braunstein, J.-F. (1995) 'Auguste Comte, de l'Europe à l'Occident.' In F. Chenet-Faugeras (ed.), *Victor Hugo et l'Europe de la pensée*. Paris: Nizet, pp. 193-206.

Braunstein, J.-F. (1997) 'Le concept de milieu de Lamarck à Comte et aux positivismes.' In L. Gouvent (ed.), *Jean-Baptiste Lamarck 1744-1829*, Paris: Ed. du CHTS, pp. 557-571.

Braunstein, J.-F. (1998a) 'Antipsychologisme et philosophie cérébrale chez Auguste Comte' *Revue internationale de philosophie*, 52:1, pp. 7-28.

Braunstein, J.-F. (1998b) 'Canguilhem, Comte et le positivisme.' In F. Bing, J.-F. Braunstein, and E. Roudinesco (eds.), *Actualités de Georges Canguilhem. Le normal et le pathologique. Actes du X<sup>e</sup> Colloque de la Société internationale d'histoire de la psychiatrie et de la psychanalyse*. Le Plessis-Robinson: Institut Synthélabo – Les empêcheurs de penser en rond, pp. 95-120.

Braunstein, J.-F. (2002) 'La philosophie des sciences d'Auguste Comte.' In P. Wagner (ed.), *Les philosophes et la science*. Paris: Gallimard, pp. 787-822.

Braunstein, J.-F. (2003a) 'La religion des morts-vivants. Le culte des morts chez Auguste Comte.' *Revue des sciences philosophiques et théologiques*, 87, pp. 59-73.

Braunstein, J.-F. (2003b) 'Auguste Comte et la philosophie de la médecine.' In A. Petit (ed.), 2003a, pp. 159-176.

Braunstein, J.-F. (2003c) 'Comte "in context": l'exemple de la sociologie' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 291-314.

Brenner, A. (2003) 'Comte, entre les classiques et les conventionnalistes.' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 49-63.

Brown, R. (1997) 'Artificial Experiments on Society: Comte, G. C. Lewis and Mill' *Journal of Historical Sociology*, 10:1, pp. 74-97.

Cachera, M. (1998) 'La fonction de la sociologie historique des savoirs dans le positivisme comtien.' In Kremer-Marietti A. (ed.), *Sociologie de la science: sociologie des sciences et rationalité scientifique*. Bruxelles: Editions Mardaga, pp. 57-68.

Campos Rodriguez, P. & Macias Gloria, P. (1997) 'Guanajuato (Mexico) y el nacimiento del positivismo.' *Imprévue*, 1 & 2, pp. 163-173.

Capuro, R. (2001). *Le positivisme est un culte des morts: Auguste Comte*. Tr. by R. Capuro and C. Le Gaufey, Paris: Epel : translation of *Auguste Comte – Actualidad de una herencia*. Buenos Aires: Edelp, 1999.

Carneiro, F.L. (2003) 'Observations sur quelques propositions scientifiques d'Auguste Comte.' In A. Petit (ed.), 2003a, pp. 135-146.

Casalini, B. (2001) 'L'interpretazione della "sociocrazia" nel pensiero di Lester Frank Ward.' In C. Cassina (ed.), 2001, pp. 151-165.

Cassina, C. (ed.) (2001a) *Sociologia, politica e religione: la filosofia di Comte per il diciannovesimo secolo. Atti del convegno de Pisa, 12 maggio 2000*. Pisa: Edizioni Plus – Università di Pisa.

Cassina, C. (2001b) 'Comte e il tradizionalismo: appunti per una discussione acora aperta.' In C. Cassina (ed.), 2001, pp. 89-99.

Cassina, C. (2003) 'Comte devant la dictature.' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 184-199.

Celebi, N. (2002) 'Sociology Associations in Turkey : Continuity behind Discontinuity.' *International Sociology*, 17:2, pp. 253-267.

Chabert, G. (2002) 'Michel Houellebecq : lecteur d'Auguste Comte.' *Revue romane*, 37:2, pp. 187-204.

Chabert, G. (2004) *Un nouveau pouvoir spirituel. Auguste Comte et la religion scientifique au XIX<sup>e</sup> siècle*. Caen: Presses Universitaires de Caen.

Chazel, F. (2002) 'Introduction.' In M. Bourdeau & F. Chazel (eds.), 2002, pp. 7-17.

Chickering, R. (1995) 'Der Leipziger Positivismus.' *Comparativ*, 5:3, p. 20-31.

Chickering, R. (1997) 'Der Leipziger "Positivisten-Kräntchen" um die Jahrhundertwende.' In G. Hübinger, R. Von Bruch, F.W. Graf (eds.), 1997, pp. 227-245.

Clauzade, L. (2002) 'Le statut épistémologique du tableau cérébral et la notion de type chez Auguste Comte.' In M. Bourdeau & F. Chazel (eds.), 2002, pp. 111-130.

Clauzade, L. (2003a) 'Auguste Comte et Stuart Mill. Les enjeux de la psychologie', *Revue d'histoire des sciences humaines*, 8, pp. 41-56.

Clauzade, L. (2003b) 'La "culte" et la "culture" chez Auguste Comte: la destination morale de la religion positiviste.' *Revue des sciences philosophiques et théologiques*, 87, pp. 39-58.

Collina, V. (2001) 'Auguste Comte e il sapere ottocentesco.' In C. Cassina (ed.), 2001, pp. 13-20.

Cometti, J.-P. (2003) 'L'esthétique positiviste: un *Dictionnaire des idées reçues?*' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 245-269.

Coumet, E. (2003) 'Auguste Comte. Le calcul des chances, aberration radicale de l'esprit mathématiques.' *Mathématiques et sciences humaines*, 162, pp. 9-17.

Da Costa Leal, E. & Pezat, P.R. (1997) 'La propagande de la religion de l'humanité dans le sud du Brésil.' *Imprévue*, 1 & 2, pp. 145-161.

Dagognet, F. (1997) 'Auguste Comte.' In M. Ambrière (ed.), *Dictionnaire du XIXe siècle européen*. Paris: Presses Universitaires de France, pp. 272-273.

Dagognet, F. (1997) 'Positivisme.' In M. Ambrière (ed.), *Dictionnaire du XIXe siècle européen*. Paris: Presses Universitaires de France, pp. 937-938.

De Boni, C. (2001) 'La Republica positiva da Comte a Littré.' In C. Cassina (ed.), 2001, pp. 101-113.

Despy-Meyer, A. & Devriese, D. (eds.) (1999) *Positivismes. Philosophie, Sociologie, Histoire, Sciences. Actes du colloque international, 10-12 décembre 1997, Université Libre de Bruxelles*. Turnhout: Brepols.

Devulder, C. (1999) 'Comment l'historien construit son objet d'étude. L'exemple de Karl Lamprecht (Fin XIX<sup>e</sup> –début XX<sup>e</sup> siècle).' In A. Despy-Meyer A. & D. Devriese (eds.), 1999, pp. 189-194.

Dezeuze, G. (2005) 'Il positivismo di Auguste Comte e il diritto.' *Rivista internazionale di filosofia del diritto*, 82:1, pp. 85-108.

Dhombres, J. (2002) 'La pratique philosophique des mathématiques chez Auguste Comte: Une conceptualisation de l'espace par l'analytique.' In M. Bourdeau & F. Chazel (eds.), 2002, pp. 21-80.

Dhombres, J. (2003) 'La postérité mathématiques de Comte.' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 25-48.

Donzelli, M. (1999) *Origini e declino del positivismo: saggio su Auguste Comte in Italia*. Napoli: Liguori Editore.

Donzelli, M. (2001) 'Positivismo italiano e positivismo d'oltralpe.' In C. Cassina (ed.), 2001, pp. 127-136.

Donzelli, M. (2003a) 'Comte, l'Italie et la France entre le XIX<sup>e</sup> et le XX<sup>e</sup> siècles.' In A. Petit (ed.), 2003a, pp. 351-362.

Donzelli, M. (2003b) 'Auguste Comte et le génie esthétique italien.' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 270-290.

Engel, P. (1999) 'Le positivisme et la psychologie.' In A. Despy-Meyer A. & D. Devriese (eds.), 1999, pp. 121-134.

Fédi, L. (2002) 'Renouvier critique de Comte.' In M. Bourdeau & F. Chazel (eds.), 2002, pp. 153-183.

Fédi, L. (2000a) *Comte*. Paris: Les Belles Lettres.

Fédi, L. (2000b), 'Auguste Comte et la technique' *Revue d'histoire des sciences*, 53:2, pp. 265-293.

Fédi L. (2003a), 'Auguste Comte, la disjonction de l'idéologie et de l'Etat.' *Cahiers philosophiques*, 94, pp. 99-110.

Fédi, L. (2003b) 'Lien sociale et religion positiviste chez les penseurs de la troisième république.', *Revue des sciences philosophiques et théologiques*, 87, pp. 127-150.

Fédi, L. (2003c) 'L'organicisme de Comte.' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 111-134.

Fédi, L. (2005), 'Le prince des philosophes: Aristote vu par Auguste Comte et Pierre Laffitte' In D. Thouard (ed.), *Aristote au XIX<sup>e</sup> siècle*. Lille: Presses du Septentrion, pp. 209-230.

Fuchs, E. (1994a) 'Wissenschaft, Positivismus und Geschichtsschreibung in England Mitte des 19. Jahrhunderts.' *Zeitschrift für Geschichtswissenschaft*, 42, p. 197-216.

Fuchs, E. (1994b) *Henry Thomas Buckle: Geschichtsschreibung und Positivismus in England und Deutschland*. Leipzig: Leipziger Universitat Verlag.

Fuchs, E. (1999) 'Positivism and History in the 19<sup>th</sup> century.' In A. Despy-Meyer A. & D. Devriese (eds.), 1999, pp. 147-162.

Fuchs-Heinritz, W. (1998) *Auguste Comte: Einführung in Leben und Werk*. Opladen: Wesdeutscher Verlag.

Fuller, S. (1999) 'What does the Sokal hoax say about the prospects for positivism?' In A. Despy-Meyer A. & D. Devriese (eds.), 1999, pp. 265-283.

Gane, M. (1997) 'Durkheim contre Comte dans les *Règles*.' In C.H. Cuin (ed.), *Durkheim d'un siècle à l'autre*. Paris: Presses Universitaires de France, pp. 31-38.

Gane, M. (2001) 'Reading Gender Futures, from Comte to Baudrillard' *Social Epistemology*, 15:2, pp. 77-89.

Gane, M. (2003) 'Dans le gouffre. Entre science et religion. Les premiers sociologues français, de Bazard à Littré.' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 151-169.

Garcia-Parpet, M.-F. (2002) 'Les usages de la pensée française dans le Brésil du XIX<sup>e</sup> siècle: la question raciale, Auguste Comte et Arthur de Gobineau.' In M. Bourdeau & F. Chazel (eds.), 2002, pp. 221-237.

Gentil, B. (2002a) 'Les notes de cours d'Auguste Comte, élève à l'Ecole polytechnique (1814:1816).' *Bulletin de la Société des amis de la bibliothèque de l'Ecole polytechnique*, 30, pp. 51-56.

Gentil, B. (2002b) 'La postérité mathématiques d'Auguste Comte: A propos de l'intervention de Jean Dhombres au colloque de Cerisy.' *Bulletin de la Société des amis de la bibliothèque de l'Ecole polytechnique*, 30, pp. 7-10.

Gentil, B. (2002c) 'La Maison d'Auguste Comte témoin de l'histoire du positivisme.' *Bulletin de la Société des amis de la bibliothèque de l'Ecole polytechnique*, 30, pp. 21-38.

Gentil, B. (2002d) 'Paulo E. de Berredo Carneiro (1901-1982), fondateur de l'Association internationale de la "Maison d'Auguste Comte".' *Bulletin de la Société des amis de la bibliothèque de l'Ecole polytechnique*, 30, pp. 39-42.

Gérard, A. (2001) 'La Révolution française d'Auguste Comte.' In C. Cassina (ed.), 2001, pp. 65-87.

Gérard, A. (2003) 'Les disciples "complets" de Comte et la politique positive (1870-1914).' In A. Petit (ed.), 2003a, pp. 285-302.

Giusti, A. (2002) 'La maison d'Auguste Comte aujourd'hui.' *Bulletin de la Société des amis de la bibliothèque de l'Ecole polytechnique*, 30, pp. 43-50.

Graf, F.W. (1997) 'Die Positivität des Geistigen. Rudolf Eucken's Programme neoidealistischer Universalintegration.' In G. Hübinger, R. Von Bruch, F.W. Graf (eds.), 1997, pp. 53-85.

Grange, J. (1996) *La philosophie d'Auguste Comte. Science, politique, religion*. Paris: Presses Universitaires de France.

Grange, J. (1997) 'L'utopie positive', *Raison présente*, 1, pp. 69-93.

Grange, J. (1998) 'Du corps politique à l'organisme social.' *Revue internationale de philosophie*, 52:1, pp. 95-110.

Grange, J. (1999) 'Archaïsme et actualité du positivisme.' In A. Despy-Meyer A. & D. Devriese (eds.), 1999, pp. 35-51.

Grange, J. (2000) *Auguste Comte. La politique et la science*. Paris: Editions Odile Jacob.

Grange, J. (2002a) *Le vocabulaire de Comte*. Paris: Ellipses.

Grange, J. (2002b) 'Lire Auguste Comte aujourd'hui, "Entre Science et société"' *Bulletin de la Société des amis de la bibliothèque de l'Ecole polytechnique*, 30, pp. 11-20.

Grondeux, J. (2003) 'Taine et Comte face à l'histoire.' In A. Petit (ed.), 2003a, pp. 177-188.

Guillo, D. (2000) 'L'empreinte de l'histoire naturelle sur la sociologie comtienne' *L'année sociologique*, 50:1, pp. 195-216.

Guillo, D. (2003) *Les figures de l'organisation. Sciences de la vie et sciences sociales au XIX<sup>e</sup> siècle*. Paris: Presses Universitaires de France.

Haac, O.A. (1998) 'Auguste Comte et l'Orient.' *Revue internationale de philosophie*, 52:1, pp. 111-126.

Haac, O.A. (2003) 'Auguste Comte: le philosophe "systematise".' In A. Petit (ed.), 2003a, pp. 117-125.

Harp, G.J. (1995) *Positivist Republic. Auguste Comte and the Reconstruction of American Liberalism 1865-1920*. University Park, PA: The Pennsylvania State University Press.

Harré, (R.) (2003) 'Positivist Thought in the Nineteenth Century.' In T. Baldwin (ed.), *The Cambridge History of Philosophy 1870-1945*. Cambridge: Cambridge University Press, pp. 11-26.

Heilbron, J. (1993-1994) 'Gelijkenissen en schijnverbanden: Meer misverstanden over Auguste Comte.' *Kennis en Methode*, 17:4, pp. 369-377.

Heilbron, J. (1995) *The Rise of Social Theory*. London: Polity Press.

Heilbron, J. (1993) 'Ce que Durkheim doit à Comte.' In P. Besnard, M. Borlandi, and P. Vogt (eds.), *Division du travail et lien social*. Paris: Presses Universitaires de France, pp. 59-67.

Hesse, D.-M. (1996) *George Eliot and Auguste Comte: the Influence of Comtean Philosophy on the Novels of George Eliot*. Frankfurt am Main, New York, Paris: P. Lang.

Houellebecq, M. (2003), 'Préliminaires au positivisme.' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 7-12.

Jiménez Abad, A. (2001) *El concepto de hombre en la doctrina de la educación de Augusto Comte*. Madrid: Fundación universitaria española.

Jolibert, B. (2004) *Auguste Comte. L'éducation positive*. Paris: L'Harmattan.

Keller, F. (1998) 'Soziologie und Utopie: "Auguste Comte" als Chiffre einer Unmöglichkeit' *Jahrbuch für Soziologiegeschichte*, pp. 165-180.

Kerlan, A. (1998) *La science n'éduquera pas: Comte, Durkheim, le modèle introuvable*. Bern: P. Lang.

Köhnke, C.F. (1997) 'Neukantianismus zwischen Positivismus und Idealismus.' In G. Hübinger, R. Von Bruch, F.W. Graf (eds.), 1997, pp. 41-52.

Kremer-Marietti, A. (1998a) 'Présentation', *Revue internationale de philosophie*, 52:1, pp. 3-5..

Kremer-Marietti, A. (1998b) 'Auguste Comte et l'éthique de l'avenir.' *Revue internationale de philosophie*, 52:1, pp. 151-177.

Kremer-Marietti, A. (2001) 'L'homme biologique selon Comte et les théories nouvelles.' In C. Cassina (ed.), 2001, pp. 21-39.

Kremer-Marietti, A. (2002a) 'Auguste Comte et la méthode subjective.' In M. Bourdeau & F. Chazel (eds.), 2002, pp. 257-277.

Kremer-Marietti, (2002b) 'Auguste Comte et l'Islam.' *Bulletin de la Société des amis de la bibliothèque de l'Ecole polytechnique*, 30, pp. 63-64.

Kremer-Marietti, A. (2003a) 'Le biologique et le social chez Comte.' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 64-90.

Kremer-Marietti, A. (2003b) 'De l'unité de la science à la science unifiée : De Comte à Neurath.' In A. Petit (ed.), 2003a, pp. 189-203.

Kubbinga, H. (1993) 'Auguste Comte en het molecularisme.' *Kennis en Methode*, 17:4, pp. 343-368.

Kury, L. (2003) 'Nation, races et fétichisme: la religion de l'humanité au Brésil.' *Revue d'histoire des sciences humaines*, 8, pp. 125-137.

Lalouette, J. (2003) 'Pour une approche des rapports entre Libre Pensée et Positivisme.' In A. Petit (ed.), 2003a, pp. 303-315.

Lalouette, J. (2004) 'Auguste Comte et le catholicisme.' *Quaderni di acme*, 66, pp. 33 – 61.

Lanaro, G. (2002) 'La "seconda carriera" di Auguste Comte.' *Rivista di storia filosofia*, 57:2, pp. 243-251.

Lantz, P. (2003) 'Dépolitisation et sciences sociales.' *Journal des anthropologies*, 92-93, pp. 83-97.

Lapointe, R. (1994) 'Le pouvoir spirituel de la sociologie religieuse.' *Religiologiques*, 9, pp. 43-53.

Larizza-Lolli, M. (1993a) 'Auguste Comte e gli ambienti scientifici francesi (1814-1848).' *Rivista di filosofia*, 84:1, pp. 21-48.

Larizza Lolli, M. (1993b) 'Le premier rayonnement en France des idées d'Auguste Comte (1824-1848): les milieux, les institutions, les homes.' *1848. Bulletin de la société d'histoire de la révolution de 1848 et des révolutions du XIX<sup>e</sup> siècle*, pp. 69-101.

Larizza-Lolli, M. (1999). *Bandiera verde contro bandiera rossa: Auguste Comte e gli inizi della Société positiviste (1848-1952)*. Bologna: il Mulino.

Larizza-Lolli, M. (2003) 'La république, la science et les passions.' In A. Petit (ed.), 2003a, pp. 221-227.

Larizza-Lolli, M. (2004) 'Auguste Comte: La repubblica, la scienza e le passioni.' *Quaderni di acme*, 66, pp. 181 – 190.

Lazinier, E. (2002) 'Auguste Comte. La place de la psychologie.' In M. Doraï (ed.), *Psychologie sociale: Repères historiques et principaux concepts*. Paris: In Press Editions, pp. 195-210.

Le Bras-Chopard, A. (2003) 'L'idéal féminin d'Auguste Comte. Convergences et dissonances avec ses contemporains socialistes.' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 170-183.

Lettere, T. (2003) 'Entre compétence et liberté d'opinion: le pouvoir spirituel comtien comme modèle de sociologie intellectuelle.' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 200-222.

Loué, T. (2003) 'L'apologétique de Ferdinand Brunetière et le positivisme: un bricolage idéologique "généreux et accueillant".' *Revue des sciences philosophiques et théologiques*, 87, pp. 101-126.

Macherey, P. (1993) 'De l'univers infini au monde clos : le système d'A. Comte et ses limites.' *Annali della scuola normale superiore di Pisa*, III: XXII/1, pp. 199-226.

Macherey, P. (1996) 'Auguste Comte.' M. Canto-Sperber (ed.), *Dictionnaire d'éthique et de philosophie morale*. Paris: Presses Universitaires de France, pp. 279-283.

Macherey, P. (1997) 'Auguste Comte.' In M. Canto-Sperber (ed.), *Dictionnaire d'éthique et de philosophie morale*. 2<sup>nd</sup> edition . Paris: Presses Universitaires de France, pp. 279-283.

Macherey, P. (1999), 'Y a-t-il une métaphysique du positivisme comtien ?' In A. Despymeyer A. & D. Devriese (eds.), 1999, pp. 53-62.

Macherey, P. (2004) 'Comte dans la querelle des anciens et des modernes : la critique de la perfectibilité.' In B. Binoche (ed.), *L'homme perfectible*. Seyssel: Champ Vallon, pp. 274-292.

Magistrale, G. (1994). *Neutralizzazione, spoliticizzazione, iperpoliticizzazione: metodo scientifico e teoria politica in Comte e Marx*. Fasano: Schena.

Martin, J. L. (1998) 'Authoritative Knowledge and Heteronomy in Classical Sociological Theory' *Sociological Theory*, 16:2, pp. 99-130.

McClellan, C. (2001) 'The Legacy of Georges Cuvier in Auguste Comte's Natural Philosophy.' *Studies in History and Philosophy of Science*, 32:1, pp. 1-29.

Mesure, S. (1999) 'La politique positiviste. D'Auguste Comte à la tradition républicaine.' In Alain Renaut (ed.), *Histoire de la philosophie politique*. Tome IV: les critiques de la modernité politique. Paris: Calmann Lévy, pp. 277-235.

Mesure, S. (2002) 'La critique diltheyenne du positivisme comtien.' In M. Bourdeau & F. Chazel (eds.), 2002, pp. 209-220.

Miss, J.-N. (2004) 'Le soi ou l'illusion d'une conscience unifiée.' *Théologiques*, 12:1-2, pp. 165 – 180.

Morra, G. (1998) *La sociologia si chiama Clotilde: Comte e la religione dell'umanità*. Milano: Spirali.

Mostert, M. (1999) 'Marc Bloch et le positivisme.' In A. Despy-Meyer A. & D. Devriese (eds.), 1999, pp. 195-209.

Muglioni, J. (1995) *Auguste Comte, un philosophe pour notre temps*. Paris: Kimé.

Negri, A. (2003) 'Travail et technique dans la pensée d'Auguste Comte.' In A. Petit (ed.), 2003a, pp. 147-157.

Pereira da Silva, C. (1995) 'Otto de Alencar Silva versus Auguste Comte.' *Llull*, 18:34, pp. 167-181.

Pesavento, S. J. (1997) 'Le positivisme dans le sud du Brésil. La république des gauchos.' *Imprévue*, 1 & 2, pp. 133-143.

Petit, A. (1994a) 'Genèse de la classification des sciences d'Auguste Comte' *Revue de synthèse*, 115:1-2, p. 71-102.

Petit, A. (1994b) 'Quelle place pour la psychologie dans le positivisme?' *Revue de synthèse*, 3-4, pp. 393-415.

Petit, A. (1995a) 'De Comte à Durkheim: un héritage ambivalent.' In Borlandi M. & Muchielli L. (eds.), *La sociologie et sa méthode. Les règles de Durkheim un siècle après*. Paris: L'Harmattan, pp. 49-70.

Petit, A. (1995b) 'La création de la chaire d' « Histoire générale des sciences » au Collège de France en 1892 : un héritage du positivisme – P. Lafitte et G. Wyrouboff.' *Revue française d'histoire des sciences*, XLVIII:4, pp. 521-556.

Petit, A. (1995c) 'Les mouvements positivistes.' In I. Poutrin (ed.), *Le XIX<sup>e</sup> siècle: science, politique, tradition*. Paris: Berger-Levrault, pp. 473-491.

Petit, A. (1996a) 'Comte et les mathématiques.' In Barbin E. & Caveing M. (eds.), *Les philosophes et les mathématiques*. Paris: Ellipses, pp. 174-192.

Petit, A. (1996b) 'Auguste Comte et les positivismes.' In P. Raynaud & S. Rials (eds.), *Dictionnaire de philosophie politique*. Paris: Presses Universitaires de France, pp. 110-115.

Petit, A. (1997a) 'L'héritage de Lamarck dans la philosophie positive d'Auguste Comte.' In L. Goulvent (ed.), *Jean-Baptiste Lamarck 1744-1829*, Paris: Ed. du CHTS, pp. 543-556.

Petit, A. (1997b) ' "Pouvoir spirituel" et "Pouvoir temporel" dans le positivisme comtien.' *Imprévue*, 1 & 2, pp. 5-58.

Petit, A. (1998a) 'Auguste Comte et Clotilde de Vaux: les confidences de l' "année sans pareille".' In S. Bernard-Griffiths & C. Croisille (eds.), *Cahiers d'Etudes sur les Correspondances du XIX<sup>e</sup> siècle*, 8, acts of the conference *Difficultés d'être et mal du siècle dans les Correspondances et Journaux intimes romantiques de la première moitié du XIX<sup>e</sup> siècle*, pp. 303-327.

Petit, A. (1998b) 'Le corps scientifique selon Auguste Comte.' In Kremer-Marietti A. (ed.), *Sociologie de la science: sociologie des sciences et rationalité scientifique*. Bruxelles: Editions Mardaga, pp. 69-91.

Petit, A. (1998c) 'Positivisme et Catholicisme.' *Revue internationale de philosophie*, 52:1, pp. 127-155.

Petit, A. (1998d) 'Le bicentenaire de la naissance d'Auguste Comte.' *Bulletin de la Société des amis de la bibliothèque de l'Ecole polytechnique*, 19, pp. 99-102.

Petit, A. (2000) 'La fondation de la sociologie.' In Ben Cherni-Saïd Z. (ed.), 2000, pp. 87-115.

Petit, A. (2001) 'La sociocratie positiviste.' In C. Cassina (ed.), 2001, pp. 41-63.

Petit, A. (2002) 'Conflits et renouveau de la psychologie comtienne.' In M. Bourdeau & F. Chazel (eds.), 2002, pp. 85-110.

Petit, A. (ed.) (2003a) *Auguste Comte. Trajectoires du positivisme, 1798-1998*. Paris: L'Harmattan.

Petit, A. (2003b) 'Présentation.' In A. Petit (ed.), 2003a, pp. 7-10.

Petit, A. (2003c) 'Des sciences positives à la politique positiviste.' In A. Petit (ed.), 2003a, pp. 87-115.

Petit, A. (2003d) 'Le prétendu positivisme d'Ernest Renan.' *Revue d'histoire des sciences humaines*, 8, pp. 73-101.

Petit, A. (2003e) 'Les disciples de la religion positiviste' *Revue des sciences philosophiques et théologiques*, 87, pp. 75-100.

Picon, A. (2003) 'A propos du rôle social de la science. Auguste Comte et les saints-simoniens.' In A. Petit (ed.), 2003a, pp. 241-252.

Pickering M. (1993a) *Auguste Comte. An Intellectual Biography, Volume I*. Cambridge: Cambridge University Press.

Pickering, M. (1993b) 'Auguste Comte and the Saint-Simonians', *French Historical Studies*, 18, pp. 211-236.

Pickering, M. (1996) 'Angels and Demons in the Moral Vision of Auguste Comte.' *Journal of Women's History*, 8, pp. 10-40.

Pickering, M. (1997a) 'A New Look at Auguste Comte.' In C. Camic (ed.), *Reclaiming the Sociological Classics*. Oxford: Blackwell, pp. 11-44.

Pickering, M. (1997b) 'Rhetorical Strategies in the Works of Auguste Comte.' *Historical Reflections: Réflexions Historiques*, 23, p. 151-175.

Pickering, M. (1998) 'Auguste Comte and the Return to Primitivism.' *Revue internationale de philosophie*, 52:1, pp. 51-77.

Pickering, M. (1999) 'Auguste Comte e a esfera publica de Habermas.' In H. Trindade (ed.), *O Positivismo: Teoria e prática*. Porto Alegre: Editora da Universidade, pp. 59-69. Translated in French, 'Auguste Comte et la sphère publique de Jürgen Habermas.' In A. Petit (ed.), 2003a, pp. 229-237.

Pickering, M. (2003) 'L'art de la mémoire dans le système positiviste.' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 223-242.

Plé, B. (2000) 'Auguste Comte on Positivism and Happiness.' *Journal of Happiness Studies*, 1, pp. 423-445.

Plé, B. (2003) 'Sur le chemin du salut public: de la dispersion du savoir humain à la guérison intellectuelles de l'homme.' In A. Petit (ed.), 2003a, pp. 205-219.

Porteret, V. (2001) 'Société militaire et société industrielle chez Saint-Simon et Auguste Comte.' *Les Champs de Mars*, 10, pp. 9-29.

Pozzi, R. (2001) 'Sociologia, religione e politica in Comte: considerazioni introduttive.' In C. Cassina (ed.), 2001, pp. 5-12.

Pozzi, R. (2003) 'Comte devant son siècle.' In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), 2003, pp. 135-150.

Repplinger, R. (1997) *La grande crise finale: zu Auguste Comte Krisendiagnosen*. Tübingen: Sofort Druck A. Brenner.

Repplinger, R. (1999) *Auguste Comte und die Entstehung der Soziologie aus dem Geist der Krise*. Frankfurt am Main & New York: Corpus Verlag.

Robert, O. (2002), 'La tentation comtienne de John Stuart Mill: un "disciple" indiscipliné' *Revue d'histoire des sciences humaines*, 7, pp. 129-156.

Rutigliano, E. (2001) *Teorie sociologiche classiche: Comte, Marx, Durkheim*. Torino: B. Boringhieri.

Sacquin, M. (2003) 'Les manuscrits d'Auguste Comte à la Bibliothèque Nationale de France.' In A. Petit (ed.), 2003a, pp. 401-416.

Schandeler, J.-P. (2003) 'L'architecture du savoir: idéologie et positivisme.' In A. Petit (ed.), 2003a, pp. 43-51.

Scharff, R.C. (1995) *Comte After Positivism*. Cambridge: Cambridge University Press.

Scharff, R.C. (1998) 'Comte and Heidegger on the Historicity of Science.' *Revue internationale de philosophie*, 52:1, pp. 29-49.

Sebestik, J. (2003) 'Thomas Garrigue Masaryk ou le positivisme détourné' *Revue d'histoire des sciences humaines*, 8, pp. 103-123.

Sernin, A. (1993) *Auguste Comte, prophète du XIX<sup>e</sup> siècle: sa vie, son oeuvre et son actualité*. Paris: Albatros.

Simon, D. (2004) 'Auguste Comte e l'economia solidale.' *Sociologia*, 37:1, pp. 87 – 91.

Smith, R. (2002) 'Brentano et le positivisme.' *Archives de philosophie*, 65:2, pp. 291-309.

Soriano, M. (1997) 'Las fuerzas extrañas, positivisme et fantastique en Argentine.' *Imprevue*, 1 & 2, pp. 175-221.

Stengers, I. (1999) 'Le problème du positivisme aujourd'hui.' In A. Despy-Meyer A. & D. Devriese (eds.), 1999, pp. 13-34.

Trindade, H. (2003) 'La république positiviste chez Comte : théorie et pratique.' In A. Petit (ed.), 2003a, pp. 363-399.

Vaillant, A. (2003) 'Auguste Comte et l'esprit de système : le syndrome de Louis Lambert.' In A. Petit (ed.), 2003a, pp. 71-83.

Valade, B. (2002) 'La critique comtienne de l'école rétrograde.' In M. Bourdeau & F. Chazel (eds.), 2002, pp. 133-151.

Vatin, F. (2003) 'Comte et Cournot. Une mise en regard biographique et épistémologique.' *Revue d'histoire des sciences humaines*, 8, pp. 9-40.

Vidoni, F. (1997) 'Gli inizi del positivismo in Francia.' *Imprévue*, 1 & 2, pp. 59-89.

Wagner, G. (2001) *Auguste Comte zur Einführung*. Hamburg: Junius Verlag.

Wartelle, J.-C. (2001) *L'héritage d'Auguste Comte. Histoire de l' "Eglise" positiviste, 1849-1946*. Paris: L'Harmattan.

Weirich, P. (1998) 'Comte et Mill sur l'économie politique.' In *Revue internationale de philosophie*, 52:1, pp. 79-93.

Wernick, A. (2000) 'From Comte to Baudrillard: Socio-theology after the End of the Social.' *Theory, Culture & Society*, 17:6, pp. 55-75.

Wernick, A. (2001) *Auguste Comte and the Religion of Humanity: the Post-theistic Program of French Social Theory*. Cambridge: Cambridge University Press.

Wils, K. (1997) 'Gehuld in het schitterend kleed der nieuwste Parijsche mode. Auguste Comte in Nederland (1845-1880).' *Bijdragen en Mededelingen betreffende de Geschiedenis der Nederlanden*, 112, pp. 26-33.

Wils, K. (1999) 'Les insuffisances historiques du positivisme. Henry Thomas Buckle en Belgique et aux Pays-bas.' In A. Despy-Meyer A. & D. Devriese (eds.), 1999, pp. 163-188 : tr. of 'Het historisch tekort van het positivisme. Henry Thomas Buckle in Nederland en België.' In J. Tollebeek, G. Verbeeck, T. Verschaffel (eds.), *De lectuur van het verleden. Opstellen over de geschiedenis van de geschiedschrifving aangeboden aan Reginald de Schryver*. ??: Universitaire Pers Leuven, 1998, pp. 273-299.

Wils, K. (2003) 'Les sympathisants de Comte et la diffusion du positivisme aux Pays-Bas (1845-1880).' In A. Petit (ed.), 2003a, pp. 333-349.

Ziberman, R. (1997) 'Je t'aime, moi non plus: le positivisme et la littérature brésilienne.' *Imprévue*, 1 & 2, pp. 91-112.

Yamashita, M. (1995) 'La sociologie française entre Auguste Comte et Emile Durkheim: Emile Littré et ses collaborateurs.' *L'Année sociologique*, 45:1, p. 83-115.

## Appendix II: Comte and Mill on Biology.

The focus on the biological premises of the sexual equality debate raises an important historical issue. As we have seen, Comte suspected that Mill's reluctance to accept biological evidence was due to his inadequate scientific education. Accordingly, it is to the point to check whether Comte's charge held against Mill. What is ironic is that Comte's concern about Mill's alleged ignorance of biology was turned back against Comte himself by later critics. For instance, Thomas Huxley, who had been criticized by the English Positivist Richard Congreve for not having paid tribute to Comte's contribution to the development of science, retorted that, as far as he was concerned, he could not grant him any role in it<sup>1</sup>. Evoking his reading of the *Cours*, he recalled how superficial Comte's account appeared to him: "What struck me was his want of apprehension of the great features of science; his strange mistakes as to the merits of his scientific contemporaries; and his ludicrously erroneous notions about the part which some of the scientific doctrines current in his time were destined to play in the future" (T. H. Huxley, "The Scientific Aspects of Positivism" [1869], p. 149)<sup>2</sup>. He went on to point out what he considered Comte's various misunderstandings of scientific theories and practices, emphasizing his shortcomings vis-à-vis the life sciences, Huxley's own favourites: he underlined Comte's outright rejection of microscopic observation in anatomy, his endorsement of phrenology, his refusal of cell theory, and – of course the charge most dear to Huxley – his dismissal of all evolutionary hypotheses as "foolish" (*Ibid.*, p. 155)<sup>3</sup>. Less than a century later, F. A. Hayek castigated Comte for his *amateurism*, defined as the lack of proper scientific culture<sup>4</sup>.

Once the importance of the scientific background to the debate of sexual equality is taken into account, the appraisal of the extent of Comte's and Mill's biological knowledge becomes crucial for the understanding and assessment of their respective arguments. However, more than a tinge of relativism should colour our appraisal, for the question we have to address is not that of the conformity of Comte's and Mill's opinions with today's biological knowledge, but rather that of their conformity with the biological knowledge available to them: to use a Comtian expression, were Comte and Mill "thinkers truly on the same level as their century"<sup>5</sup> when they started discussing the biological aspect of the sexual equality issue?

As far as Comte's biological education is concerned, his acquaintance with the life sciences is well-documented. Originally trained as a mathematician at Polytechnique

(whose syllabus included the teaching of various engineering techniques requiring a good deal of highly abstract theoretical knowledge of physics and even chemistry), Comte seemed to have exhibited a lively interest for biological studies almost immediately after his expulsion from the school in 1816<sup>6</sup>. Whilst staying in Montpellier (before returning to Paris at the end of 1817), Comte is said to have attended various lectures at the then very famous Faculté de Médecine, one of the oldest in France and the stronghold of Barthezian Vitalism<sup>7</sup>. A few years later, when he started the set of lectures that constituted the basis for his *Cours de philosophie positive*, he decided to supplement his biological knowledge by attending, from 1829 to 1832, the course in general and comparative physiology given by his friend and mentor Henry Ducrotay de Blainville (1777-1850) at the Parisian Faculté des sciences, which Comte heralded “the most perfect type of the most advanced state of current biology” (A. Comte, *PP*, p. 665) and on which he drew extensively in his subsequent writings<sup>8</sup>. This knowledge eventually found its place in the several lessons Comte dedicated to biology in the *Cours de philosophie positive* (lessons Forty to Forty-five, published in 1838 with the lessons on chemistry in the third volume of the *Cours*), which amply testify to his knowledge of the recent developments in the field, and attracted some of its renowned practitioners (such as Robin<sup>9</sup>) and a few physicians (Broussais<sup>10</sup>, Littré<sup>11</sup>) towards positivism.

To be sure, Comte’s methodological and biological conceptions had been severely challenged by key members of the biological community (his most illustrious critic being the physiologist Claude Bernard), but the very fact that they had been thought worth criticizing is proof of their heuristic nature. As G. Canguilhem recalled,

“in fact, from 1848 to 1880 in France, there was no biologist or physician who, in order to situate her own research in the concourse or the clash of ideas, to define for herself the meaning and scope of her work, did not deal either directly with the themes of the Comtian philosophy of biology, or indirectly with themes deriving from it” (G. Canguilhem, “La philosophie biologique d’Auguste Comte”, p. 71)<sup>12</sup>.

Everything considered, whilst recognizing Comte’s status as an amateur in biology, one must nonetheless take into account that he was a particularly well-informed amateur.

Conversely, little is known about the extent of John Stuart Mill’s actual acquaintance with biological knowledge, as the absence of secondary literature on the subject illustrates. Alexander Bain once argued that “science was his *forte*” (A. Bain, *John Stuart Mill*, p. 142)<sup>13</sup>, meaning that the powers of analysis and abstraction with which he was endowed naturally predisposed him for the pursuit of logical and methodological enquiries, what Mill called in a letter to his friend John Sterling “the science of science

itself, the science of investigation – of method” (Mill to J. Sterling, October 20-22, 1831; in J. S. Mill, *Earlier Letters*, p. 79). As his *Autobiography* recounts, Mill had been exposed early on by his father James – besides other subjects such as ancient languages, literature, history, psychology, and political economy – to the subtleties of syllogistic logic, its clarifying virtues, and its usefulness at identifying fallacies. He mainly taught himself mathematics, just as he did for experimental science, which he learnt from books (the four volumes of Thomas Thomson’s *System of Chemistry*<sup>14</sup> were among his favourites) but seldom practiced. But no specific mention is made of biological studies in the *Autobiography*.

This very peculiar education came to a halt when Mill joined the family of Sir Samuel Bentham, Jeremy Bentham’s brother, for a one year-trip to France in 1820<sup>15</sup>. When the party reached Montpellier – Comte’s hometown – around mid-October, it was decided that the young John Stuart would register for the winter courses at the Faculté des Sciences, where he attended lessons on chemistry, zoology, and logic, and became friend with the chemist-to-be and discoverer of bromine Antoine-Jérôme Balard and Comte’s childhood friend Roméo Pouzin<sup>16</sup>. It was also during his boyhood visit to France that Mill discovered botany with George Bentham<sup>17</sup>. Accordingly, one may date his first encounter with some of the life sciences from the beginning of the twenties, without being able to specify exactly what a fifteen-year old boy could get out of such an exposition.

On his return to England, John Stuart Mill first resumed his solitary train of education under the supervision of his father whilst studying law under John Austin, and then engaged with a few other promising young men (such as George Grote, John Austin’s brother Charles, Eyton Tooke) in a discussion group which attempted to review through and through the main treatises available in the fields of political economy, logic, and psychology. Accordingly, since the *Autobiography* remained silent as to Mill’s later cultivation of scientific subjects, one has to rely for the assessment of his actual acquaintance with those on the meagre evidence offered by his early training: in this last regard, Bain’s overall estimate, if harsh, seems appropriate and undoubtedly applies to Mill’s biological studies:

“His readings in Physical Science were (...) untutored: unless at Montpellier, he never had any masters, and his knowledge was at no time mature” (A. Bain, *John Stuart Mill*, p. 25).

Fortunately, the lack of textual evidence for the period spreading from the early twenties to the beginning of the correspondence with Comte is not total. For, besides a quite anecdotic letter published in the *Morning Chronicle* (September 1, 1823) which defended the contested practice of human dissection<sup>18</sup>, Mill published (in the issue of November, 1834, of *The Monthly Repository*) a review of the physician Thomas King's *The Substance of a Lecture, Designed as an Introduction to the Study of Anatomy Considered as the Science of Organization*<sup>19</sup>. To be sure, King's tract was a rather short (only 32 pages) and quite elementary survey of what we could call biology, but the architecture of his presentation and the sources on which he drew are worth noticing. Firstly, King argued that any proper understanding of living beings (of their "organization") could only be attained by the search for the similarities and contrasts existing between themselves and between them and inorganic beings:

"What are Organized Beings?

The answer can be furnished only by comparison. We must seek it in a comparative enquiry" (T. King, *The Substance of a Lecture*, p. 8)

He then went on to analyse the differences between organic and inorganic bodies with respect to their ultimate chemical components, their combination, the structure they gave rise to, their external form, their growth and decay, etc. So doing, as Mill's review noticed, King relied almost exclusively on the works and classifications "which characterise the French anatomists and physiologists" (J. S. Mill, "Dr King's Lecture on the Study of Anatomy", 323)<sup>20</sup>. And among the French scientists King mentioned (Béclard, Bichat, Vauquelin, Chevreul), the one who received most praise and whose ideas (especially his zoological classification and his definition of life as a dual movement of absorption-exhalation) constituted the backbone of his presentation was Comte's biological mentor, Henry Ducrotay de Blainville, whom King said he "could not better than follow" (T. King, *The Substance of a Lecture*, p. 12) in his exposition<sup>21</sup>. From this short introduction to the Science of Organization, Mill might have retained that biology was at root a classificatory science resting on the comparative method, as Blainville's achievements testified. Four years later, his reading of Comte's Lessons of biology in the *Cours* certainly strengthened such a view.

Eventually, another manner of approaching the difficult question of the extent of Mill's knowledge of biology by the time his correspondence with Comte started amounts to considering the first edition of his *System of Logic* and locating therein evidence for it. But here again, the record of Mill's familiarity with the life sciences is

hard to establish. Firstly, because most of the examples chosen by Mill to illustrate his different views on the logic of science were drawn from the inorganic sciences of physics and chemistry, which Mill, just as the majority of his contemporaries, considered as more perfect embodiments of scientific method than the organic sciences. Secondly, because the few references made to the latter were seldom first hand<sup>22</sup>.

Bain<sup>23</sup>, who proofread the *Logic*, provided a telling testimony in that last respect:

“The main defect of the work (...) was in the Experimental Examples. I soon saw, and he felt as much as I did, that these were too few and not unfrequently incorrect. It was on this point that I was able to render the greatest service. Circumstances had made me tolerably familiar with the Experimental Physics, Chemistry and Physiology of that day, and I set to work to gather examples from all available sources” (A. Bain, *John Stuart Mill*, p. 66).

For instance, the reference to Liebig’s work in organic chemistry in the first edition<sup>24</sup> and the physiological examples taken from Brown-Séquard’s researches on cadaveric rigidity<sup>25</sup> and the nervous system<sup>26</sup>, which partly replaced them in the 1865 edition, were procured by Bain.

Another major source of Mill’s physiological examples was John Ayrton Paris’ *Pharmacologia* (first published in 1812)<sup>27</sup>. Paris, a lecturer in *materia medica* both at the medical school in Great Windmill Street, London, and at the Royal College of Physicians, presented in his book a vast number of proprietary medicines and analyzed their effects on the body. The historical aspect of Paris’ work, which usually underlined the various shortcomings of earlier chemists and druggists, enabled Mill to take stock of a few good instances of the different fallacies he exposed in Book V of the *System of Logic*<sup>28</sup>.

One may also note throughout Mill’s book cursory mentions of some naturalists whose names were evoked just in passing (Bichat<sup>29</sup>, Magendie<sup>30</sup>) or whose works were used to illustrate Mill’s views on non-biological subjects such as names, definitions, or predication (Linnaeus<sup>31</sup>, Cuvier<sup>32</sup>). However, Mill’s borrowings from other authors and his occasional remarks about biology or biologists offer little evidence of his biological culture besides the bland facts that he displayed a well-educated layman’s knowledge of the doctrines of the life sciences and a certain interest in the illustrations he could find in them for his own methodological views.

Yet, some chapters of the *System of Logic* seem to be more promising with regard to our present concern. For instance, in Book IV, Chap. IV (“The Principles of a Philosophical Language Further Considered”), Mill singled out botany as a perfect

instance of a precise and reliable language because it rested on an accurate descriptive sensationalist terminology. The two following chapters on classification (VII, "Of Classification, as Subsidiary to Induction"; VIII, "Of Classification by Series") drew on the previous one by taking up the example of botany for the formation of natural groups, but also referred to the different systems of zoological classification for the formation of natural arrangements.

As far as botany was concerned, these different passages indicated Mill's first-hand knowledge of the matter, even if his treatment of the classificatory issue was not intended as an exhaustive presentation of his philosophy of botany but rather as a refutation of Whewell's conceptions of the subject. As Henry Trimen pointed out after Mill's death,

"the views expressed so clearly in these chapters are chiefly founded on the actual needs experienced by the systematic botanist, and the argument is largely sustained by references to botanical systems and arrangements. Most botanists agree with Mr. Mill in his objections to Dr Whewell's views of a natural classification" (H. Trimen, "John Stuart Mill's Botanical Studies", p. 31).

As for zoology, it clearly appears that Mill's exposition depended heavily on Comte's own presentation of serial classification in the Forty-Second Lesson (General Considerations on Biotoxic Philosophy) of the *Cours*: the former's chapter on the "Classification by series" opened with the acknowledgement that this "important portion of the theory" of classification had "not yet as far as [he was] aware, been systematically treated of by any writer except M. Comte" (J. S. Mill, *SL*, IV, VIII, 1, p. 726). But the very details of his exposition also indicated the Comtian influence.

The echo was particularly obvious when Mill came to conceive serial classification as taking the form of a single linear ascending series (Sect. 2), organized with reference to a type-species (Sect. 3), and constituted of discrete groupings (Sect. 4). When compared with its positivist equivalent, the parallel is striking: for Comte, a serial classification amounts to

"conceiving all the cases studied as being radically analogous from the perspective adopted and to representing their actual differences as simple and determined modifications, within a fundamental abstract type, by all the characters proper to the corresponding organism or being" (A. Comte, *PP*, p. 702-3).

And just as Comte<sup>33</sup>, Mill considered the former's biological mentor zoological classification as the most satisfactory. For Blainville's classification of animals took man

as its type-species and ranked hierarchically the other animal forms according to the degree to which they approached the ‘sensibility’ (the ability of being stimulated and of responding to these stimulations) and the locomotive ability proper to mankind (its ‘animality’). Both properties were held to be dependent on the nervous system, but the difficulties associated with the identification of the latter in the animals situated at the bottom of the series prompted Blainville to choose a correlated trait (the envelop of the different animals) as the appropriate character for ranking.

Comte followed Blainville both for the choice of “the adult and normal man” as the fundamental zoological type (*Ibid.*, p. 703) and the election of what he called “external characters” for the establishment of the different groups forming the animal series (*Ibid.*, p. 783). And Mill imitated Comte:

“the preference, among zoological classifications, is probably due to that of M. de Blainville, founded on the differences in the external integuments; differences which correspond, much more accurately than might be supposed, to the really important varieties, both in the other parts of the structure, and in the habits and history of the animals” (J. S. Mill, *SL*, IV, VII, 2, p. 715)<sup>34</sup>.

Eventually, another possible source for Mill’s information on biology was the physician W. B. Carpenter<sup>35</sup>, whose *Principles of General and Comparative Physiology* (1839) and *Principles of Human Physiology* (1842) Mill invoked to support his claim that vital phenomena were good instances of the composition of causes (J. S. Mill, *SL*, III, VI, 2, p. 374). It is likely that Mill read Carpenter’s *General Physiology*, since he reviewed its second edition<sup>36</sup> in the *Westminster Review* (for the issue of January of 1842) and commended its “clear exposition of the highest generalities yet arrived at in the science of life” and its “breadth of speculation and reach of philosophy”, which Mill said had “not hitherto been often exemplified in this country” (J. S. Mill, “Carpenter’s Physiology”, p. 324)<sup>37</sup>. Carpenter’s treatise, which was primarily aimed at medical students but proved itself accessible to a lay audience, was indeed a very rich (almost six-hundred pages long, with numerous illustrative plates) and well-informed textbook (it included the latest developments in histology due to Schleiden and Schwann, and presented minutely recent works on embryology and reproduction). Moreover, his approach, which took into consideration the different forms of living beings, conformed well with the biological canon adopted by Comte and Mill, even if Carpenter did not refer explicitly to Blainville. Firstly, he repeatedly underlined the essentially comparative nature of biological studies:

“It is now generally acknowledged, that Physiology can only be properly studied by a constant reference to the comparative structure and functions of many different classes of Animals” (W. B. Carpenter, *Principles of General and Comparative Anatomy*, p. XIII).

“the study of Physiology can only be scientifically prosecuted (...) by embracing within its range the examination of the phenomena exhibited by all classes of living beings” (*Ibid.*, par. 5, p. 4)

His contribution to this endeavour, which Mill also highlighted in his review<sup>38</sup>, resided in the establishment of a continuum between vegetal and animal physiology. Secondly, Carpenter emphasised that the principles of classification, especially for the animal kingdom, should be based on easily observable external characters, even if he acknowledged the difficulty of establishing a definitive classification on those<sup>39</sup>:

“It is the object of the Naturalist (...) to discover what peculiarities of external conformation are constantly associated with differences in internal conformation, whether or not he can discern the objects of their connection; in order that he may not be obliged to examine the latter, in every case in which a classification, already formed, is brought into use” (*Ibid.*, par. 105, p. 80)

In that regard, he took the nervous system as the point of reference of any classification, for

“it is found that every one [the natural] groups may be characterised by the form and development of its nervous system; and as this has an obvious relation with all the functions, both animal and nutritive, it is probably the best single character which could be adopted” (*Ibid.*, par. 107, p. 83).

Accordingly, Carpenter started his zoological classification with the primitive *Radiata*, ascended through the *Mollusca* and the *Annulosa* to the *Vertebrates*, and naturally reached to the organism in which the nervous system was most developed, namely *Man*, thereby reiterating the example of “most of the recent works” in physiology in which “an outline of the development and actions of each system in the inferior tribes is prefixed to the details relating to its condition in man” (*Ibid.*, p. XIII)<sup>40</sup>. To be sure, Carpenter did include a good deal of the recent discoveries made by experimental physiologists (especially with regard to cell-theory and reproduction) that Comte did not take into account, but the main tenets of his methodology he shared with the author of the *Cours* and Mill: the comparative nature of biology; a single linear classification determined with reference to man; the emphasis on the nervous system as the appropriate ranking criterion.

To conclude this foray into Mill’s writings to assess the extent of his biological culture, one may argue that it reveals at least two contextual facts relevant to the discussion of the biological aspect of the sexual equality issue, and enables one both to

challenge the charge of “biological ignorance” raised against Comte, and to moderate Comte’s suspicions about Mill’s knowledge of the life sciences.

Firstly, whereas Comte was well-informed of biological doctrines, Mill’s knowledge of the life sciences was certainly not on a par with that of his French correspondent, botany excepted.

Secondly, although Mill did not seem to have engaged into any kind of detailed study concerning biology comparable to that Comte set about for himself, for most of his knowledge was second-hand, either gleaned from Bain or through his reading of Comte’s *Cours* and Carpenter’s treatises, he nevertheless cannot have failed to notice what A. Desmond has described as the “importation” of French comparative anatomy in England during the 1830s and 1840s<sup>41</sup>. Drawing on German Romantic and French Materialistic sources, this movement rapidly diffused (especially through the works of Carpenter) among the scientific audience, in which it rooted a certain style of biological thinking and a few methodological principles. As L. S. Jacyna has argued<sup>42</sup>, the comparative perspective in physiology depended on three main tenets: the belief in the existence of a structural plan common to all living beings; the postulation of a progressive continuity between the different forms of life; and the acknowledgment of a parallelism between the zoological and embryological series. Emphasizing the order and regularity present in the organic world, this approach therefore advocated the search for the laws governing biological phenomena and called for the application of the same rules of reasoning and evidence already in use in the inorganic sciences. Eventually, because it was held to be the interface between the physical and the mental, the study of the nervous system became an essential element of such an inquiry. Having witnessed these developments, Mill was certainly aware of and interested in the methodological and philosophical issues they raised. In any case, in the light of the varied textual evidence adduced above, the thesis about Mill’s alleged lack of scientific culture needs qualification: to be sure, compared, say, with Herschel or Whewell, or even with Comte, one may agree with S. F. Cannon that “Mill knew little” (S. F. Cannon, *Science in Culture*, p. 23)<sup>43</sup> about science and its history; however, it would be a gross exaggeration to claim that that he was totally ignorant of what was going on within the scientific world. Mill was certainly not a practitioner of the natural sciences; but he did know a good deal about them.

What is interesting in such a state of affairs is that it sheds a new light on the vexed question of Comte’s influence on Mill. According to Mill’s own testimony in the

*Autobiography*, his only debts to Comte's *Cours* had to do with the Inverse Deductive Method introduced in Book VI of the *System* (J. S. Mill, *Autobiography*, p. 219), and a few other elements to be found "in the chapter on Hypotheses and in the view taken of the logic of algebra" (*Ibid.*, p. 255). But, as the previous analysis of Book IV has revealed, Comte's stamp on Mill's conception of classification was real. Furthermore, the fact, pointed out by J. M. Robson<sup>44</sup>, that Mill's writing of this Book and his reading of Comte's Lessons on biology were coeval strengthens the case for Comte's influence over Mill. Consequently, one is entitled to think that the latter not only benefited from the former for his general philosophy of science and his philosophy of social science, but also for his understanding of biology and his philosophy of classification<sup>45</sup>.

Accordingly, as far as Comte is concerned and at the time he was corresponding with Mill, the Huxley/Hayek charge can be set aside. However, it seems also to be the case that after having written his Lessons on biology, Comte did not really keep abreast of the latest developments in this field. As Littré pointed out, "his readings were made during his youth; after that period, he neither read nor re-read" (E. Littré, *Auguste Comte et la philosophie positive*, p. 257). As for Mill, his relative lack of biological education may explain his eagerness to benefit from Comte's expertise in the field (especially by welcoming any reading advice), just as he benefited from his reading of the *Cours*. Surely, this contrast between Comte and Mill does not imply that the former was necessarily right and the latter necessarily wrong when it came to adjudicate the biological aspect of the sexual equality issue. But it certainly shed some light on Mill's cautiousness<sup>46</sup> with regard to the biological premises of the debate and on his outraged reply, when the relation was drawing to its close, to Comte's suspicion about the extent of his familiarity with biology:

"I do not believe that I studied biology any less than all the other basic sciences. I believe I know the field just about as well. I am well acquainted enough with the method and the general principles of all sciences, including biology. I may even keep more informed of the latest achievements in this science than in the others. As for my meditations, they are most often devoted to questions of biology" (Mill to Comte, March 26, 1846; in Haac [ed.], p. 365-6).

<sup>1</sup> T. H. Huxley, "On the Physical Basis of Life", in *Lay Sermons, Addresses, and Reviews*. Fourth edition. London: Macmillan & Co, 1872, pp. 120-46. It was in this article that Huxley devised a qualification of positivism that met with great success: "In so far as my study of what specially characterises the Positive Philosophy has led me, I find therein little or nothing of any scientific value, and a great deal which is as thoroughly antagonistic to the very essence of science as anything in ultramontane Catholicism. In fact, M. Comte's philosophy in practice might be compendiously described as Catholicism *minus* Christianity" (p. 140).

<sup>2</sup> T. H. Huxley, "The Scientific Aspects of Positivism", in *Lay Sermons*, pp. 147-73.

<sup>3</sup> On the other hand, Huxley praised Comte's advocacy of the importance of biology for sociological studies: "Nothing could be more interesting to a student of biology than to see the study of the biological sciences laid down as an essential part of the prolegomena of a new view of social phenomena" (*Ibid.*, p. 148).

<sup>4</sup> F. A. Hayek, *The Counter-Revolution of Science. Studies on the Abuse of Reason*. Second Edition. Indianapolis: The Liberty Fund, 1979.

<sup>5</sup> See A. Comte, *PP*, p. 852.

<sup>6</sup> On Comte's biological studies, see H. Gouhier, *La Jeunesse d'Auguste Comte et la formation du positivisme*. Vol. III: *Auguste Comte et Saint Simon*. Second edition. Paris: Vrin, 1970, pp. 236-8.

<sup>7</sup> On Montpellier's Faculté de Médecine, see E. A. Williams, *The Physical and the Moral. Anthropology, Physiology, and Philosophical Medicine in France, 1750-1850*. Cambridge: Cambridge University Press, 1994, Chap. I, II (pp. 73-6) and Chap. III (pp. 136-151). Pickering suggests that Comte might have followed the advice of his childhood friend Roméo Pouzin, who withdrew from Polytechnique to enter the course of medical education at Montpellier in 1816 (M. Pickering, *Auguste Comte*, p. 33, n. 111). However, Gouhier (cf n. 6 *supra*) doubts that Comte got much from his stay in Montpellier. It has to be noted that Mill, whilst in Montpellier, befriended Pouzin, to whom – Mill told Comte in one of his letter – he "stood closer than anyone else at Montpellier" (Mill to Comte, January 28, 1842; in Haac [ed.], p. 130), with the exception of the chemist-to-be Balar and the Bérard family. In a later letter, Comte forwarded Pouzin's greetings to Mill, with Pouzin's memory of his acquaintance with Mill: "Mr John Mill was very young at the time (...) but it was already easy to recognize his superior intelligence" (Comte to Mill, August 28, 1843; *Ibid.*, p. 182).

<sup>8</sup> Comte dedicated the *Cours* to Blainville and the mathematician Fourier. On Blainville, see W. Coleman, "Blainville, Henri Marie Ducrotay de", in C. C. Gillispie (ed.), *Dictionary of Scientific Biography*. New York: Scribner, 1981, vol. 1, pp. 187-8. On Comte and Blainville, see E. Littré, *Auguste Comte et la philosophie positive*. 2<sup>nd</sup> edition. Paris: Hachette, 1864, Chap. XI; P. Ducassé, *Méthode et Intuition chez Auguste Comte*. Paris: Alcan, 1939, pp. 127-38; H. Gouhier, "Blainville et Comte", *Revue d'histoire des sciences*, 1979, 32, 1, pp. 59-72; D. Guillo, *Les figures de l'organisation. Sciences de la vie et sciences sociales au XIX<sup>e</sup> siècle*. Paris: PUF, 2003, Third Part, chap. 3. Guillo argues that "Comtian positivism – and particularly its sociological part – is built in its entirety on a basis of notions borrowed from nineteenth-century comparative anatomy" (*Ibid.*, p. 338) and illustrates how Comte relied on biological analogies to expose such central conceptions of the *Cours* as the law of the three stages, the static/dynamic distinction in the study of intellectual functions, the classification of the sciences, or the view of the history of mankind as a development from a preformed germ. However, it has to be remembered that some of these conceptions – especially the law of the three stages and the classification of the sciences, which appeared in Comte's *Plan des travaux scientifiques nécessaires à la réorganisation de la société* (first published in 1822) – antedated Comte's encounter with, and reading of, Blainville and cannot be considered to be straightforward translations of biological conceptions. On the other hand, Guillo makes a forceful case for Comte's biologically inspired rhetoric in the *Cours*.

<sup>9</sup> Charles Robin (1821-1885), the first holder of the Chair of Histology at the Faculté de Médecine de Paris, was one of the founding members of the *Société de Biologie* (1848), an institution which played a key role in the establishment of biology as an autonomous discipline in France.

<sup>10</sup> François Joseph Victor Broussais (1772-1838) actively contributed to the medical revolution of the early nineteenth century by furthering the search for the anatomical localisation of diseases.

<sup>11</sup> Emile Littré (1801-1881), a physician turned lexicographer, co-authored with Charles Robin the numerous re-editions of the *Dictionnaire de Médecine* of Nysten, one of the most authoritative compendium in the field in the nineteenth-century.

<sup>12</sup> G. Canguilhem, "La philosophie biologique d'Auguste Comte et son influence en France au XIX<sup>e</sup> siècle", in G. Canguilhem, *Etudes d'histoire et de philosophie des sciences concernant les vivants et la vie*. Seventh Edition. Paris: Vrin, 1994, pp. 61-74. General appraisals of Comte's philosophy of biology can be found in L. Lévy-Bruhl, *The Philosophy of Auguste Comte*. Translated by K. de Beaumont-Klein, with an introduction by F. Harrison. London: Swan, Sonnenschein & Co, 1903, Book II, Chap. IV; J. Grange, *La philosophie d'Auguste Comte. Science, Politique, Religion*. Paris: PUF, 1996, Deuxième partie, Chap. II.

<sup>13</sup> A. Bain, *John Stuart Mill. A Criticism with Personal Recollections*. London: Longmans, Green & Company, 1882. For a detailed and critical account of John Stuart Mill's education, see J. Stillinger, "John Stuart's Mill Education: Fact, Fiction, and Myth", in M. Laine (ed.), *A Cultivated Mind. Essays on J. S. Mill Presented to John M. Robson*. Toronto: University of Toronto Press, 1991, pp. 19-43.

<sup>14</sup> T. Thomson, *A System of Chemistry*. London: Robinson, 1802. In 1818, some Professors of the Royal Military College, Bagshot, who had been greatly impressed by John Stuart's intellectual achievements, sent an invitation for the boy to attend a series of chemistry lectures.

<sup>15</sup> For more details on Mill's French experience, see A. J. Mill, *John Mill's Boyhood Visit to France*. Toronto: University of Toronto Press, 1960.

<sup>16</sup> See n. 7 *supra*. As the letters from Balard to Mill indicate, part of their correspondence in the years following Mill's visit to France touched upon such scientific subjects as botany or chemistry and Balard's early professional career as a scientist (one of Balard's letter recounted his recent discovery of bromine): see M. Filipiuk, "Letters to Mill from 'A Friend of My Own Choosing': Antoine Jerome Balard (1802-76)", *Mill Newsletter* 1987, XXII/2, pp. 9-27.

<sup>17</sup> Botany was Mill's lifelong hobby, which resulted in the publication of a considerable number of notes in the specialized magazine *The Phytologist*. On Mill as a botanist, see H. Trimen, "John Stuart Mill's Botanical Studies", in H. R. Fox Bourne, *John Stuart Mill: Notices of his Life and Works, together with Two Papers Written by Him on the Land Question*. London: E. Dallow, 1873, pp. 28-31. George Bentham (1800-1884), Samuel's son and Jeremy's nephew, first practiced botany as a gifted amateur whilst managing his father's estate near Montpellier. From 1826, he served as secretary to his uncle, but turned botany into his main activity after the latter's and his father's death in 1833. Bentham actively contributed to the establishment of the Royal Botanic Garden, Kew, by donating more than 100,000 specimens of his herbarium. His classification of seed plants (Spermatophyta), based on an exhaustive study of all known species, served as a foundation for modern systems of vascular plant taxonomy.

<sup>18</sup> This letter, signed "A Friend to Science", was primarily an attack on the "popular" (i.e. religious) prejudice existing against human dissection. Perhaps inspired by Jeremy Bentham's decision to have his body used for medical purposes, Mill recommended, "as the only effectual mode of destroying the prejudice, that such as are superior to it adopt the practice of leaving their own bodies to the surgeons" (J. S. Mill, "Resurrection-Men"; in J. S. Mill, *Newspaper Writings*. Edited by A. P. Robson and J. M. Robson. Introduction by A. P. Robson. Textual introduction by J. M. Robson. Toronto & London: University of Toronto Press and Routledge & Kegan Paul, 1986, p. 50).

<sup>19</sup> T. King, *The Substance of a Lecture, Designed as an Introduction to the Study of Anatomy Considered as the Science of Organization; and Delivered at the Re-Opening of the School, founded by the late Joshua Brookes, Esq. . In Blenheim Street, October 1<sup>st</sup>, 1833*. London: Longman, Rees, Orme, Brown, Green, and Longman, 1834. King, a member of the Royal College of Surgeons and lecturer on anatomy and surgery, had been trained in France (as his credentials indicated, he had been a "House Surgeon to the Hotel Dieu in Paris) and seemed to have submitted a thesis at the Faculté de Médecine de Paris (the Bibliothèque Inter-universitaire de Médecine de Paris holds a copy of King's *Dissertation sur la ligature de l'artère innominée et des artères sous clavières, entre leur origine et la première côte; avec la description de nouveaux procédés opératoires pour arriver à ces vaisseaux*, 1828). Back in London, he took an active part in the movement for the medical reform movement, and, as Adrian Desmond has noted, his taking-over of Joshua Brookes' private medical school in the mid-thirties enabled him to teach "the best French comparative embryology and serialist zoology" (A. Desmond, *The Politics of Evolution. Morphology, Medicine, and Reform Radical London*. Chicago & London: The University of Chicago Press, 1989, p. 164).

<sup>20</sup> J. S. Mill, "Dr King's Lecture on the Study of Anatomy", in J. S. Mill, *Miscellaneous Writings*. Edited by J. M. Robson. Toronto & London: University of Toronto Press – Routledge & Kegan Paul, 1990, p. 323.

<sup>21</sup> "Blainville (...) has given a zoological classification, under which all the parts of it [the Science of Organization] might be arranged, so as to make it complete; and he has furnished a vast deal of the materials for such work. He divides the Science of animals, (or what I should term the complete Anatomy of animals) that is Zoology, or the Science of Organization limited to the animal kingdom, into: - Zooclassia, which has for its object the classing and naming of animals after their general external form, which, being known to represent the entire organism, admits of their arrangement in natural groups, and in such an order, that it gives, at once the place each occupies in the Animal scale" (T. King, *The Substance of a Lecture*, p. 5); Zootomia (anatomy); Zoobiologia (physiology); Zooethica (natural history); Zooatria (pathology); and Zoonomia (the management of animals).

<sup>22</sup> With regard to the inorganic sciences, Mill openly acknowledged his debt to William Whewell's *History of the Inductive Sciences* (1837): "the materials were there, for my own thoughts to work upon: and the author had given to those materials the first degree of elaboration which so greatly abridges and facilitates the subsequent labour" (J. S. Mill, *Autobiography*, pp. 215-7).

<sup>23</sup> On Bain, see J. N. Hattiangadi, "Bain, Alexander", in C. C. Gillispie (ed.), *Dictionary of Scientific Biography*. New York: Scribner, 1981, pp. 403-4; R. Rylance, *Victorian Psychology and British Culture. 1850-1880*. Oxford: Oxford University Press, 2000, Chap. 5 ("Alexander Bain and the New Psychology of the Higher Faculties").

<sup>24</sup> J. S. Mill, *SL*, III, IX, 1, Appendix E (III, XIII, 1 to 3, were included until the sixth edition of the book).

<sup>25</sup> *Ibid.*, III, IX, 4.

<sup>26</sup> *Ibid.*, III, XIII, 3.

<sup>27</sup> Mill used the fifth edition of John Ayrton Paris's *Pharmacologia; comprehending the Art of Prescribing upon Fixed and Scientific Principles; together with the History of Medicinal Substances*. London: Phillips, 1822.

<sup>28</sup> For a list of Mill's references to Paris, see J. S. Mill, *SL*, Appendix K, pp. 1217-8.

<sup>29</sup> See *Ibid.*, III, XIII, 1, p. 473.

<sup>30</sup> See *Ibid.*, III, X, 8, p. 452.

<sup>31</sup> See *Ibid.*, I, VII, 6, p. 129-30.

<sup>32</sup> See *Ibid.*, I, VII, 1, p. 119; I, VII, 6, p. 128; I, VIII, 4, p. 139.

<sup>33</sup> Comte heralded Blainville's zoological classification as "the most perfect application of the natural method to the direct construction of the true animal hierarchy" (A. Comte, *PP*, p. 787) and appended a summary of it in the Forty-second Lesson of the *Cours* (*Ibid.*, pp. 787-91).

<sup>34</sup> Even if Mill referred directly to Blainville's *De l'organisation des animaux, ou Principes d'anatomie comparée*. Paris: Levrault, 1822, in the *System of Logic* (IV, I, 4, p. 656; IV, IV, 4, p. 675) twice, the two other mentions of him (IV, VII, 2, p. 714; IV, VIII, 4, p. 730-1) were clearly linked to Comte's laudatory accounts of Blainville's work. However, as his review of King indicates, Mill came across Blainville's name before he read Comte.

<sup>35</sup> On Carpenter, see R.M. Young, *Mind, Brain and Adaptation in the Nineteenth Century. Cerebral Localization and its Biological Context from Gall to Ferrier*. Oxford: Clarendon Press, 1970, pp. 211-2; K. B. Thomas, "Carpenter, William Benjamin", in C. C. Gillispie (ed.), *Dictionary of Scientific Biography*. New York: Scribner, 1981, pp. 87-9; A. Desmond, *The Politics of Evolution*, pp. 210-22; A. Winter, "The Construction of Orthodoxies and Heterodoxies in the Early Victorian Life Sciences", in B. Lightman (ed.), *Victorian Science in Context*. Chicago: University of Chicago Press, 1997, pp. 24-50. Mill told Comte in one of his letter that he considered Carpenter as "without doubt the most philosophic of all those in our country who study the laws of living bodies" and also "the author of the best treatises of general and human physiology" in English (Mill to Comte, January 28, 1843; in Haac [ed.], p. 129). He added in a later letter that "judging by the quick look [he] had at it [The *Principles of General Physiology*], its ideas seem very commendable" (Mill to Comte, December 25, 1844; *Ibid.*, p. 270). In fact, Mill became acquainted with the physician because his younger brother George Bentham Mill boarded as a pupil at Carpenter's house and was, as Bain recounted, "very much impressed from the outset by [Carpenter's] writings on Physiology" (A. Bain, *Autobiography*. London: Longmans & Green, 1904, pp. 132-3).

<sup>36</sup> W. B. Carpenter, *Principles of General and Comparative Physiology, Intended as an Introduction to the Study of Human Physiology, and as a Guide to the Philosophical Pursuit of Natural History*. 2<sup>nd</sup> edition. London: John Churchill, 1841.

<sup>37</sup> J. S. Mill, "Carpenter's Physiology", in J. S. Mill, *Miscellaneous Writings*, p. 323-4.

<sup>38</sup> "To the experienced reader, it is already some indication of this quality [the power of generalizing], that Dr Carpenter includes in his design the physiology of plants as well as of animals" (*Ibid.*, p. 324).

<sup>39</sup> "It must be kept in mind, however, that no truly natural system can be established, which does not embrace all the peculiarities of internal conformation which anatomical research can discover; since the most important affinities or differences may there be detected, which are not indicated in the slightest degree by external characters" (W. B. Carpenter, *Principles of General and Comparative Physiology*, part. 105, p. 80).

<sup>40</sup> His *Principles of Human Physiology* (1842) also opened on a chapter "On the Place of Man in the Scale of Being", which compared Man to other Quadrupeds.

<sup>41</sup> See A. Desmond, *The Politics of Evolution*, especially Chap. 2, 4, and 5.

<sup>42</sup> L. S. Jacyna, "Principles of General Physiology: The Comparative Dimension to British Neuroscience in the 1830s and 1840s", in W. Coleman & C. Limoges (eds.), *Studies in History of Biology*. Vol. 7. Baltimore & London: The John Hopkins University Press, 1984, pp. 47-92.

<sup>43</sup> S. F. Cannon, *Science in Culture: The Early Victorian Period*. New York: Dawson & Science History Publications, 1978.

<sup>44</sup> J. M. Robson, "Textual Introduction", in J. S. Mill, *SL*, p. lxv.

<sup>45</sup> Comte's influence was also noticeable in Book III, Chap. XI, Sect. 1 of the first edition of the *System*, where he is credited for having underlined the fact that pathological phenomena could serve as substitutes for experimentation in physiology (*Ibid.*, p. 456n) and for his presentation of comparative anatomy and physiology (*Ibid.*, p. 458).

<sup>46</sup> For instance, Mill to Comte, October 30, 1843: "I find it quite natural that you should explain this opinion of mine [on sexual equality] as based on an insufficient acquaintance with the physical theory of animal life, and above all of cerebral physiology. I am doing and shall continue to do my utmost to make such objections vanish" (in Haac [ed.], p. 198).

### Appendix III: Comte's Anatomical, Physiological, Developmental and Comparative Arguments for the Subjection of Women.

#### A - Human Anatomy.

The first argument to consider is the anatomical one, which Comte believed demonstrated “the radical differences, both physical and moral (...) which, within the human race, separate one [sex] from the other, notwithstanding the common preponderance of the specific type” (A. Comte, *PS*, p. 186). More precisely, what was to be proven was that the bodily structure of women prevented them from competing with men with regard to achievements of the intellect or the will.

Comte's lack of explicit textual reference for this claim should not come as a surprise, when one realizes that it was a commonplace among specialists of the female sex. Take for instance the two articles on “Femme (anthropologie et physiologie)” and “Femme (morale)” Julien-Joseph Virey wrote for the *Dictionnaire des sciences médicales par une société de médecins et de chirurgiens* (1812-1822)<sup>1</sup> edited by Charles-Louis-Fleury Panckoucke. In these articles, Virey, a pharmacist and physician, summarized the medical and biological lore about women and emphasised the consequences it had on their social condition. He maintained that

“The entire moral constitution of the feminine sex derives from the innate weakness of its organs; everything is subordinated to this principle, by which nature wanted to make woman inferior to man; she is not woman only by the attributes of her sex; she is in everything” (J.-J. Virey, “Femme (morale)”, p. 555)<sup>2</sup>.

The alleged source of this generalized weakness was ascribed to her “frail and slender organization”, which was said to be made out of “thin and greatly irritable fibres” (*Ibid.*, p. 557). In that instance, it is very likely that Virey drew on Bordeu's *Recherches sur le tissu muqueux* (1767), according to which the specific disposition in women of the mucous or “cellular” tissue spreading throughout the body was responsible for their heightened sensibility<sup>3</sup>. Consequently, women were said to be subjected to rapid alterations of mood and to be more sensitive to both the flow of outer impressions and the play of passions than men. Consequently, they were deemed less able to control themselves, to focus at will, and were often described as being governed by their emotions. As Virey remarked,

“Such a moral disposition is usually at odds with the strength, thoroughness, perseverance, and the firmest qualities of man (...); the frivolousness of her tastes,

the eternal versatility of her ideas and penchants, will forever hold woman beyond perfection in the sciences, the letters or the arts" (*Ibid.*, p. 558).

But it was not only the peculiarities of her nervous system that fated woman to be the inferior of man, for even her bones contributed to her subjection. Virey argued that whereas the general conformation of woman's skeleton took the shape of a pyramid (the pelvis, thighs, buttocks being comparatively broader than the head, shoulders, chest), man's skeleton revealed a prominence of the upper parts of the body, especially his skull which was said to "contain three to four ounces of brains more (...) than that of woman" (J.-J. Virey, "Femme (anthropologie et physiologie)", p. 543)<sup>4</sup>. These osteological features, Virey added, mirrored in the specific functions of men and women:

"This difference in conformation is analogous to the functions of each sex; man is destined by nature to work, to use his bodily strength, to think, to use his reason and his genius to support the family, of which he is the chief; woman, to whom generation was to be entrusted, needed a large pelvis which lent itself to the dilation of the matrix during pregnancy, and to the passage of the foetus during delivery" (*Id.*).

There again, Virey merely echoed themes that were widespread in the anatomical writings of the Enlightenment. As Londa Schiebinger recalls, "beginning in the 1750s, a body of literature appeared in France and Germany calling for a finer delineation of sex differences" (L. Schiebinger, "Skeletons in the Closet: The First Illustrations of the Female Skeleton in Eighteen-Century Anatomy", p. 51)<sup>5</sup>. For instance, the "pyramidal" aspect of woman's body was easily perceived in the plates due to Marie-Genevieve-Charlotte Thiroux d'Arconville and published in 1759<sup>6</sup>, in which the skull was depicted "as smaller in proportion to the body than a man's, the hips as much broader than men's, and the ribs as extremely narrow and confining" (*Ibid.*, p. 59). This rendition proved extremely popular, and found its way into influential anatomical texts such as John Barclay's *Anatomy of the Bones of the Human Body*<sup>7</sup>.

However, the rival female skeleton produced by the German anatomist Samuel Thomas von Soemmering in 1796<sup>8</sup> challenged d'Arconville's widely accepted model by picturing women's ribs sensibly less smaller in proportion to the hips than usual. The debate about the relative merits of the two contestants soon focused on their respective depictions of the female skull. And it was certainly a debate relevant to the sexual equality issue, for cranial volume was indeed held to be the index of innate intellectual capacities. In this last respect, Virey seemed to have been a bit over-enthusiastic in his

definitive pronouncement on man's superior cranial volume, for Soemmerring argued that the female skull was larger in proportion to the body than the male skull: he maintained that the female skull represented 1/6 of total body weight, whereas the male skull represented from 1/8 to 1/10. If someone believed, just as Soemmerring, that "larger skulls hold larger brains, that larger brains are capable of greater intellectual activity, and, consequently, that intellectual ability is innate" (*Ibid.*, p. 78, n. 75), and also accepted taking into account not absolute but proportional weights, then the case for women's intellectual superiority could be made. In other words, the grounds for Virey's confidence were quite shaky.

In the absence of evidence for the innate inferiority of women, one could nonetheless argue that, even if their skeleton did not prevent women from pursuing intellectual activities, some of its features destined them to one definite function, that of reproduction: the article "Squelette" (first published in 1765) of the *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, edited by Diderot and d'Alembert, thus listed the various osteological details facilitating delivery to conclude that these peculiarities "prove that the destination of women is to have children and feed them" ("Squelette", *Encyclopédie*, p. 483)<sup>9</sup>. Yet, the mere fact that women *could* bear offspring was certainly no reason why they *ought* to have done so preferably to any other activity.

Comte might well have been aware of the inconclusive nature of the anatomical arguments; hence their absence from his letters. But they certainly were part of the biological evidence he thought could be adduced to establish women's intellectual inferiority. As for Mill, he did not fail to question them in his replies to Comte, and focused on women's brain size rather than on the features of their tissues. This emphasis may receive a twofold explanation. On the one hand, the histology inherited from Bordeu had lost much of its appeal by the time of the Comte-Mill correspondence, especially when compared with the latest developments in cell-theory. For instance, Mill could have found in W. B. Carpenter's *Principles of Human Physiology*, to which he referred in the *System*<sup>10</sup>, a descriptive account of the cells, bones, and tissues of the human body that did not have the sexualized overtones of Virey's or Bordeu's depictions. On the other hand, Mill could also have come across the following claim, which appeared in the last paragraph of Carpenter's book (Par. 774 : "Relative Characters of Sexes"):

"There is no obvious structural difference in the nervous system of the two sexes (putting aside the local peculiarities of its distribution to the organs of generation); save the inferior size of the Cerebral Hemispheres in the Female" (W. B. Carpenter, *Principles of Human Anatomy*, p. 729)<sup>11</sup>.

This anatomical contrast was mirrored at the functional level, for, Carpenter argued, “there can be no doubt that – putting aside the exceptional cases which now and then occur – the intellectual powers of Woman are inferior to those of Man” (*Id.*). Woman’s perceptive faculties were said to be more acute, her views more “distinguished by clearness and decision”, and her emotions and instincts more active than those of man. Conversely, she was less capable of sustained mental effort, her thought lacked comprehensiveness, and she was not endowed with the same amount of “*volitional powers*” as man. Carpenter thus concluded:

“In regard to the inferior development of her Intellectual powers, therefore, and in the predominance of the Instinctive, woman must be considered as ranking below Man; but in the superior purity and elevation of her Feelings, she is as highly raised above him” (*Ibid.*, pp. 729-30).

The support given to Comte’s theses in what Mill considered as one “of the best treatises of general and human physiology” in English (Mill to Comte, January 28, 1843; in Haac [ed.], p. 129) might have convinced him that it was necessary to challenge the conclusion of arguments drawn from the size of women’s brain. His reply came with the letter to Comte dated August 30, 1843, within which he made clear he was aware of the anatomical arguments:

“I do know that very eminent physiologists suggest that the feminine brain is smaller, consequently weaker, but more active than that of men” (Mill to Comte, August 30, 1843; in Haac [ed.], p. 183).

After having drawn the likely psychological consequences deriving from female cerebral constitution (a lesser aptitude for continuous and prolonged intellectual work that rendered them less fit for science; a greater efficiency and quickness of mind that suited them for poetry and practical life) and acknowledged that such a hypothesis was compatible with the observed facts, Mill nonetheless qualified the conclusion arrived at:

“We would, however, risk exaggerating the extent of the diversity a great deal if we did not take into account the difference in education and in social position; for whether women are or are not naturally inferior in their capacity for prolonged intellectual work, there is no doubt that nothing in their education is organized to develop this talent, while for men, the study of science and even of dead languages, certainly tends to do just that” (*Ibid.*, p. 184).

What Mill suggested was to balance the consideration of the biological make-up of individuals and its bearing on their mental capacities with a concern for the way the environment related to the latter: perhaps was it the case that differences in brain conformation made a difference with respect to intellectual achievements, but surely were also differences in education and social position. Given that women were usually prevented, because confined to household chores, from being exposed to stimulations favourable to their intellectual development, it was difficult to assess the respective contributions of biological and environmental factors. Mill did not go into the details of the perspective that would permit this assessment, but his sketchy evocation pointed towards a conception of human nature in which human capacities were dependent on the biological make-up of their bearers but the actualization of these capacities depended on environmental stimulations. Furthermore, he remained silent as to the outcomes of such a survey, even if his letter repeatedly stressed the plasticity of human nature.

However, certainly because of Comte's refusal to consider his comparative proposal<sup>12</sup>, Mill became less accommodating and retracted what he said about women's brain size:

"If, in our discussion of the characteristic tendencies of the two sexes, I have cited the view that I knew to be that of several eminent physiologists – the view that women are less suited than men to sustained intellectual work, in science as much as in philosophy – it was not presented as my own opinion. I stated it as the only one among the theories of this type that did not seem to stand in flagrant contradiction to the facts" (Mill to Comte, October 30, 1843; *Ibid.*, p. 199).

To be sure, Mill thought that a theory of a different type was available, which ascribed the lesser "special vocation" (*Id.*) of women for science to their education and social education, as outlined in the 1832-1833 unpublished piece "On Marriage"<sup>13</sup>. But what he certainly realized was that neither the psychological nor the physiological theory could be assessed independently of each other. Since Comte refused even to consider the former, Mill eventually judged the latter irrelevant to the adjudication of the sexual equality issue. As things then stood, it was a tie: the anatomical arguments failed to settle the case one way or another.

#### B - Human Physiology.

Whereas the anatomical argument tried to infer women's inferiority from the structure (osteological or histological) of their bodies, the physiological argument

attempted to show that the dominant function which characterized them as women prevented them from partaking in intellectual activities. As E. A. William notices, many physicians in the late eighteenth-century thought that the physiology of reproduction could back up their claim that

“women differed inherently from men, and taught that women had but limited capacity for any activities other than those for which nature had intended them – gestation, birthing, nursing, and the care of children” (E. A. Williams, *The Physical and the Moral*, pp. 54-5).

This was exactly the perspective adopted by Roussel<sup>14</sup>, the Montpellier physician Comte referred Mill to in his letter of November 14, 1843: as Comte put it, Roussel based this “principle [the subordination of one sex to the other] simply on the dominant idea of the physical functions [proper to man and woman]” (Comte to Mill, November 14, 1843; in Haac [ed.], p. 208). Women were physiologically destined to be mothers, and this biological fate conditioned the scope and nature of their mental abilities.

Even though it antedated by far the clinical and anatomo-pathological revolution, Roussel’s *Système physique et moral de la femme* (1775)<sup>15</sup> continued to be read and used by many French physicians late in the nineteenth-century: the famous dermatologist Alibert procured a second edition of it in 1805<sup>16</sup>; Virey mentioned Roussel in his article for Panckoucke’s *Dictionnaire*<sup>17</sup> as an important reference on the subject in 1815; and the book was still available around 1870<sup>18</sup>. Accordingly, one may say that Comte merely endorsed a traditional medical teaching that still was authoritative in the 1840s.

The two main tenets of Roussel’s thought about woman were his “incommensurabilism” and his finalism. Firstly, he maintained that women were not imperfect men, and claimed that they should be studied in their own right: even if they belonged to the same species, the differences between the two sexes were such that they pointed towards two different “natures”.

“There is a radical, innate difference [between men and women], which exists in every country and every people. (...) the disposition of the parts that compose woman’s body is determined by nature itself, & (...) serves as a foundation for the physical and moral character that characterizes her” (P. Roussel, *Système*, pp. 16-7)<sup>19</sup>.

Secondly, Roussel radicalized his physiological functionalism into a finalism so as to turn the reproductive capacity of woman into her essence: her destination was to give birth to children and raise them, to the exclusion of any other activity. There was more to woman than a child-bearer, Roussel acknowledged, but one should not be misled; the perpetuation of mankind was her main contribution<sup>20</sup>.

“All that nature especially did for woman was only to lead her there: when nature succeeds, its plan is fulfilled” (*Ibid.*, p. XXXV).

This emphasis on the reproductive role of women was far from original, but Roussel added a new ingredient that transformed a purely physiological consideration into an all-encompassing perspectives with dramatic social consequences. For Roussel argued, in line with the holistic approach he inherited from the vitalist Montpellier Faculté de Médecine, that the sexual dimorphism of mankind also conditioned non-reproductive functions, including psychological ones such as reasoning and imagination.

“the difference of the sexes may very well find its way into the mind & character, for different instruments produce different effects” (*Ibid.*, p. 23, note a).

It was not only that men and women were anatomically (women have breasts, no external genitalia, etc.) and physiologically different (they have menstruations, get pregnant, etc.); these very differences were reflected in all the other parts of their bodies and affected all the aspects of their individualities: the essence of sex

“does not limit itself to one single organ, but extends, in more or less sensible nuances, to all the parts of the body; so that woman is not woman in one place only, but from every perspective through which she can be considered” (*Ibid.*, p. 2).

For instance, Roussel claimed that the necessary constitutional weakness of women (which permitted untroubled pregnancies and easy deliveries) supposed softness in their tissues and a greater laxity of their osteological structures. Accordingly, he could then draw on the teachings of Bordeu<sup>21</sup> and maintain that the greater sensibility of women made them capricious, inconstant, and unfit to engage in any demanding intellectual task:

“It is not unlikely that this weakness, which we have held to characterize the organs of woman, prevents her from achieving the efforts of concentration that are necessary for the study of the abstract sciences (...); and that her imagination, which is too lively and so unable to sustain any enduring attention, renders her unfit for the arts that depend on that faculty of the soul; but it is also this weakness that gives birth to the sweet and affectionate sentiments constituting the principal character of woman” (*Ibid.*, pp. 31-2).

These “sentiments” therefore prompted women to search for a protector who would guide them in the path of life and to whom women would repay his dedication through care and affection.

To be sure, Roussel did not deny that women could, to a certain extent, launch into intellectual pursuits; but, as a guarantor of the “*bonne morale*” (*Ibid.*, p. XI), the

physician emphasized the evil consequences of such attempts for their health. Whereas moderate exercise and a sensible diet were advocated as good preservatives, a sustained application of the female's mind to abstract or complicated questions was considered a threat to the balance of her temperament, which was naturally "sanguine", and thereby would compromise her reproductive abilities. Since any additional energy devoted to intellectual pursuits would be spent to the detriment of the rest of the organism, women ought to abstain from them for their own sake and in the interest of the species. Just as men of letters were often constitutionally sick due to their unhealthy mode of life, Roussel argued the unthinking "*femmes savantes*" would lose their reproductive powers:

"This affectation familiar to men of letters would follow even more naturally and more infallibly from a serious study in women who would be foolish enough to devote themselves to it. Their delicate organs would suffer even more from the inevitable drawbacks it leads to" (*Ibid.*, p. 103).

So Roussel's medical moral, inspired by his "incommensurabilism" and his finalism, was to encourage women to stick to their traditional roles as mothers and household carers. In short, reproductive physiology provided the rational for woman's subjection.

This line of reasoning proved extremely appealing and became an essential element of nineteenth-century bio-medical knowledge about women. Take for instance P.-J.-G. Cabanis' highly influential *Rapports du physique et du moral de l'homme* (1802)<sup>22</sup>: whilst paying tribute to Roussel's *Système* and Rousseau's *Emile*<sup>23</sup>, the Fifth *Mémoire* on "the influence of the sexes on the character of ideas and moral affections" also argued for the existence of radical constitutional differences between men and women deriving from the sexual dimorphism of the human species<sup>24</sup>, the overriding importance of reproductive physiology in the life and functioning of individuals<sup>25</sup>, and its specific consequences with regard to their psychological make-up<sup>26</sup>.

In this last respect, Cabanis merely developed Roussel's analysis by emphasizing that the specific manner of feeling in woman, itself dependent on her constitutional frame and the influence of her reproductive organs, led her to pay attention only to what was related to her needs; to engage in minute handwork; to let her imagination wander; or to develop moral insight and sagacity in personal relations. Conversely, she rightly avoided any intellectual task requiring knowledge, perseverance or reasoning. In a tone reminiscent of the Greeks, Cabanis concurred with Roussel that the frail constitution of woman was mirrored in her intellectual shortcomings:

"In a word, both the nature of things and experience prove that, if the weakness of woman's muscles forbids her to enter the gymnasium and the hippodrome, the qualities of her mind and the role she must play in life forbid her perhaps even more imperiously to make an exhibition of herself in the lyceum or in the colonnade" (P.-J.-G. Cabanis, *Rapports*, 243).

This depiction of woman inherited from Roussel and popularized by Cabanis spread out and rapidly turned into a commonplace, especially in the medical field. The twin theses of the unfitness of women for abstract mental reflection and of the sterility that would naturally result from an excessive engagement in intellectual pursuits were reiterated *ad nauseam* in the literature, as the physician and historian of medicine J.-L. Moreau de la Sarthe's *Histoire naturelle de la femme* (1803)<sup>27</sup> and Virey's articles for Panckoucke's *Dictionnaire illustré* illustrated<sup>28</sup>.

With regard to the debate on sexual equality, it is interesting to note that this physiological approach, which focused on the dramatic consequences of the reproductive function on women's intellectual capacities, was set aside both by Comte and Mill. As for Comte, he made clear in the Fiftieth Lesson of the *Cours* that this argument would fail to provide evidence to support his claim for the subjection of women:

"I have purposely set aside the vulgar consideration of the mere material differences on which such a fundamental subordination has been irrationally grounded; for it has to be essentially connected with the nobler properties of our cerebral nature" (A. Comte, *PP*, p. 187).

What the physiological perspective maintained was that women had an essential role in the reproduction of the human species, to which the constitution of her body testified. But, as we have seen with Roussel, it was not held that this role was incompatible with intellectual pursuits. Accordingly, when they were not pregnant and once their children were raised, women could surely devote their free time to something else than household matters. And what about childless women? Could they not contribute to the well-being of mankind through scientific or cultural achievements? So, it was not enough for Comte to have the generational role of women recognized; he also needed to have a positive proof of their intellectual inferiority, which certainly had, in his eyes, more to do with the physiology of their brains than with that of their reproductive organs.

Similarly, Mill never evoked in his letters the arguments drawn from the physiology of reproduction. In fact, it is very likely that they might have seemed quite exotic to him, especially when the holistic approach of women's constitution developed

by Roussel or Cabanis is compared with the more neutral approach in Carpenter's *Principles of Human Anatomy*. In this last book, the various details of the reproductive process were extensively treated in the light of the most recent discoveries in the field, but no inferences were made from those as to the intellectual capacities of women. As we have seen, Carpenter certainly held that women were intellectually inferior to men, but he did not claim that the phenomena associated with generation were the causes of such a difference. Accordingly, Mill may have felt authorized to skip the consideration of arguments drawn from the physiology of reproduction, even the more so given Comte's reluctance to endorse them<sup>29</sup>.

### C - Developmental Analysis.

Another view that Cabanis, Virey or Moreau inherited from Roussel, and on which Comte himself drew at length, was the assimilation of women to children. For if women were closer to children than to men, anatomically and physiologically speaking, it was claimed to follow that their intellectual capacities could not compete with those of men, just as everybody agreed that the intellectual capacities of a child were inferior to those of an adult. For whereas the child could grow into an adult, an adult woman would never become a man. Such was the knock-down argument provided by the intra-specific comparison of the respective development of man and woman, what Comte called its "third mode".

As he first stated in the *Cours* and reasserted in the correspondence with Mill, Comte held that intra-specific comparison could also settle the case about women's intellectual inferiority. In that respect, the formulation given in Comte's letter to Mill dated July 16, 1843, is the most explicit:

"As imperfect as biology may still be in every respect, it seems to me that it can already firmly establish the hierarchy of sexes, proving both anatomically and physiologically that for almost the entire animal chain, and especially in our species, the female sex constitutes a sort of state of radical childhood, which makes it essentially inferior to the corresponding organic type" (Comte to Mill, 16 July, 1843; in Haac [ed.], p. 179-80).

Putting aside for the time being the inter-specific component of this claim, one nonetheless realises that the demonstration of women's inferiority according to this last approach involves a developmental component that appeals both to anatomical and physiological evidence. The rationale of the argument, which is certainly one of the reasons for the permanence of the "childlike woman" myth, seems to be the following:

let us take a case in which there is no dispute as to the extent of the respective intellectual achievements of the individuals considered, namely the case contrasting children with adults. Everybody would agree that the intellectual achievements of adults outstrip by far those of children. If one could show that women are on a par with children for their intellectual achievements, then Comte's argument for the latter's innate inferiority would follow, provided one also accepts the additional premise that the intellectual shortcomings of women are due to a constitutional cause (their biological make up having not developed beyond the stage of infancy) nothing could compensate. To be sure, the comparison of women with children was not a novelty, but, as Londa Schiebinger points out<sup>30</sup>, the alleged support it gained from biology in the nineteenth-century greatly contributed to strengthen its rhetorical power.

The retention of juvenile characteristics in mature women (what is called neoteny in the context of evolutionary theory) was already pointed out by Roussel in his *Système*:

"Woman, whilst approaching puberty, seems to move away less from her primitive condition than man. Sensitive & gentle, she always retains something of the temperament proper to children" (P. Roussel, *Système*, p. 6).

When puberty occurred, Roussel argued, the maturing process produced dramatic internal and external changes in woman's body (complexion, voice, height, movements), but her organs and her tissues were still characterized by the softness typical of infancy, which made them highly receptive to sensory impressions: hence "the passive state to which nature destines her" (*Ibid.*, p. 15), which explained why it had been observed to exist between man and woman a "radical, innate difference (...) in every country and every people" (*Ibid.*, p. 16). Neither any alteration in the circumstances nor any amount of training or education could modify such a state of affairs: women were, at least from the intellectual point of view, less developed than men, as their constitutional proximity with children demonstrated.

The success of this argument almost rivalled that of the anatomical and physiological ones. If Cabanis' *Rapports* tirelessly repeated the importance of the softness of woman's tissues but did not link it explicitly with the constitution of the child, Virey did not fail to make the comparison in one of his articles for Panckoucke's *Dictionnaire*:

"woman relates to infancy in many respects" (J.-J. Virey, "Femme (anthropologie et physiologie)", p. 544).

His list of commonalities was long, but to name just a few: bones smaller than those of man; a spongier and wetter cellular tissue; a smaller and quicker pulse;

beardlessness; a taste for sweet and sugary food; a sanguine temperament. But, and that was the critical point for the proof of their innate intellectual inferiority, child and woman shared the same unfitness for sustained mental activity because of their specific physiology:

“Like a child, her organs easily give in to impulsions; she exhibits a heightened, and consequently excessively variable, sensibility, which is incapable of persevering in the same sensations; or whose constancy lies in a perpetual variety of sentiments about the same object” (*Ibid.*, p. 546).

However, whereas the stiffening of nerves and tissues in the (male) child could allow education and discipline to have their effects, namely to facilitate the access to autonomy, females’ immutable “softness” severely limited the impact of exercise and training on their mental development. The enduring immaturity of women made them girlish to the last, and consequently necessitated their subjection to the authority of thoughtful and strong-willed men.

What is striking about the comparison of children and women is that it gave a new impetus to old discussions. For instance, we have seen previously how the d’Arconville/Soemmerring debate reached a stalemate because of the unreliability of the data at hand. Yet, the anatomist John Barclay, whose writings had been instrumental in introducing the D’Arconville skeleton in England, found a way to vindicate the view that, notwithstanding Soemmerring’s measurements, the skull size of women demonstrated their intellectual inferiority. He agreed with the German anatomist that their skull was larger than that of men if considered in relation with the size of their body. But, and that was the nerve of Barclay’s argument, so was the children’s skull. Consequently, he inverted the usual claim according to which the larger the skull, the bigger the brain, the greater the intelligence, by relating women’s large skulls to an incomplete anatomical and physiological development. In his 1829 *Anatomy of the Bones of the Human Body*, Barclay vindicated pictorially his interpretation by introducing what is likely to be the first anatomical drawing presenting jointly skeletons of man, woman and child<sup>31</sup>. His depiction was in many respects similar to that of Virey: children and women had equivalent skull sizes, a frontal fissure, smaller bones than men, comparable rib cages, jaw shapes, and feet sizes. However, he also acknowledged that the assimilation had a limit: women’s pelvis was specific.

“It is there [in the pelvis] that we cease to trace the analogies between its [the female skeleton’s] proportions and those of the foetus: or in other words, it is there that, in deviating from those characters which at one time were common to both [male and female], we regularly find it [the pelvis] deviating farther than that of the male – the

pelvis of the foetus being always proportionally the smallest of the three, and that of the female proportionally the largest" (J. Barclay, quoted in L. Schiebinger, "Skeletons in the Closet", p. 65).

And in line with Roussel, Cabanis, Virey, or Moreau de la Sarthe, Barclay's presentation associated women's intellectual inferiority (due to an immature growth) with their reproductive role: babies, not thoughts, should be the products of women's bodies.

As we have seen, Comte took it that the "childlike woman" argument offered substantive support for his case for female subjection: both the *Cours* and his letter to Mill dated July 16, 1843 stressed this point. Accordingly, Mill could not fail to challenge the conclusion drawn from developmental analysis. In his letter dated August 30, 1843, Mill made clear he knew what Comte suggested:

"I think I understand what you mean when you compare the organic constitution of the feminine sex to a state of prolonged childhood. I am well acquainted with what many physiologists have said on this subject, and I know that not only in the muscular and cellular system but also in the nervous system and quite probably in their brain structure, women are less removed than men from the organic nature of children" (Mill to Comte, August 30, 1843; in Haac [ed.], p. 183).

Mill even added four paragraphs later that he was not denying that

"women, like anyone who is more nervous and excitable than the average person, will naturally have a character that resembles young persons more than the mature" (*Ibid.*, p. 184).

Yet, whilst taking note of the teachings of the physiologists, Mill nonetheless tried again to bring to the forefront of the discussion the necessity to balance the consideration of biological factors with that of environmental ones. Now, the gist of the "childlike woman" argument was on the contrary to maintain that the similarities between women and children with regard to intellectual achievements were primarily ascribable to a similar physiological constitution, women being held not to have developed further than the stage of infancy. Ignoring the physiological facts adduced in support of this claim<sup>32</sup>, Mill maintained that the hypothesis of an incomplete physiological development did not exhaust the stock of likely explanations for women's lesser intellectual record.

"To make it so, one would have to prove that the inferiority of children as compared to men depends on the anatomical difference of their brain[s], while it evidently depends to a large degree, if not entirely, on the lack of training" (*Ibid.*, p. 183).

What Mill apparently wanted to argue was that the child/adult – women/men analogy did not hinge decisively on anatomy. For, Mill seemed to suggest, when we claim that the intellectual capacities of adults outstrip those of children, what we generally assume is not that anatomy makes a difference (since the comparison between children and adults naturally makes sense only if premised on the fact that the two groups share the same physiological make-up on which intellectual abilities depend<sup>33</sup>), but rather that education and experience do. Furthermore, if we compare two adult men with respect to their respective record of intellectual achievements, any difference would be primarily accounted for by a difference in education or experience. It is only in case no environmental cause can be adduced for the discrepancy that we turn to anatomy. So why should we act differently with women? The example Mill appended to his previous statement pointed towards such a line of reasoning:

“for a great number of men, especially of the higher classes of workers, their daily occupations necessitate, or at least permit, sustained intellectual application, while for the great majority of women, the perpetual obsession with the petty concerns of domestic life, that distracts the mind without occupying it, admits no intellectual effort which requires either physical isolation or uninterrupted attention” (*Ibid.*, p. 184).

To grasp the strength of Mill’s point, one must put it back into its historical context. Let us assume, for the sake of argument, that in *ancien régime* societies, intellectual and moral capacities were correlated with lineage (virtuous and intelligent men necessarily being of noble birth, whereas men of humble birth remained peasants and workers because less gifted). Modern societies, and especially post-revolutionary ones, refuted this hierarchical prejudice based on the alleged properties of kinship, by enabling the higher classes of workers to develop and manifest their mental abilities by transforming their social condition, notably by educational means. Let us apply the same process to women, and we will see what the outcome would be, Mill implicitly proposed by concluding that it is the way we usually conceive the effects of education on boys:

“Among the men themselves, one can certainly discover no great aptitude for mental work among those whose childhood was spent far from any study and where the requirements of later life have not made up here what was lacking during their early education” (*Id.*).

Unfortunately, Comte did not seem ready to accept Mill’s rendition of the problem:

“While admitting the anatomic differences which place the feminine organism further from the mature human type, I believe that you do not assign an important enough physiological role to these differences, while perhaps exaggerating the

possible effect of training which, after all, necessarily assumes first of all a suitable constitution [i.e. a capacity to be trained]" (Comte to Mill, October 5, 1843; *Ibid.*, p. 189).

What Comte failed to see was that he was just dogmatically asserting women's intellectual inferiority. As Mill claimed, the actual condition of women would prevent them from exhibiting the true scope of their mental abilities. Either they were naturally inferior, and their condition would only renew and reinforce their inferiority. Or they were naturally equal (or superior), but the weight of social arrangements would stifle their development. In any case, Mill suggested, the only way to decide the question of the natural inferiority of women would be to alter their social condition so as to be able to compare men's and women's achievements.

#### **D - Inter-Specific Comparison.**

Eventually, the comparison between all living organisms was held by Comte to support his claim for the subjection of woman. The precise sources of this last argument are certainly the most difficult to identify, for Comte declared that, although he had been inspired by Blainville, he also acknowledged that the French scientist proposed "no express thesis of any kind" (Comte to Mill, November 14, 1843; *Ibid.*, p. 202) concerning the alleged intellectual inferiority of women<sup>34</sup>. So, what made Comte think that

"it is impossible not to see emerge, from the whole of zoological studies, the general law of the superiority of the masculine sex in all the upper ranges of the hierarchy of living beings" (*Id.*)?

If one sticks to the idea of a single linear ascending series, organized with reference to a type-species and constituted of discrete groupings, as theorized by Blainville and accepted both by Mill and Comte, one of the reasons why the latter may have held inter-specific biological classification to support the case for woman's inferiority surfaces: within the anthropocentric frame characteristic of the pre-evolutionary context, the type-species was "man, considered in the adult and normal state" (A. Comte, *PP*, p. 700)<sup>35</sup>. However, Comte later specified that it was not the human species as such that served as a type but only the "male sex" (*Ibid.*, p. 705), because it truly constituted the higher – most developed – element in the biological series. Accordingly, Comte may have thought that inter-specific comparison provided

evidence for man's superiority over woman, and primarily with regard to intellectual capacities.

Now, this last contention rests on somewhat shaky grounds for several reasons. First of all, Comte argued in the *Cours* that the greater scope of inter-specific comparison supported the case for women's inferiority because it allegedly demonstrated that female inferiority was the rule in the (dimorphic) animal kingdom. But he also pointed out that this support primarily concerned claims that dealt with biological phenomena such as physical strength – which could be observed in many different species of animals –, not claims about intellectual capacities that could be identified with precision only in the most developed organisms:

"This is certainly the case for the most eminent intellectual and moral functions, which, except for man, disappear almost entirely or become hardly recognizable once one goes beyond the first classes of mammals. One must undoubtedly regard this tendency to become less completely applicable as a radical imperfection of the comparative method, especially when the complication and utmost importance of the phenomena considered would demand a more vigorous assistance from fundamental resources" (*Ibid.*, p. 707).

For instance, Comte's mentor Blainville maintained that his zoological classification, which rested on the morphological appraisal of organisms' structural disposition for sensibility and locomotive abilities, eschewed the consideration of the cerebral functions on which depended intellectual capacities, because, as D. Guillo recalls, Blainville admitted that "in the case of the cerebral functions, the "faculty" cannot be deduced from the anatomical or morphological properties of the organs: in such a case, the mechanism does not *explain* the functioning" (D. Guillo, *Les figures de l'organisation*, p. 201). Accordingly, with regard to women's intellectual capacities, it seems that inter-specific comparative anatomy could not provide the appropriate evidence: comparison could only take place within the human species.

However, Comte thought that the consideration of inter-specific comparative physiology was evidence enough for his claim:

"Even if the analysis of anatomy had not as yet sufficiently clarified the explicit demonstration that our species is organically superior to the rest of the animal kingdom (...), the study of physiology would leave no doubt here, if only because man has progressively obtained the ascendancy [over all other species]. Things stand about the same way in the matter of the sexes, though to a much lesser extent" (Comte to Mill, October 5, 1843; in Haac [ed.], p. 191).

Unfortunately for Comte, he could not argue from the domination exerted by men over animals to legitimate that over women. For, whereas in the first case the domination primarily depended on physical constraint (animals were forced to obey),

the domination in the second case was said to depend primarily on intellectual superiority. Consequently, since the grounds for domination differed, one could not take the latter as a mere extension of the former. Inter-specific comparison seemed to fare no better than the arguments based on human anatomy, reproductive physiology, and developmental analysis.

<sup>1</sup> *Dictionnaire des sciences médicales par une société de médecins et de chirurgiens*. Paris : Panckoucke, 1812-1822. Panckoucke's sixty in-8<sup>o</sup> volumes constituted the first encyclopaedic medical work of the 19<sup>th</sup> century. With more than 4000 articles (and 200 plates), it synthesized the knowledge of the time, directly benefiting from the rise of the clinical method and the latest developments in pathological anatomy. It included contributions of such famous French practitioners as the dermatologist Alibert, the psychiatrists Pinel and Esquirol, the internist Laënnec, the military physician Desgenettes, or the surgeon Larrey.

<sup>2</sup> J.-J Virey, "Femme (morale)", in *Dictionnaire des sciences médicales par une société de médecins et de chirurgiens*. Paris : Panckoucke, 1815. Volume 14, pp.554-72.

<sup>3</sup> On Bordeu's theory of mucous tissue, see E. A. Williams, *The Physical and the Moral*, pp. 36-7 & 55-6.

<sup>4</sup> J.-J Virey, "Femme (anthropologie et physiologie)", in *Dictionnaire des sciences médicales par une société de médecins et de chirurgiens*. Paris : Panckoucke, 1815. Volume 14, pp.503-54.

<sup>5</sup> L. Schiebinger, "Skeletons in the Closet: The First Illustrations of the Female Skeleton in Eighteenth-Century Anatomy", in C. Gallagher & T. Laqueur (eds), *The Making of the Modern Body. Sexuality and Society in the Nineteenth Century*. Berkeley: University of California Press, 1987, pp. 42-82.

<sup>6</sup> The plates were appended to a French translation of Monro's *Anatomy of the Human Bones* (1726): *Traité d'ostéologie, traduit de l'anglois de M. Monro, professeur d'anatomie, et de la Société Royale d'Edimbourg: où l'on a ajouté des planches en taille-douce, qui représentent au naturel tous les os de l'adulte et du fœtus, avec leurs explications / Par M. Sue, professeur & démonstrateur d'anatomie aux Ecoles Royales de Chirurgie*. Paris: Guillaume Cavelier, 1759.

<sup>7</sup> J. Barclay, *The Anatomy of the Bones of the Human Body, Represented in a Series of Engravings, Copied from the Elegant Tables of Sue and Albinus*. Edinburgh: E. Mitchell, 1829.

<sup>8</sup> S. T. von Soemmerring, *Tabula sceleti feminini juncta descriptione*. Utrecht, 1796.

<sup>9</sup> "Squelette", in *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*. Edited by Diderot and D'alembert. Tome Quinzième. Neufchastel : Samuel Faulche, 1765, pp. 482-3.

<sup>10</sup> See Appendix II.

<sup>11</sup> Carpenter's book is quoted from the following edition: W. B. Carpenter, *Principles of Human Physiology, with their Chief Applications to Pathology, Hygiene, and Forensic Medicine. Especially Designed for the Use of Students*. Second edition. London: John Churchill, 1844.

<sup>12</sup> "you do not attach", Comte replied to Mill, "enough importance to the true consequences of [women's] inborn inferiority. Their characteristic ineptitude in abstraction and intellectual argument [and] their almost total inability to eliminate the inspiration of passion from logical reasoning must continue to deny them indefinitely any elevated position in the immediate direction of human affairs" (Comte to Mill, October 5, 1843; in Haac [ed.], p. 189).

<sup>13</sup> See IC2.

<sup>14</sup> On Roussel, see P. Hoffmann, *La Femme dans la pensée des Lumières*. Paris: Ophrys, 1977, Première partie, Chap. 4, Sect. 4; E. A. Williams, *The Physical and the Moral*, pp. 54-6.

<sup>15</sup> P. Roussel, *Système physique et moral de la femme ou Tableau philosophique de la constitution, de l'état organique, du tempérament, des mœurs, & des fonctions propres au sexe*. Paris: Vincent, 1775.

<sup>16</sup> P. Roussel, *Système physique et moral de la femme ou Tableau philosophique de la constitution, de l'état organique, du tempérament, des mœurs, & des fonctions propres au sexe. Nouvelle édition augmentée de l'éloge historique de l'auteur*. Paris: Crapart, Caille et Ravier, 1805.

<sup>17</sup> J.-J Virey, "Femme (morale)", p. 572.

<sup>18</sup> P. Roussel, *Système physique et moral de la femme. Nouvelle édition, contenant une notice biographique sur Roussel, une esquisse du rôle des émotions dans la vie de la femme, et des notes par le Dr Cerise*. Paris : V. Masson, 1869.

<sup>19</sup> All references to Roussel's *Système* are taken out of the first edition quoted in n. 15 *supra*.

<sup>20</sup> The titles of the chapters of the second part of the book leave no mystery as to what are "The Proper Differences that distinguish the sexes": "Of the Organs & Proper Means by which woman contributes to generation"(Chap. I), "Of the influence of Woman in the works of generation"(Chap. III), "Of Pregnancy"(Chap. V), etc.

<sup>21</sup> In his preface, Roussel acknowledged his debt to Bordeu: “The knowledge we owe to M. de Bordeu concerning cellular tissue, has also provided me with some of the elements with which I have composed the temperament [of woman]” (P. Roussel, *Système*, p. XXVIII).

<sup>22</sup> On Cabanis, see M. S. Staum, *Cabanis. Enlightenment and Medical Philosophy in the French Revolution*. Princeton: Princeton University Press, 1980, pp. 213-7. In his funeral oration at Blainville’s burial in 1850, Comte ranked Cabanis with Bichat, Lamarck, and Gall, as one of the “main organs” that contributed to the introduction of “rational positivity (...) into the central conceptions of biology, first with regard to vegetative and animal existence, and then to the intellectual and moral domain” (A. Comte, “Discours prononcé aux funérailles de Blainville”, in A. Comte, *Système de politique positive*, Tome I, Appendice premier, p. 738). References will be taken from P.-J.-G. Cabanis, *Rapports du physique et du morale de l’homme et Lettre sur les causes premières. Avec une table analytique de Destutt de Tracy. Huitième édition. Augmentée de notes et précédées d’une notice historique et philosophique sur la vie, les travaux et les doctrines de Cabanis par L. Peisse*. Paris: J.-B. Baillière, 1844.

<sup>23</sup> *Ibid.*, p. 244.

<sup>24</sup> “to understand properly the different influence of these organs [of reproduction] in the two sexes (...), one has to conceive the peculiar dispositions in the primitive formation of the nervous system, as well as in that of the cellular tissue, muscles, and bones” (*Ibid.*, p. 228).

<sup>25</sup> “the penchants and the habits proper to each [animal species] derive for a great part from the manner in which it propagates, and [...] the character of its needs, its pleasures, and its works, its sociability, its perfectibility, the extent and importance of its relations either with the other specie or with the various agents or external bodies, specifically result from the source of the circumstances or of the conditions to which its reproduction is linked, and from the disposition of the organs used to that end” (*Ibid.*, p. 218-9).

<sup>26</sup> “The differences observed between the turn of ideas or the passions of man and woman correspond to those we have underlined in the organisation and the manner of feeling of the two sexes” (*Ibid.*, p. 241).

<sup>27</sup> J.-L. Moreau de la Sarthe, *Histoire naturelle de la femme, suivie d’un Traité d’Hygiène appliquée à son régime physique et moral aux différentes époques de la vie*. Paris: Duprat, Letellier & comp., 1803. On Moreau’s statements about women, see M. S. Staum, “Physiognomy and Phrenology at the Paris Athénée”, *Journal of the History of Ideas*, 1995, 56, 3, pp. 445-6. Virey also referred to Moreau’s book: J.-J. Virey, “Femme (morale)”, p. 572.

<sup>28</sup> J.-J Virey, “Femme (anthropologie et physiologie)”, p. 542.

<sup>29</sup> However, as T. Laqueur has pointed out, “the body generally, but especially the female body in its reproductive capacity and in distinction from that of the male, came to occupy a critical place in a whole range of political discourses” (T. Laqueur, “Orgasm, Generation, and the Politics of Reproductive Biology”, in C. Gallagher & T. Laqueur (eds.), *The Making of the Modern Body. Sexuality and Society in the Nineteenth Century*. Berkeley: University of California Press, 1987, p. 1) throughout the nineteenth century and the first half of the twentieth century. But since Comte and Mill both decided to ignore this aspect of the physiological debate about sexual equality, I do not need to consider it further.

<sup>30</sup> L. Schiebinger, “Skeletons in the Closet”, p. 66.

<sup>31</sup> The “Skeleton family” drawing is reproduced in *Ibid.*, p. 63.

<sup>32</sup> After all, Carpenter claimed that there was “no obvious structural difference in the nervous system of the two sexes (putting aside the local peculiarities of its distribution to the organs of generation)”, and when he argued for women’s intellectual inferiority, he did not ascribe it to any resemblance between children and women, but rather to “the inferior size of the Cerebral Hemispheres in the Female” compared with that in the male (W. B. Carpenter, *Principles of Human Anatomy*, p. 729).

<sup>33</sup> It is true that in the same letter, Mill proposed a strange thought experiment, assuming that, even if we postulated a relevant anatomical difference between children and adults, this difference would not explain the difference in intellectual powers: “If one were always able to keep one’s childhood brain, even as one developed one’s functions through education and by well-ordered and careful exercise, one would certainly not remain a child and might even become a very superior man, even while doubtless presenting notable deviations from the ordinary model of humanity” (Mill to Comte, August 30, 1843; in Haac [ed.], p. 183). Comte rightly objected that “if, according to your hypothesis, our cerebral apparatus never reached adult development, no imaginable amount of training would enable it to execute the complex reasoning of which it ultimately [would] become capable” (Comte to Mill, October 5, 1843; in Haac [ed.], p. 189). Now, it is possible that Mill went too far in his claim that the biological make-up of individuals was altogether irrelevant in the case at hand. However, such a shortcoming does not compromise his interpretation of the “childlike woman” analogy.

<sup>34</sup> To be sure, it is very unlikely that Blainville, a deeply conservative Catholic, had been prone to challenge the existing paternalistic social order. But, to the best of my knowledge, Blainville’s endorsement of the traditional conception of sexual roles did not explicitly appear in his biological writings.

---

<sup>35</sup> Another example is to be found three pages later, the “fundamental unit” for inter-specific comparison being “the adult and normal man” (A. Comte, *PP*, p. 703).

#### Appendix IV : The Phrenological Sources of Comte.

Comte's enthusiastic treatment of phrenology (or what he preferred to call "phrenological physiology") has received much attention in the secondary literature<sup>1</sup>. Yet, the details of how he became acquainted with the doctrine remain obscure. Accordingly, I will trace some of the likely sources of Comte's phrenological knowledge.

What is sure is that it would have been difficult for Comte to ignore the phrenological movement that swept France whilst he was trying to establish a new social philosophy based on the proper knowledge of the methods and results of the natural sciences<sup>2</sup>. Gall's ideas about the physiology of the brain were already discussed in the French medical community at the turn of the century, but the settling of the Austrian physician in Paris after his highly successful two years European tour in 1807 gave a new impetus to his work. Whilst continuing to lecture large audiences with the help of an impressive amount of skulls and casts<sup>3</sup>, Gall also had the opportunity to put in writing the sum of his conceptions, which endeavour resulted in the multi-volumes massifs of the *Anatomie et physiologie du système nerveux en général et du cerveau en particulier* (1810-1819)<sup>4</sup> and the *Recherches sur les fonctions du cerveau et sur celles de chacune de ses parties* (1822-1825)<sup>5</sup>.

However, the opinions as to the value of Gall's work remained divided. On the one hand, upper class circles found his ideas fashionable, even the more so given Gall's readiness to proceed to a phrenological analysis of the head of his hosts or table companions; but he also attracted individuals or groups with political agendas, such as the *Carbonari*, because of the materialist dimension (which he always tried to downplay) of his teachings; and a few social reformers (such as the prison expert B. Appert) seduced by the improvements his theory could bring to social organization, especially in judicial and penal matters.

On the other hand, the political authorities and the Catholic Church during the Empire and the Restoration considered with suspicion these ideas because of their unmistakable whiff of materialism, fatalism, and atheism (despite Gall's postulation of an organ of veneration). But it was certainly the reluctance of the scientific community to endorse his conceptions that thwarted most Gall's ambitions. The *Recherches sur le système nerveux en général et sur celui du cerveau en particulier*<sup>6</sup>, which he submitted with Spurzheim to the Institut in 1808, had a lukewarm reception. The report of the committee (composed of such scientific and medical figures as the zoologist G. Cuvier

or the alienist P. Pinel) in charge of reviewing Gall's *Mémoire* recognized his abilities as an anatomist and validated most of his views on the structure of the nervous system, but refused to consider the different physiological theses he upheld, because they declared that such topics were out of their field of expertise and, what was worse, because they contradicted the orthodox view, both in the scientific and religious senses of the term, of the workings of the brain and its relations to the soul.<sup>7</sup> The passing of time did not help to reduce this hostility, for when Gall put himself forward as a candidate for a seat at the Académie des sciences in 1821, he only got a positive vote from his friend E. Geoffroy Saint-Hilaire. Moreover, some anatomists and physiologists relentlessly pointed out the inaccuracy of many functional localization upheld by Gall. For instance, in his 1824 *Recherches expérimentales sur les propriétés et les fonctions du système nerveux dans les animaux invertébrés*<sup>8</sup>, Pierre Flourens, resorting to experiments on ablation and stimulation of pigeons' cerebral cortex and cerebellum, showed, contrary to what Gall maintained, that it was not sexual activity but voluntary motion that the cerebellum controlled. Accordingly, when he died in 1828, Gall's fame in the lay public and among a certain fraction of the intellectual and political élite was considerable, but his scientific works were still not widely accepted by his peers.

Surprisingly, the death of its founder and main exponent did not hinder the development of phrenology, quite the contrary. As most historians now agree, the advent of the July Monarchy after the 1830 revolution coincided with the opening of the "Golden age" of phrenology in France, which, according to G. Lanteri-Laura, "came to a close only with the election of Louis Napoléon-Bonaparte as president of the short-lived Second Republic" (G. Lanteri-Laura, *Histoire de la phrénologie*, p. 146) in 1848.

The signs of the growing success of phrenology were numerous. Firstly, Gall's theory started making new converts among the medical community, gaining support from renown physicians such as F. Broussais or J. Bouillaud (who welcomed the localisationist thesis of Gall) and leading psychiatrists such as J.-P. Falret and G. Ferrus (whose organic etiology of mental diseases fitted well phrenology's emphasis on the role of brain disorders in psychopathological affections). Secondly, a flow of pedagogical, educational, and polemical literature influenced by phrenology flooded the reading market. Thirdly, the diffusion of the phrenological doctrine benefited from the establishment of several institutions that were deliberately designed to spread its teachings or put in practice the social policies it recommended: the creation of the *Société Phrénologique de Paris* in 1831 (which had around 200 members and started publishing its

own periodical, the *Journal de la Société Phrénologique de Paris*, in 1832), of the *Institut Orthophrénique* (an educational facility run in accordance with phrenological principles by the physician F. Voisin) in Issy-les-Moulineaux, and even of a phrenological museum located in Paris (1837), gave phrenology a public face. Finally, the involvement of some phrenologists in different scientific enterprises (for instance A. Dumoutier's participation in J. Dumont d'Urville's 1837 expedition in the seas of the southern hemisphere) and social projects (Appert's enduring contribution to prison reform, for example) testified to its practical and political usefulness.

Yet, despite these achievements, a strong opposition still prevailed among anatomists and physicians. First of all, Gall's craniometry, the weakest part of his system indeed, was held by many practitioners as resting on the highly conjectural hypothesis according to which the bones of skull bore the imprint of the shape of the brain. Secondly, his physiology attracted much criticism from those who maintained a unitarian conception of the brain, functioning as a whole in which no further anatomical distinctions could be made besides that of the cortex, the cerebellum, the nuclei of the cerebral basis and the cerebral trunk. Pierre Flourens's *Examen de la phrénologie* (1842)<sup>9</sup> soon became, for the wealth of anatomical, physiological, and clinical observations it contained, the scientific manifesto of this view, and elicited no other responses from the phrenologists than a slavish repetition of Gall's pronouncements. This inability to face empirical objections and to keep pace with the advance of nervous anatomy and physiology greatly contributed to the progressive disappearance of phrenology in the late 1840s from the scientific scene, and its extinction as an intellectual and social movement in the following years.

Now, if one keeps in mind that the formative years of Comte as a philosopher started with his expulsion from the *Ecole polytechnique* in 1816 and came to an end with the writing of the *Cours de philosophie positive* in the 1830s, one realizes that this period was almost contemporary with that of the most active diffusion of phrenology in France described above. But what were the exact sources of Comte's familiarity with phrenology? As shown in Appendix II, Comte's project of an exhaustive account of the philosophy and methods of the various sciences, which eventually resulted in the publication of the *Cours*, led him to gain a proper knowledge of the life sciences. And it probably was whilst doing this that Comte first got acquainted with phrenological doctrines.

Although nothing indicates that he attended any of Gall's or Spurzheim public or private lectures, an analysis of his private correspondence in the 1820s and of his circle of intellectual relations sheds some light on the likely origins of his phrenological knowledge. Firstly, during his period of collaboration with Saint-Simon, who was on good terms with Gall himself, Comte came to know – sometime in 1816 or 1817 – Etienne-Marin Bailly (also known as Bailly de Blois)<sup>10</sup>, a catholic physician and close associate of Saint Simon and the Saint Simonians, whom he met when the latter “was studying medicine and was Gall's pupil” (A. Comte to G. d'Eichtal, June 6, 1824; in A. Comte, *Correspondance générale et confessions. Tome I, 1814-1840*, p. 97)<sup>11</sup>. After having lost track of him for years, Comte seems to have wished to renew his ties with Bailly when this “cunning physician” and “young physiologist of great merit” (A. Comte to E. Tabarié, July 17, 1824; *Ibid.*, p. 101) published a provocative brochure entitled *L'Existence de Dieu et la liberté morale, démontrées par des arguments tirés de la doctrine du docteur Gall* (1824)<sup>12</sup>. Given the hostility of the Church to the materialistic and fatalistic aspects of phrenology, such an attempt might have seemed odd. As far as he was concerned, Comte thought that Bailly's book was just a clever “mystification” (A. Comte to G. d'Eichtal, August 5, 1824, *Ibid.*, p. 109) intended to defuse the attacks of the religious party. Although he praised Bailly for his dexterity when dealing with the question of the existence of God (by underlining Gall's postulation of an organ of veneration), he criticized his treatment of moral liberty because Bailly stuck to the outdated and anti-scientific distinction between intelligence or organisation and the soul, a stance he judged not radical enough. When he realized that Bailly's religious commitment was genuine, Comte's enthusiasm quickly cooled down and he eventually came to consider Bailly a mere impostor. Accordingly, when Bailly presented, in the Saint-Simonian volume *Opinions littéraires, philosophiques, et industrielles* (1825)<sup>13</sup>, his views on the eminent role of the physician in industrial societies, Comte bluntly commented that even a “literary hack” would have been ashamed of having written such a bad piece on “the relation between physiology and politics” (A. Comte to G. d'Eichtal, December 10, 1824; in A. Comte, *Correspondance générale et confessions. Tome I, 1814-1840*, p. 145). Notwithstanding this ultimate break, Comte's relation with Bailly, who was “one of the essential agents of the diffusion of phrenology in the circles of utopian socialism” (M. Renneville, *Le langage des crânes*, p. 106) in the late 1810s and the brief revival of it in the mid 1820s, illustrates his first-hand acquaintance with leading figures of the phrenological movement.

As M. Pickering suggests, Blainville might also have stimulated Comte's interest in phrenology<sup>14</sup>. Despite his conservatism in political and religious matters, Blainville seems to have "supported Gall and the phrenological school" (G. Lanteri-Laura, *Histoire de la phrénologie*, p. 162). For instance, phrenology was the subject of his 1824 lectures at the Athénée, "a course that Comte probably attended" (M. Pickering, *Auguste Comte*, p. 303) and which provided a fair and balanced account of Gall's work. Similarly, the psychiatrist B.-A. Morel recalled that in his teaching at the Sorbonne in 1839, which he attended, Blainville introduced quite favourably Gall's ideas to his audience<sup>15</sup>. This lenient acknowledgment of Gall's merits was eventually put in print when Blainville's lectures were published a few years later as his *Histoire des sciences de l'organisation et de leurs progrès comme base de la philosophie* (1845)<sup>16</sup>. Assessing Gall's scientific contributions to biology on a par with those of the De Jussieu family, Vicq d'Azyr, Pinel, Bichat, Broussais, Lamarck, and Oken, Blainville heralded Gall as the one

"who gave the study of the nervous system its only basis, the only direction that would guarantee its progresses, hasten them, and lead them to the possible result, the *physiology of the brain*" (H. de Blainville, *Histoire des sciences de l'organisation*, III, p. 269).

Blainville admitted that the methodological approach adopted by Gall, which postulated for each function an organ, logically required that all psychological faculties depended on a material substratum. However, he parted from the Viennese physician when it came to localize them in the brain, since he held the anatomy of the brain itself – which was of a highly homogeneous constitution – prevented such localizations of the higher intellectual and moral faculties.

"One must necessarily admit this substratum with Gall; but it cannot be divided into organs, as he wanted it. It is composed of parts that form a whole, and to these parts faculties are associated" (*Ibid.*, p. 328).

But what Blainville praised most in Gall was that the latter's endorsement of the method of natural history. First of all, Gall's distinction between the dispositions shared by animals and man and those proper to the latter was, said Blainville, "worthy of a genius" (*Ibid.*, p. 331). Moreover, by choosing to determine what were the essential psychological dispositions by focusing on behaviour, Gall opened a new path to the knowledge of the intellectual and moral faculties. In this last regard, he held Gall to be the "first naturalist physiologist" (*Id.*). Finally, and even if he criticized its cranioscopic element, Blainville emphasized that Gall's theory, which relied on anatomy, physiology, and natural history, had the noticeable merit of "having brought back the unity among these sciences we have seen subdivided and divergent" (*Ibid.*, p. 334). Given that nothing prevents us from

assuming that this final appreciation of Gall's phrenology had been entertained by Blainville for many years before it was voiced in his *Histoire des sciences de l'organisation*, it is also very likely that it either initiated or comforted Comte's early interest for Gall's ideas.

As an additional piece of evidence of Blainville's influence on Comte's cultivation of phrenology, it is also worth noting that the first extent trace of Comte's articulated reflections on the subject appeared in a letter to his friend Valat, dated September 8, 1824, that is the very year of Blainville's lectures on phrenology at the Athénée. This long letter responded to Valat's disputation of Comte's claim that physiology had recently become a positive science and to the former's angry and indignant objections against Gall's doctrine. It testified to the detailed knowledge Comte had of the main tenets of Gall's theory (Innateness, cerebral Localization, and Modularity of affective, moral, and intellectual dispositions), of its importance in the long term history of the science of man, and some of its shortcomings, all elements that would constitute the backbone of Comte's analysis of phrenology in the following years. The remarks concluding this letter stated unambiguously his appreciation of phrenology, for Comte prophesised that this theory would "mark an epoch in the history of the human mind":

"it is almost the common opinion, either openly expressed or secretly upheld, of all the present physiologists worthy of that name; (...) a doctrine does not develop itself during twenty years, despite the fact that it has been ridiculed and subjected to the most odious prejudices, if it does not contain something of value (...). In brief, my opinion is that physiology has become nowadays an entirely positive science, not only despite Gall's doctrine, but partly because of that very doctrine" (A. Comte to X. Valat, September 8, 1824; in A. Comte, *Correspondance générale et confessions. Tome I, 1814-1840*, p. 126-7)<sup>17</sup>.

This verdict remained that of Comte for the rest of his career and found its most developed exposition in the *Cours de philosophie positive*. But it also appeared in some of Comte's earlier publications, namely his *Considérations philosophiques sur les sciences et les savants* (1825)<sup>18</sup> and his review (1828)<sup>19</sup> of F.J.V. Broussais's *De l'Irritation et de la Folie*<sup>20</sup>.

This last piece suggests another possible source of Comte's phrenological knowledge, namely the physician Broussais<sup>21</sup>. For, besides developing a localisationist approach to diseases (he argued that most pathologies were caused by lesions of the digestive system which were themselves the result of an excess of irritation; mental disorders, he claimed, depended on a pathological irritation of the brain) known as "physiological medicine" and defending the continuity of normal and pathological states (what later came to be known, partly due to Comte, as "Broussais' principle), Broussais

was also one of the most prominent advocates of phrenology in the 1830s. Because of his position in the French intellectual landscape (he was both Professor at the Paris Faculté de Médecine and a member of the prestigious Académie des sciences morales et politiques), he played a crucial role in pleading the cause of the new cerebral physiology<sup>22</sup>.

Broussais came to phrenology progressively, mitigating more and more his criticisms against Gall's theory with the years. As J.-F. Braunstein recounts<sup>23</sup>, before *De l'Irritation et de la Folie* (1828), Broussais agreed with Gall on the dependence on the brain of the affective, moral, and intellectual functions, but criticized his neglect of the influence of the other viscera on mental phenomena. Then, in *De l'Irritation et de la Folie*, Broussais recognized the value of Gall's works on the functions of the brain, but was wary of the inflation in localisations, which he thought multiplied unnecessarily the number of organs to match psychological dispositions whilst leaving unexplained the *consensus* existing between them. Eventually, these reservations faded away and Broussais came to endorse a version of phrenology greatly indebted to Gall and Spurzheim, as his *Cours de phrénologie* (1836)<sup>24</sup> illustrated. In fact, Broussais almost repeated Spurzheim's classification of the different faculties without adducing any new evidence for their localisation in the brain. But his intellectual prestige made up for his lack of originality: twenty five years or so after the Institut's refusal of Gall's conceptions and fifteen years or so after his failure at entering the Académie des Sciences, the phrenological commitment of a leading medical figure gave this cerebral physiology the appearance of a subject worthy of scientific interest, even if Broussais often used phrenology as a philosophical weapon to support his materialism and his atheism.

Accordingly, if Broussais' phrenological propaganda played a role in Comte's intellectual history, it is very likely to have consisted in being an additional stimulus for his study of the works of Gall and those who followed him. Even the more so if one keeps in mind that Comte was not merely a reader of Broussais' writings, as J.-F. Braunstein points out<sup>25</sup>, but also a personal acquaintance of the physician, and one of his fellow members at the Société Phrénologique de Paris<sup>26</sup>.

The impact of Comte's early and sustained exposure to biology, phrenology included, prompted changes in the exposition of his own ideas. For when Comte reopened his lessons on positive philosophy in early January 1829, which were first started in April 1826 but stopped almost immediately because he had been struck by a violent bout of madness, he decided to increase the number of lectures on the organic sciences

(from 10 to 12) to the detriment of those dealing with the inorganic sciences (Chemistry was reduced from 10 to 6 lessons). His special interest for the study of phrenology and the physical basis of moral phenomena also appeared in his decision to devote four lectures on the “intellectual and affective” part of physiology, “which indicates”, as M. Pickering notes, “how important phrenology had become for him” (M. Pickering, *Auguste Comte*, p. 420). This importance eventually crystallised in Comte’s *Cours de philosophie positive*, whose Forty-Fifth Lesson was dedicated to “General Considerations on the Positive Study of Intellectual and Moral, or Cerebral, Functions”.

<sup>1</sup> G. Lanteri-Laura, *Histoire de la phrénologie*, Chapter Three (“L’expansion de la phrénologie”), pp. 141-44 ; J.-F. Braunstein, “Antipsychologisme et philosophie du cerveau chez Auguste Comte”, *Revue internationale de philosophie*, 1998, 1, 203, pp. 7-28 (esp. 16-25) ; and L. Lévy-Bruhl, *The Philosophy of Auguste Comte*, Book II, Chapter Five (“Psychology”), pp. 194-205, offer a complete review of Comte’s treatment of phrenology in the *Cours de philosophie positive* and the *Système de politique positive*, whereas E. Littré, *Auguste Comte et la philosophie positive*, Third Part, Chapter Three (“Du tableau cérébral, ou modification apportée par M. Comte au système phrénologique de Gall”); R. Vernon, “The Political Self: Auguste Comte and Phrenology”, *History of European Ideas* 1986, 7:3, pp. 271-86; J. Grange, *La philosophie d’Auguste Comte*, Third Part (“Le nouveau discours de la méthode”), “Le tableau systématique de l’âme”, pp. 378-387 ; and L. Clauzade, “Le statut épistémologique du tableau cérébral et la notion de type chez Comte”, in M. Bourdeau & F. Chazel, eds., *Auguste Comte et l’idée de science de l’homme*. Paris : L’Harmattan, 2002, pp. 111-30, mostly analyse the *Système*.

<sup>2</sup> See II, n. 10 for secondary literature.

<sup>3</sup> Gall lectured at the Athénée just after his arrival in Paris, from December 1807 to February 1808 (where he also offered a course on General Physiology from 1812 to 1815, and a set of lectures on the “Philosophy of the intellectual faculties in 1825-1826), made public presentations at the Société de Médecine, and performed dissections at the Muséum d’Histoire Naturelle. However, as it was a common practice at the time, he came to prefer to lecture in his home for a happy few. Spurzheim was also hired twice by the Athénée administrators to lecture on “the nature of moral and intellectual man applied to social institutions” (1818-1819) and “anthroplogy” (1831-1832). On this, see M. S. Staub, “Physiognomy and Phrenology at the Paris Athénée”, esp. p. 452, and M. Renneville, *Le langage des crânes*, Chapter Two (“Entre Savoirs et Politiques”).

<sup>4</sup> See II, n. 14.

<sup>5</sup> See II, n. 15.

<sup>6</sup> F.J. Gall & J.G. Spurzheim, *Recherches sur le système nerveux en général et sur celui du cerveau en particulier, mémoire présenté à l’Institut de France, le 14 mars 1808, suivi d’observations sur le rapport qui en a été fait à cette compagnie par ses commissaires*. Paris, F. Schoell & H. Nicolle, 1809.

<sup>7</sup> *Rapport sur un mémoire de MM. Gall et Spurzheim, relatif à l’anatomie du cerveau, Institut de France, classe des sciences mathématiques et physiques, séances du 25 avril et 2 mai 1808*, in *Bibliothèque médicale*, 1808, XXI, pp. 3-42 and 133-57. On the details of the report, see G. Lanteri-Laura, *Histoire de la phrénologie*, pp. 128-31.

<sup>8</sup> P. Flourens, *Recherches expérimentales sur les propriétés et les fonctions du système nerveux dans les animaux invertébrés*. Paris : Crevot, 1824.

<sup>9</sup> P. Flourens, *Examen de la phrénologie*. Paris: Paulin, 1842.

<sup>10</sup> On Bailly, see M. Renneville, *Le langage des crânes*, pp. 106-8.

<sup>11</sup> A. Comte, *Correspondance générale et confessions. Tome I, 1814-1840*. Edited, with an introduction, by P. E. de Berrêdo Carneiro and P. Arnaud. Paris – La Haye: Mouton, 1973.

<sup>12</sup> E.-M. Bailly de Blois, *L’Existence de Dieu et la liberté morale, démontrées par des arguments tirés de la doctrine du docteur Gall*. Paris: Delaunay, 1824. Comte’s copy, signed by Bailly, is still preserved in his library at the Maison d’Auguste Comte in Paris.

<sup>13</sup> L. Haking, H. de Saint-Simon, O. Rodringues, J.-P. Duvergier *et alii*, *Opinions littéraires, philosophiques, et industrielles*. Paris: Galerie de Bossange, 1825.

<sup>14</sup> M. Pickering, *Auguste Comte*, p. 303. In one of his letter to Mill, Comte indeed recalled that Blainville, “for the last twenty-five years, has always devoted several lessons of his yearly courses to the exposition and discussion of Gall’s work, looking upon his general principles as having been definitely established as part of science” (Comte to Mill, June 19, 1842; in Haac [ed.], p. 80-1).

<sup>15</sup> For Morel's testimony, see G. Lanteri-Laura, *Histoire de la phrénologie*, p. 159.

<sup>16</sup> H. de Blainville, *Histoire des sciences de l'organisation et de leurs progrès comme base de la philosophie*. Rédigée d'après ses notes et ses leçons faites à la Sorbonne de 1839 à 1841, avec les développements nécessaires et plusieurs additions, par F. L. M. Maupied. Three Volumes. Paris & Lyon : Librairie Classique de Perisse Frères, 1845. The chapter on Gall (Section IV) is in the third volume, pp. 268-334. The editing work of Maupied, a Catholic abbé, became the subject of much controversy when it was realized that he had distorted some of Blainville's historical views for apologetic purposes. With respect to Gall, it seems that Maupied attempted to downplay the originality of his physiological approach and the anatomical improvements he contributed to the knowledge of the nervous system. Comte was one of the victims of Maupied's religious zeal: see E. Littré, *Auguste Comte et la philosophie positive*, Third Part, Chap. XI.

<sup>17</sup> Comte was aware of Flourens' criticism of Gall's phrenology but discarded them for methodological reasons: "His famous experiments are regarded as false and made with too much precipitation, ; the phenomena he has considered as radical merely happen to be instantaneous abnormalities" (A. Comte to G. d'Eichtal, August 5, 1824; in A. Comte, *Correspondance générale et confessions. Tome I, 1814-1840*, p. 105). Comte also blamed Flourens for the lack of consistency in his plan of experiments, within which no region of the nervous system dealing with animal life was ascribed to the intellectual and affective functions, and which Comte called "an odd neglect" (*Id.*). In fact, it is likely that Comte drew on Gall's own dismissal of Flourens' experiments in the third (pp. 379-415) and sixth volume (pp. 213-88) of the *Recherches sur les fonctions du système nerveux*. Among many other points he raised, Gall insisted that Flourens' invasive procedures of ablation and mutilation were not conclusive since a local injury or lesion did interfere with the nervous system as a whole. Hence it was not possible to isolate precisely one organ, so as to identify its function, because the very process of doing so produced global disorders in the brain. On this, see R. M. Young, *Mind, Brain, and Adaptation*, pp. 46-53.

<sup>18</sup> A. Comte's *Considérations sur les sciences et les savants* were first published in 1825, as a series of three articles in the seventh (November 12<sup>th</sup>), eight (November 19<sup>th</sup>), and tenth (December 3<sup>rd</sup>) issues of *Le Producteur*. Reviewing the recent development of the branch of physiology that dealt with the affective and intellectual functions, Comte offered the following account: "All those who are truly in tune with their age know as a matter of fact that physiologists today consider moral phenomena in absolutely the same spirit as all other animal phenomena. Very extensive work has been undertaken in this area, and has been enthusiastically pursued for more than twenty years;; positive conceptions, more or less fruitful, have come into being; schools have formed spontaneously to develop them and propagate them; in short, all the signs of human activity have been displayed unequivocally with regard to moral physiology. It is useless here to take sides for or against any of the different opinions which today fight for dominance about the kind, the number, the extent, and the mutual influence of the organs assignable to the different functions, whether intellectual or affective. No doubt science has not yet found its definitive foundations in this regard; and the only things solidly established here are a few generalities that are insufficient, though very valuable. But the very fact of this diversity of theories, which indicates an inevitable certainty in any emerging science, clearly establishes that the great scientific revolution has taken place in this branch of our knowledge, as in all the others, at least in the minds which in this respect form the avant-garde of the human race, and which sooner or later are followed by the mass" (quoted from A. Comte, *Early Political Writings*. Edited and translated by H. S. Jones. Cambridge: Cambridge University Press, pp. 157-8). Even if Gall was not mentioned, Comte implicitly assumed that his phrenology defined the methodological limits within which the different theories of the workings of the brain could be developed.

<sup>19</sup> In his review of Broussais' treatise, Comte repeatedly underlined the contribution of Gall to the advent of a positive (i.e. physiological) study of intellectual and affective functions: "The works of M. Gall and his school have singularly strengthened it, and above all imparted to this new and latest portion of physiology a noble quality of accuracy, by providing a determinate basis for discussion and investigation" (*Ibid.*, p. 229). In this article, Gall was praised by Comte, on various accounts, no less than six times, that is almost once every couple of pages.

<sup>20</sup> F.J.V. Broussais, *De l'Irritation et de la Folie, ouvrage dans lequel les rapports du physique et du morale de l'homme sont établis sur les bases de la médecine physiologique*. Paris: Delaunay ,1828.

<sup>21</sup> In a letter to Mill, Comte also mentioned ,in relation with the diffusion of phrenology in France, the name of Broussais, even if he judged that the physician "had embarked on this at too advanced an age" and got "lost in useless and absurd researches concerning the initial localization [of functions of the brain]" (Comte to Mill, June 19, 1842; in Haac [ed.], p. 81).

<sup>22</sup> On Broussais and phrenology, see J.-F. Braunstein, *Broussais et le matérialisme. Médecine et philosophie au XIX<sup>e</sup> siècle*. Paris: Méridiens Klincksieck, 1986, Part II, Chapter III ("Une phrénologie philosophique"); M. Renneville, *Le langage des crânes*, pp. 108-16.

<sup>23</sup> See J.-F. Braunstein, *Broussais et le matérialisme*, pp. 155-60.

---

<sup>24</sup> F.J.V. Broussais, *Cours de phrénologie*. Paris: J.-B. Baillière, 1836. The *Cours* is the transcription of Broussais' lectures on phrenology given at the Paris Faculté de Médecine the same year.

<sup>25</sup> See J.-F. Braunstein, *Broussais et le matérialisme*, Part III, Chaptr II ("Broussaisisme et Positivisme"). Among the different books of Broussais Comte had in his library, one finds the *Cours de phrénologie*.

<sup>26</sup> On Comte's brief engagement with the Société Phrénologique de Paris, see M. Pickering, *Auguste Comte*, p. 420; M. Renneville, *Le langage des crânes*, p. 135. Broussais and Comte may have met through Saint-Simon, whose personal physician was the former. In January 1829, Broussais, who had been genuinely impressed by Comte's review of *De l'Irritation et de la Folie*, attended the re-opening of Comte's lectures on positive philosophy.

## Appendix V – A Historical Account of Mill’s Acquaintance with Phrenology.

Whereas Comte’s familiarity with, and estimate of, phrenology is easy to locate in his writings and has received much attention from commentators, the extent of Mill’s knowledge of the new cerebral physiology is as difficult to assess as his acquaintance with biology<sup>1</sup>. Except for his letters to Comte, one finds very few references to phrenology or phrenological authors in his correspondence. In the submissive tone characteristic of Mill in the beginnings of the exchange, he welcomed Comte’s advice with respect to any appropriate reading in “physiological phrenology” (Mill to Comte, December 18, 1841; in Haac [ed.], p.42), for what he had read so far had been of no use.

“In our country, phrenology has hardly been practiced except by men with less than mediocre minds, to judge by what I have read of their writings, and I must admit that I long regarded this field, at least in its present state, as unworthy of occupying the mind of a true thinker. I have abandoned this notion only when I learned from your third volume that you believe in phrenology, at least in its basic principles” (Mill to Comte, February 25, 1842; *Ibid.*, pp. 53-4)

The little that can be guessed from this statement is that, although his intellectual interests did not draw him to the subject, it is very likely that Mill had been exposed to phrenological agitation before he started corresponding with Comte. In fact, it would be surprising that he had not, for the first third of the nineteenth-century witnessed a frantic diffusion of phrenological doctrines in the British Isles<sup>2</sup>.

As early as 1803, the Scottish philosopher Thomas Brown rhetorically asked in his review of Charles Villers’ account of phrenology for the *Edinburgh Review*, “Of Dr Gall, and his skulls, who has not heard?”<sup>3</sup>, thereby evidencing the penetration of phrenological ideas in the cultural, scientific, and medical elite of the British Isles, and especially in Scotland. However, even if several accounts of the state of the Continental debate over Gall’s conceptions were published in the following years (in particular, a review of Gall and Spurzheim’s 1808 *Mémoire* presented to the Institut de France), it was only after 1815 that phrenology became a highly popular subject of interest, following Spurzheim’s lectures tour throughout Britain and the publication of his first book in English, the *Physiognomical System of Drs. Gall and Spurzheim* (1815)<sup>4</sup>.

Just as in France, phrenology evoked much controversy because of its supposed materialistic and atheistic leanings. The opposition mostly originated from the upper-classes of society and the established Church, but was also supported by naturalists and physicians who questioned Gall’s anatomical findings and his physiological conclusions<sup>5</sup>. The consequence of such public exposure was that the general public quickly became acquainted with the basic tenets of phrenology and that it attracted many individuals

belonging to the rising middle-class to the “new science of human nature”. As a result, a considerable number of local phrenological societies were established all over the country during the 1820s and 1830s (The Edinburgh Phrenological Society in 1820, the London Phrenological Society in 1823, the Wakefield Phrenological Society in 1825, the Manchester Phrenological Society in 1830, the Aberdeen Phrenological Society in 1838, the Birmingham Phrenological Society in 1838, etc.), as well as a national body (the British Phrenological Association, in 1838) which was supposed to compensate for the refusal of the British Society of the Advancement of Science to accept phrenology among one of its sections. Periodicals were also created to spread phrenological doctrines (the *Transactions of the Edinburgh Phrenological Society* in 1821, and the *Phrenological Journal* in 1823).

The public success of phrenology was primarily due to its ability to serve as a support for many different, and sometimes contradictory, social or personal interests. Some commentators have insisted on its appeal for more or less radical reformers who wanted to replace the existing social order grounded on inherited privileges, ancient customs, and theological conceptions, with a new organization of society in accordance with individuals’ natural capacities and merits, so as to fulfil the aspirations of the commercial middle-class and those of the higher strata of the working-class<sup>6</sup>, most notably artisans and shop-keepers. This social endeavour came to the forefront of the social debate with the publication of George Combe’s *Constitution of Man* (1828), a phrenology-based manifesto of Victorian naturalism which encountered even more editorial success than Robert Chambers’ *Vestiges of Creation* (1844) or Charles Darwin’s *Origin of Species* (1859). And, just as in France, education, penal reform, or the treatment of the insane figured prominently on the agenda of the phrenologists. But whereas Combe’s discourse, which mixed an evocation of natural laws and self-help thought, advocated a secularized conception of society, other phrenologists found in Gall’s ideas support for more orthodox views, including additional evidence for the existence of a Creator, as testified by Gall’s organ of veneration. Hence the development of Christian phrenological societies. Finally, as J. Van Whye has recently argued<sup>7</sup>, it was also the case that many individuals involved in the business of diffusing and promoting phrenology contributed to the movement with the hope that the scientific and moral authority conferred on them by this new science of human nature would enhance their personal status. In any case, whatever the motivations of those engaged in phrenology during the 1820s and 1830s, their success in publicizing and popularizing their achievements or

proposals was undeniable: by 1836, as A. McLaren recalls, “thirty Phrenological Societies had been created, 64,000 copies of phrenological works sold, and over 15,000 plaster heads or bust casts” (A. McLaren, “Phrenology: Medium and Message”, p. 94)<sup>8</sup>. On the face of it, it would hardly be imaginable that Mill had not heard of “Dr Gall, and his skulls”, to use Brown’s address, during these most intense years of phrenological agitation. Yet, when it comes to assess the extent of Mill’s awareness of, or involvement in, phrenological debates, the paucity of textual evidence warrants only a highly conjectural account.

Mill’s first encounter with phrenology, at least in an institutional setting, seems to trace back to his boyhood visit to France in 1820-1<sup>9</sup>, while he was attending the logic lectures of Joseph-Diez Gergonne<sup>10</sup>, a professional mathematician and holder of the Chair in astronomy at the University of Montpellier since 1816, in Comte’s hometown. In his notes for these lectures, Mill recorded Gergonne’s favourable comments on Gall’s hypothesis, which “deduces all the habits, all the propensities of an individual, from the organization of his brain”:

“Up to a certain point, I do share his opinion, since the brain is the seat of the soul, why would not the development of a particular organ of the brain produce a similar development in a particular faculty of the mind?” (J. S. Mill, *Journal and Debating Speeches*, pp. 196-7)<sup>11</sup>.

On the other hand, Gergonne, “a very accomplished representative of the eighteenth century metaphysics” (J.S. Mill, *Autobiography*, p. 59) as Mill recalled, was more guarded on the alleged possibility of character reading usually associated with phrenology.

What the young Mill made of this, we do not know. But it is certainly interesting to note that this first public exposure to phrenology, received through the altogether favourable appraisal of a reputed academic figure, may have prompted the young man to think that some elements of the phrenological doctrine were worth considering. However, such an accommodating stance may have been difficult to reconcile with his father’s sensationalist approach to mental phenomena, even the more so if it is recalled that it was at the root of his own son’s upbringing. For instance, in his article on “Education” for the fifth supplement of the *Encyclopaedia Britannica*, James Mill grounded his pedagogic reflections on the omnipotence of the laws of association of ideas as introduced by Hobbes, Locke, Hume, Condillac, and Hartley, and he sided with Helvétius in the debate over the existence of natural intellectual inequalities: all cognitive differences between individuals, claimed James Mill, were the result of differences in education, and not due to differences in cerebral constitution.

“This much, therefore, may be affirmed on the side of Helvétius, that a prodigious difference is produced by education; while, on the other hand, it is rather assumed than proved, that any difference exists, but that which difference of education creates” (J. Mill, “Education”, p. 20)<sup>12</sup>.

The empiricist psychology of his father and its emphasis on the formative influence of the circumstances over human character sat ill, to say the least, with Gall and Spurzheim’s innatist theory of the mind<sup>13</sup>.

Yet, even within the Utilitarian circle in which the Mills evolved, the reception of phrenological doctrines was not entirely hostile<sup>14</sup>. The leading figure of the movement, Jeremy Bentham, had much to praise in Gall’s *Anatomie et physiologie du système nerveux en général*, as he told his Russian friend Pavel Chichagov in 1821:

“Have you read Doctor Gall’s new doctrine? It contains the truest philosophie all experimental, practical, and applicable to life. It affords true knowledge of your organisation, faculties and aptitude to all sorts of things and transactions. (...) I have read it from one end to the other with the greatest pleasure I consider it as one of the most philosophical works of our times. Every thing is experience, observation and practicable in it. It may be put in the compleatest harmony with Legislation as you have traced it. All that has been published upon Gall’s system before this, is either false or wrong or imperfect, but since the publication of his own work he maked [sic] converts every day and would have done great many more had his work not been so voluminous and so dear” (J. Bentham to P. Chichagov, March 12, 1821; in J. Bentham, *The Collected Works of Jeremy Bentham. The Correspondence of Jeremy Bentham*. Vol. 10, pp. 313-4)<sup>15</sup>.

On the other hand, the remunerated palpations and dramatized skulls and casts presentations of the phrenologists and their utterly dogmatic advocacy of the truthfulness of the doctrine could not fail to attract Bentham’s legendary irony. For instance, in his *Rationale of Judicial Evidence*, when he wanted to ridicule the various means used by English lawyers to restore one’s individual competency with regard to evidence (to qualify as a witness in a trial for example), Bentham ridiculed their whole strategy by pretending that it could be based on a phrenological analysis of the organs of “trustworthiness” and “untrustworthiness”:

“The theory of trustworthiness, untrustworthiness, and restoration of trustworthiness – of health, disease, and mode of cure, so far as concerns the branch of the pathologico-psychological system here in question, has revealed itself here and there, in unconnected rudiments and fragments, to the sagacity of English lawyers. But, with shame be it spoken, never yet was it formed into a complete and consistent whole; never was this interesting branch of the science of evidence placed upon its proper basis, till the genius of Dr. Gall arose, and dazzled with its effulgence the eyes of astonished Europe. By the discoveries of that great man, we are at length enabled to understand what English lawyers have been at” (Jeremy Bentham, *The Rationale of Judicial Evidence*, p. 433).<sup>16</sup>

This scathing instance of Bentham's murderous rhetorical skills launched at the expenses of phrenology (and English law) might well have struck the attention of the first editor of the *Rationale*, namely ... the young John Stuart Mill<sup>17</sup>.

The second textual trace of Mill's familiarity with phrenology consists in an allusion to a quotation drawn from Combe that was supposed to illustrate a speech on perfectibility given by Mill at the London Debating Society in May, 1828: it allegedly illustrated the power of public opinion and its role in the taming of human passions<sup>18</sup>. One of Combe's books was later mentioned in a letter to John Pringle Nichol (Mill to John Pringle Nichol, 7 Oct., 1835), but no precision was given as to what book of his it was<sup>19</sup>. Moreover, Mill merely stated his project of reading the book and not the fact that he had read it:

"I shall read Combe's book with a pleasure increased by receiving it from you. Phrenology, no doubt, may be to a certain extent reconciled with analytical psychology, that is, if it can be discovered that certain nervous peculiarities, affecting the kind or the intensity of our sensations, have to do with peculiar conformations of the brain. (...) It is, I believe, ascertained that the nerves of external sense terminate mostly, if not wholly, in the cerebrum, those of internal in the cerebellum and spinal marrow" (Mill to John Pringle Nichol, 7 Oct., 1835; in J. S. Mill, *Earlier Letters*, p. 275).

Besides a bland acceptance of a dependence of mental phenomena on cerebral ones, one could hardly infer something about Mill's views on phrenology from such a scanty piece of information. To be sure, Mill also added in the same letter that phrenologists had some evidence in favour of their theories, but it in no way suggested a complete agreement: "Thus, for instance, what they say about their "organ of amativeness" has some foundation, because we know that nymphomania can be traced to inflammation of the cerebellum" (*Id.*). However, from what Mill said, it is difficult to grasp which phrenological claim he thought was corroborated by that clinical observation: did it confirm the phrenologists' general theory of cerebral organs or just that relating to the "organ of amativeness"? Did the fact that one was dealing with pathological evidence alter the nature of phrenological conclusions with regard to the normal functioning of the brain? Mill himself was indecisive: "What or how much can be inferred from this I do not know" (*Id.*). However, there was one feature of phrenological theory about which he had no doubt, namely its utter lack of proper evidential support:

"But the difficulty I feel *in limine* about phrenology is the insufficiency of the induction" (*Id.*).

Mill was here referring to Gall's method of picking out public and historical figures known for one of their marked psychological traits and his attempt to find on their skull

the anatomical confirmation of the presence or absence of the organ responsible for that trait. Firstly, Mill objected, Gall and his followers' exclusive reliance on overt behaviour – the public face of one's personality – ignored the fact that the individual might have displayed other more prominent traits in private: it was possible that, say, a political leader had been cruel in his handling of public matters but excessively benevolent to his friends or relatives. Secondly, Mill questioned the reliability of the anatomical sample on which phrenologists based their conclusions, that is the skulls of public or historical figures:

“many of the skulls they argue from are not sufficiently authenticated as belonging to the persons to whom they ascribe them” (*Id.*).

A perfect illustration of such a shortcoming, Mill claimed, had been offered by the infamous controversy over Raphael's skull<sup>20</sup>. In his *Fonctions du cerveau*, Gall recalled how, presented with the cast of an unknown skull by his colleague Dr Scheel, he identified on it very pronounced traces of the organs of Constructiveness and Imitation. The craniological analysis was indeed a success, for Scheele declared that it was a cast made from the skull of Raphael preserved by the fine arts academy of Saint Luke<sup>21</sup>. Thereafter, many phrenologists, including Combe, used this story as an illustration of the power of phrenological analysis. Unfortunately, when Pope Gregory the Sixteenth ordered the opening of Raphael's grave so as to put a halt to the phrenologists' impious treatment of one of the most distinguished artists associated with the Vatican, the skeleton was found to be complete. Consequently, the skull of the Saint Luke's Academy could not be that of Raphael<sup>22</sup>.

The letter to Pringle, even if it is far from providing us with elements from which to infer the principled position – if any – Mill might have adopted concerning phrenology, tells us at least one thing: by Mill's own admission, his “opinion on the subject” in the mid-1830s was “not that of a competent judge” (*Id.*). But short of being a “competent judge” of phrenology, it may still be interesting to know whether Mill was at least an “informed witness”. In this regard, one may have hoped that the consultation of the list of Mill's library at Somerville College, Oxford, might bring some interesting results. Unfortunately, it has proved to be of no avail, since it contains no books by Gall, Spurzheim, Combe, or any other minor figure of the phrenological movement. But this does not prove much, since 1) Helen Taylor, Mill's step-daughter, presented in 1905 to Somerville College's library only those of Mill's books that were in England at the time of his death, and given that 2) the Somerville books were used for the next sixty

years as a working library for students and were consequently exposed to the common fate of library books (some have disappeared, some have been deteriorated and consequently thrown away), that 3) books considered inappropriate for a college library (which may well have included books on phrenology) were disposed of, without any record being kept of which, and that 4) Mill's books in Avignon (where he died in 1873) were auctioned in several lots and dispersed thereafter<sup>23</sup>. Moreover, the mere fact that one does not find phrenological books in Mill's library does not prejudge his lack of acquaintance with the doctrine, since its primary means of diffusion had been through public lectures and periodical literature, and most notably *The Phrenological Journal* founded by George Combe in 1823. Accordingly, Mill may well have attended phrenological events or read phrenological papers, without having left traces of it.

Eventually, more indirect textual evidence can be invoked in our search for an appraisal of Mill's familiarity with phrenology. To that end, we have to resort to the same sources we have used in our attempt to assess the extent of Mill's biological culture. A first case in point is W.B. Carpenter's *Principles of Human Physiology* (1842), which Mill apparently read whilst completing the *System of Logic*, that is a few months before he started corresponding with Comte<sup>24</sup>. What could Mill have learnt about cerebral physiology from Carpenter?

The topic was treated extensively in the seventeenth chapter on the "General Functions of the Encephalon" of the *Principles*. According to Carpenter, all investigations led to the conclusion that the cerebrum was the organ through which all impressions, deriving either from the external or the internal sensory organs, were received, in which voluntary actions were elaborated, and from which the volitional processes leading to muscular contractions originated. With regard to localizations, Carpenter did not think one could go further than the general ascription of sensory, cognitive, and motor functions to the brain, as his review of phrenology made clear. In the two paragraphs he devoted to the question, he acknowledged the interest of the hypothesis according to which "different portions of the cerebrum [had] different functions in the complex operations of thought" (W.B. Carpenter, *Principles of Human Physiology*, p. 236)<sup>25</sup>, and he also agreed that

"a large amount of evidence has been adduced by [phrenologists] in support of Gall's views, which is regarded by many physiologists of much intelligence as quite decisive" (*Id.*).

Yet, Carpenter was not convinced. Firstly, he objected that, even if it was common usage to rely on the outward appearance of individuals to estimate their intellectual capacity or some of their character traits, such a procedure could not warrant the inference of the existence of distinct organs from the mere observation of the outward anatomical specificities of one's skull.

"It may be thought to be, in regard to the form of the head, very much as in respect to the character of the mind, - that we may draw from it a general idea as to the character of the mind, and may not unfrequently be able to predicate correctly some minute details; and yet that an attempt to localize the organs more minutely, may be as destitute of truth as were the details of the system of Lavater" (*Ibid.*, p. 237).

In short, phrenology fared no better than physiognomy.

Secondly, Carpenter refused to deduce from the size of the different parts of the brain the measure of their relative functional power (as the Proportionality Thesis of phrenology would have it), because nobody had yet established the thickness of the cortical substance in the different parts of the brain, that is the proportion of grey matter, which was supposed to be the source of the functional power of the organ, compared with that of white matter, which was considered as a mere conductor:

"Certainly there is a considerable variation in this respect among different individuals; and it is yet to be proved, that the relation is constant in different parts of the same individual Brain. Until this is substantiated, all inferences drawn from correspondence between the prominence of certain part of the brain and the intensity of a particular function are invalid" (*Id.*).

Thirdly, the observations on which the phrenologists based their claims did not convince him, as the controversy over the function of the cerebellum illustrated. As we have seen, Gall located the "instinct of propagation" in the cerebellum, and much of the appeal of phrenology, as the case of Comte testified<sup>26</sup>, rested on the strength of the evidence adduced for that association between a physiological function and a definite organ. To prove his case, Gall drew on all sorts of resources. He resorted to comparative anatomy to show that when animals endowed with a cerebellum were in the process of reproducing, this organ swelled and heated up. He also underlined the correlation of large necks with active sexual propensities in animals such as rams, bulls, and pigeons, a feature that was also present in human individuals with stronger sexual urges and absent in those deprived of them as well as in women. In general, Gall concluded, the larger development of the cerebellum in animals and the larger development of the anterior parts of the brain in man accounted for the pronounced activity of the sexual functions in the former and their moderate amount in the latter.

From clinical observations, Gall drew the conclusion that lesions of the genitals produced lesions of the cerebellum, and *vice versa*. Finally, Gall, insisting on how easy it was to gauge the size of the cerebellum just by palpating the part of the skull above the hollow of the neck, argued that anybody could check for oneself the accuracy of his claim.

To this, Carpenter replied that 1) the cranioscopic diagnostic of the phrenologists fell short of substantiating their cerebral claims, for they were made “upon the cranium, rather than upon the brain” (*Id.*); 2) some of the consequences Gall deduced from his association of the cerebellum with sexual functions were contrary to the facts, and therefore undermined the general conjecture. For instance, as Carpenter recalled, Gall (followed by many phrenologists including Joseph Vimont, which was referred to in a footnote) maintained that castration affected the development of the cerebellum, and invoked the difference in size allegedly existing between the cerebellum of entire horses and geldings<sup>27</sup>. Unfortunately for phrenologists, Carpenter insisted, “the facts ascertained regarding the comparative weight of the Cerebellum in castrated and entire horses” (*Id.*) went counter the phrenological assertion, since the French anatomist François Leuret demonstrated by using quantitative data that, contrary to Gall’s hypothesis, geldings had a bigger cerebellum (if compared to the cerebrum) than mares, and that even mares had a bigger cerebellum than entire horses<sup>28</sup>. This proved both that the phrenological association between the cerebellum and sexual functions was not vindicated by the facts, and that Gall’s empiricist stance came closer to mere rhetoric than actual method.

Fourthly, the support from comparative anatomy invoked by Gall for his theses was not, in Carpenter’s eye, properly established:

“the difference in the antero-posterior diameter, between the brain of Man and that of the lower Mammalia, principally arises from the shortness of the *posterior* lobes in the latter, these being seldom long enough to cover the Cerebellum; yet it is in these posterior lobes, that the *animal* propensities are regarded by phrenologists as having their seat. On the other hand, the anterior lobes, in which the intellectual faculties are considered as residing, bear, in many animals, a much larger proportion to the whole bulk of the brain, than they do in Man” (*Ibid.*, p. 238).

But all these data, concluded Carpenter, demonstrated that it was not the case, as the phrenologists maintained, that the purely instinctive propensities common to man and animals were not located in the cerebrum.

Fifthly, Carpenter objected that the evidence drawn from psychopathological observation was far from corroborating unambiguously the localisationist thesis. To be

sure, a considerable number of physicians interested in the aetiology of mental diseases welcomed the phrenological correlation of the different types of monomania and their associated symptoms with lesions of specific parts of the brain as a progressive approach in the study of these affections. However, Carpenter underlined that instances of such correlation were not numerous, and that it was seldom possible to find a unique anatomical localization for each functional deficit. He contended that, in the case of disorders affecting the memory of words, the lesions of the organ of language phrenologists predicted were neither constant nor always present. Furthermore, their emphasis on the fact that the effects of each local cerebral injury would provoke a loss of memory of a particular subject led, according to Carpenter, to an uncontrollable inflation in the number of organs:

“this principle, if carried to its full extent, would require us to regard each organ as split up into a large number of subdivisions, - the organ of language, for example, having one store-house for Latin, another for Greek, &c., either of which may be destroyed, without the other being affected” (*Ibid.*, p. 238).

Such a multiplication seemed neither sensible nor reasonable to Carpenter<sup>29</sup>.

Finally, it was the very method of justification used by the phrenologists that Carpenter questioned. For, if they were always keen on boasting of the numerous confirmations of their theses, they were comparably more reluctant to mention refutations. As Carpenter pointed out, his “own experience of their determinations” led him to think that “failure [was] as frequent as success” (*Id.*). And when they did take into account these failures, phrenologists generally tried to explain away the discrepancies between their conjectures and the empirical data. In other words, rather than facing objections, they merely attempted to defuse them. But if they could not be proven wrong, certainly they could not be proven right either. Accordingly, Carpenter soberly concluded that, as matters stood, phrenological claims had not yet been definitively substantiated, and recommended the phrenologists that they made

“themselves first acquainted with what can be established as the general functions of the Brain, before descending to particulars” (*Ibid.*, p. 239).

Granted he read the book, what Mill could have got out of Carpenter’s *Principles of Human physiology*? The main lesson to be learnt from it was that, even if cerebral physiology had established the general dependence of sensory, intellectual, and volitional functions on the brain, no finer localizations had been vindicated either for the traditional psychological faculties such as memory, judgement, or imagination, or for

the phrenological dispositions. The phrenological hypothesis of a modular cerebral constitution was not in itself implausible, but the evidential support adduced by phrenologists was generally inconclusive, if not totally far-fetched (as the quack practice of cranioscopy illustrated). In short, the truth of phrenology remained to be demonstrated<sup>30</sup>.

Nearer to the time of his correspondence with Comte, one may finally evoke the encounter with Alexander Bain as a possible source for Mill's knowledge of phrenology. For just as Bain had provided him with useful examples drawn from physiology, it may have been the case that he contributed to make Mill more familiar with Gall's doctrine<sup>31</sup>: as Bain recounted in his *Autobiography*, the Mechanics' Mutual Instruction Class he joined in Aberdeen in May 1835 was not spared the phrenological frenzy, "which was now in full force in Edinburgh, through the Combes, and had a small number of votaries in Aberdeen" (A. Bain, *Autobiography*, p. 27)<sup>32</sup>. Phrenology was indeed a subject that Bain's fellows and himself tackled, especially with respect to the theory's "great rock of offence" (*Id.*, *i.e.* its alleged materialism. Bain also pointed out that "Combe's *Constitution of Man* had great influence at that time" and that, as far as he could remember, they "went cordially along with it" (*Ibid.*, p. 28), certainly meaning that they endorsed his emphasis on the importance of natural laws for the understanding of a wide range of phenomena. Yet, he also took pain to specify that their agreement with Combe went along with them "only partially admitting his phrenological tenets" (*Id.*). Perhaps, one may venture that these doubts about phrenology entertained by Bain were aired in conversations with Mill, thereby enabling the latter to benefit from the first-hand expertise of the former. However, for want of textual evidence, this still remains a conjecture, even if a somewhat plausible one.

In any case, this foray into the likely sources of Mill's phrenological knowledge enables one to conclude at least two things: Mill was far from being totally ignorant of the main tenets of phrenology when he started corresponding with Comte and his reluctance to accept phrenological conclusions was certainly influenced by his reading of Carpenter, as a minute analysis of his writings indicates<sup>33</sup>.

<sup>1</sup> See Appendix II on Mill's general knowledge of biology. As for phrenology, there is no trace of Millian scholarship on the subject: both Professor Stefan Collini (Oxford) and Dr John Van Whye (Cambridge) have confirmed to me in writing that they had no knowledge of any existing secondary literature. Unfortunately, my own research has corroborated the fact.

<sup>2</sup> See II, n. 10 for secondary literature.

<sup>3</sup> T. Brown, "Villers, sur une nouvelle théorie du cerveau", *Edinburgh Review* 1803, 2, p. 147.

<sup>4</sup> J.G. Spurzheim, *The Physiognomical System of Drs. Gall and Spurzheim; founded on an Anatomical and Physiological Examination of the Nervous System in general, and of the Brain in Particular; and indicating the Dispositions and Manifestations of the Mind*. London: Baldwin, Cradock, and Joy, 1815.

<sup>5</sup> Two widely influential anti-phrenological tracts were “The Physiognomical System of Doctors Gall and Spurzheim”, *Quarterly Review* 1815, pp. 159-78 (perhaps due to the clergyman William Rowe Lyall), and John Gordon’s anonymous “The Doctrines of Gall and Spurzheim”, *Edinburgh Review* 1815, 25, pp. 227-68. On what is known as the Edinburgh phrenological controversies, see S. Shapin, “Phrenological Knowledge and the Social Structure of Early Nineteenth-Century Edinburgh”, *Annals of Science*, 1975, 32, pp. 219-43; “The Politics of Observation: Cerebral Anatomy and Social Interests in the Edinburgh Phrenology Disputes”, in R. Wallis, ed., *On the Margins of Science: the Social Construction of Rejected Knowledge*, Sociological Review Monograph, 27. Keele: University of Keele, 1979, pp. 139-78; “Homo Phrenologicus: Anthropological Perspectives on an Historical Problem”, in B.S. Barnes and S. Shapin, eds., *Natural Order: Historical Studies of Scientific Culture*. Beverly Hills & London: Sage Publications, 1979, pp. 41-71.

<sup>6</sup> See R. Cooter, *The Cultural Meaning of popular science*.

<sup>7</sup> J. Van Whye, “Was Phrenology a Reform Science? Towards a New Generalization for Phrenology”, *History of Science* 2004, XIII, pp. 313-31.

<sup>8</sup> A. McLaren, “Phrenology: Medium and Message”, *The Journal of Modern History* 1974, 46, 1, pp. 86-97.

<sup>9</sup> See Appendix II.

<sup>10</sup> On Gergonne, see D.J. Struik, “Gergonne, Joseph Diez”, in C. C. Gillispie (ed.), *Dictionary of Scientific Biography*. New York: Scribner, 1981, vol. 5, pp. 367-8.

<sup>11</sup> J. S. Mill, *Journal and Debating Speeches*. Edited by John M. Robson. London & Toronto: University of Toronto Press and Routledge & Kegan Paul, 1988.

<sup>12</sup> J. Mill, “Education”, in J. Mill, *Essays*, London: J. Innes, 1828, pp. 1-46. Alexander Bain, the biographer of the Mills, pointed out this belief in the natural equality of men as a legacy of the father to the son. In his biography of James Mill, Bain claims that the latter was “the victim of a theory that grossly misrepresents the facts. The power of education is great, but it does not account for all the differences of character of men and of races” (A. Bain, *James Mill. A Biography*. London: Longmans, Green, & Co, 1882, p. 249). In his critical account of the younger Mill’s life and works, Bain regarded his belief in natural equality and his disregard for the physical conditions of mental life as his two “greatest theoretical errors as a scientific thinker” (A. Bain, *John Stuart Mill*, p. 146). As to the first, he maintained that John Stuart Mill “inherited the mistake from his father, and could neither learn nor unlearn, in regard to it” (*Id.*). As to the second, Bain ventured that he “might have educated himself out of his error, but he never did” (*Ibid.*, p. 147). It was not that Mill “made no allowances for the physical element of our being”, Bain continued, but rather that “he did not allow what every competent physiologist would now affirm to be the facts” (*Id.*). Certainly, Bain thought that a clear appraisal of the material conditions of mental life would have led Mill to reject the thesis of natural equality.

<sup>13</sup> J. S. Mill describes as follows the central tenets of his father’s psychology in the *Autobiography*: “his fundamental doctrine was the formation of all human character by circumstances, through the universal Principle of Association, and the consequent unlimited possibility of improving the moral and intellectual condition of mankind by education. Of all his doctrines none was more important than this, or needs more to be insisted on: unfortunately there is none which is more contradictory to the prevailing tendencies of speculation, both in his time and since” (J. S. Mill, *Autobiography*, pp. 109-11).

<sup>14</sup> Some prominent Benthamites such as the lawyer Edwin Chadwick and the Unitarian physiologist Thomas Southwood Smith (Bentham’s own physician) shared many ideas with George Combe, the main popularizer of phrenology in the British isles, especially with respect to the importance of the knowledge of natural laws for the improvement of social arrangements. See J. Van Whye, *Phrenology and the Origins of Victorian Scientific Naturalism*, p. 188.

<sup>15</sup> J. Bentham, *The Collected Works of Jeremy Bentham. The Correspondence of Jeremy Bentham*. Edited by S. Conway. Vol. 10: July 1820 to December 1821. Oxford: Clarendon Press, 1994.

<sup>16</sup> J. Bentham, *The Rational of Judicial Evidence*, in J. Bentham, *The Works of Jeremy Bentham. Under the Superintendence of his Executor, John Bowring. Part XIV, Containing the Rationale of Judicial Evidence, Books IX & X, with a General Index to the two vols. And notes, chiefly illustrative of alterations in the law which have taken place since the publication of the first edition*. Edinburgh: William Tait, 1840. Both R. Cooter (*The Cultural Meaning of Popular Science*, p. 23) and A. McLaren (“Phrenology: Medium and Message”, p. 89) single out from this passage a phrase (“a sick man’s dream”, p. 433) which they both hold to refer to phrenology. However, on closer inspection, it rather seems to point toward the irrational legal arrangements of English law.

<sup>17</sup> Mill’s editing work of Bentham’s papers resulted in the first edition of the latter’s *Rationale of Judicial Evidence, specially applied to English practice. From the manuscripts*. Edited, translated, and with contributions by J. S. Mill. Five volumes. London: Hunt & Clarke, 1827. Mill recounts this episode in J. S. Mill, *Autobiography*, pp. 117-9.

<sup>18</sup> See J. S. Mill, *Journal and Debating Speeches*, p. 433. J. M. Robson surmises that it had to do with Combe's developments about the "Love of Approbation" taken from his *System of Phrenology*. Second edition. Edinburgh: John Anderson, 1825, pp. 165-73

<sup>19</sup> However, Mill's mention in the same letter of the controversy over Raphael's skull may suggests that he was referring to Combe's *Essays on Phrenology* (Edinburgh: Bell and Bradfute, 1819), later published as *A System of Phrenology*. See n. 17 *supra*.

<sup>20</sup> J.M. Robson indicates that Mill might have known about the controversy through the account of it given by the *Athenaeum*, 1833, 16, p. 780.

<sup>21</sup> See F.J. Gall, *Recherches sur les fonctions du cerveau*, V, pp. 177-178.

<sup>22</sup> Combe recounted the story as follows: "Dr Scheel of Copenhagen had attended a course of Dr Gall's lectures at Vienna, from which city he went to Rome. One day he entered abruptly, when Dr Gall was surrounded by his pupils, and, presenting to him the cast of a skull, asked his opinion of it. Dr Gall instantly said, that he 'had never seen the organ of Constructiveness so largely developed as in the head in question.' Scheel continued his interrogatories. Dr Gall then pointed out also a large development of the organs of Amativeness and Imitation. 'How do you find the organ of Colouring.' I had not previously adverted to it,' said Gall, 'for it is only moderately developed.' Scheel replied, with much satisfaction, 'that it was a cast of the skull of Raphael' ". Yet Combe had to acknowledge that the cast had not been made on Raphael's skull. But he thought that such a finding did not diminish Gall's merit: "The skull from which the cast was taken was preserved in the Academy of St Luke at Rome, and was universally mentioned as being that of Raphael; so that Dr Scheel acted in perfect good faith on this occasion. It has been since discovered that the skull was not that of Raphael. Dr Gall merely stated the development which he observed in it; and it remains as striking an example of that development as ever. As, however, the mental qualities of the individual are unknown, it affords no evidence for or against Phrenology, and I therefore omit farther mention of it in this edition. It is now said to have been the skull of Adjutorio, a celebrated amateur in the fine arts, who founded St Luke's Academy" (G. Combe, *A System of Phrenology*. Fifth edition. Edinburgh: Maclachlan & Stewart, 1853, Vol. I, p. 330). On this episode, see M. Renneville, *Le langage des crânes*, p. 145.

<sup>23</sup> Miss Pauline Adams, librarian and archivist at Somerville College, very kindly provided me with all these details and a typescript of the list of Mill's book at Somerville College. Some of Mill's books that were auctioned in Avignon found their way to the *Bibliothèque Nationale* in Paris, but I have not been able to locate those, because French archivists did not seem to have created a Mill collection when the books were acquired, and just incorporated them in the main collection. By accident, I stumbled on some of Mill's books at the *Bibliothèque de la Sorbonne* in Paris, but there too, no record had been kept of what had been acquired.

<sup>24</sup> See IIIB.

<sup>25</sup> W.B. Carpenter, *Principles of Human Physiology*. I quote from the second edition (1844), which includes no change in the passages dealt with here.

<sup>26</sup> See Appendix IV.

<sup>27</sup> See F.J. Gall, *Recherches sur les fonctions du cerveau*, III, p. 286. Joseph Vimont held that, even if there was a central portion of the cerebellum that was in charge of agility and surefootedness, its lateral parts were nonetheless the siege of sexual instinct. See his *Traité de phrénologie humaine et comparée*. 2 volumes. Paris : J.-B. Baillière, 1831-1835, vol. II, p. 230-245.

<sup>28</sup> For Leuret's figures, see F. Leuret & P. Gratiolet, *Anatomie comparée du système nerveux considéré dans ses rapports avec l'intelligence*. Vol. I, Paris: J.-B. Baillière & fils, 1839, pp.425-30.

<sup>29</sup> In retrospective, Carpenter's mention of the organ of language might seem ironical, for it has been argued that Broca's localization of the seat of articulated language in the third frontal convolution of the left hemisphere was indeed the only genuine anatomical confirmation phrenology ever received. However, a more detailed analysis of Broca's claim reveals that it depended on a functional conception of language at odds with that of the phrenologists (he argued for the existence of one articulatory and one cognitive element to language), and that the localization he proposed – a unique seat in the left hemisphere – went again the phrenological claim of the necessary symmetry of all brain organs. On this see, G. Lanteri-Laura, *Histoire de la phrénologie*, Chap. IV; and A. Harrington, *Medicine, Mind, and the Double Brain. A Study in Nineteenth-Century Thought*. Princeton: Princeton University Press, 1987, Chap. 2.

<sup>30</sup> In 1846, Carpenter would publish an article entitled "Mr Noble on the Brain and its Physiology" in the *British and Foreign Medical Review* (October, 1846, pp. 488-544), which reviewed sharply the phrenology-influenced book of the physician D. Noble, *The Brain and its Physiology; a Critical Disquisition on the Methods of Determining the Relations subsisting between the Structure and Functions of the Encephalon* (London: J. Churchill, 1846). Developing greatly what he had said in the *Principles of Human Physiology*, Bain castigated Noble and the phrenologists in general for their ignorance of comparative anatomy, their shortcomings about nervous physiology, and their reluctance to live by the probative standards common to other scientific investigations. Mill wrote to express his agreement: "I should have been truly vexed not to have heard

---

immediately of such a valuable contribution to science as your paper. I have read it once with great care, but I must read it a second time before I can have completely incorporated it with my system of thought. I have long thought that you were the person who would set to rights the pretensions of present and the possibility of future phrenology; but I did not venture to hope that I should see, so soon, anything approaching in completeness and conclusiveness" quoted in W.B. Carpenter, *Nature and Man. Essays Scientific and Philosophical*. London: Kegan Paul, Trench & Co, 1888, p. 55).

<sup>31</sup> On Bain and phrenology, see R.M. Young, *Mind, Brain, and Adaptation*, pp. 121-33; and R. Rylance, *Victorian Psychology and British Culture, 1850-1880*, pp. 169-71.

<sup>32</sup> A. Bain, *Autobiography*. Edited by W.L. Davidson. London: Longmans, Green, & Co, 1904. The physician Andrew Combe joined his brother George in his phrenological crusade.

<sup>33</sup> See IIIC.

## Appendix VI : Mill and the Legacy of Associationism.

What was the kind of psychology Mill endorsed? Let us consider the way he introduced the psychological laws he held to enter into the explanation of “moral phenomena”. He singled out what he took to be the most general laws of psychology established so far: the law that every mental impression has its idea (Hume’s so-called “correspondence principle”)<sup>1</sup>; and three “Laws of Association” which explained the bond of union among ideas by three qualities (similarity, frequency, intensity). He concluded by referring the reader keen to learn more to

“works professedly psychological, in particular to Mr Mill’s *Analysis of the Phenomena of the Human Mind*, where the laws of association, both in themselves and in many of their applications, are copiously exemplified, and with a masterly hand” (J. S. Mill, *SL*, VI, IV, 3, pp. 852-3)<sup>2</sup>.

Now, this final reference was more than a filial tribute. It was also a pledge of allegiance to a specific intellectual tradition in the study of the mind, to which James Mill certainly belonged<sup>3</sup> but that did not originate with him: namely, association psychology<sup>4</sup>, “the theory which resolves all the phenomena of the mind into ideas of sensation connected together by the law of association” (J. S. Mill, “Blakey’s History of Moral Science, p. 23)<sup>5</sup>.

The progress of scholarship in the history of psychology has certainly not rendered obsolete Théodule Ribot’s judgement, made in 1870, that John Stuart Mill was the direct heir of “an uninterrupted tradition which, through Brown, is united with the Scottish School, and by James Mill, is linked to Hartley and Hume” (T. Ribot, *La psychologie anglaise contemporaine*, p. 44)<sup>6</sup>. For some, like E.G. Boring, even if it is the case that “Mill never wrote a psychology like that of his English predecessors”, it nonetheless remains true that the “nineteenth-century saw the culmination of associationism in James Mill and (...) John Stuart Mill” (E.G. Boring, *A History of Experimental Psychology*, p. 219)<sup>7</sup>. In this regard, the principal landmarks of J. S. Mill’s contribution to psychological theorizing were written during the 1860s<sup>8</sup>. However, Mill’s architectonic concerns with the relations of psychology with the other sciences as to the explanation of “moral” phenomena appeared much earlier, and most notably in the *System* and the correspondence with Comte<sup>9</sup>. Let us summarize briefly what was the nature of Mill’s allegiance to associationism.

As he told Comte, Mill believed “in the possibility of a positive psychology” conceived as an “analysis of our intellectual and affective faculties” (Mill to Comte, December 18, 1841; in Haac [ed.], p. 42). This belief certainly had various sources, but

it certainly derived primarily from the very peculiar education James Mill dispensed to his son John Stuart. As the *Autobiography* of the latter amply testifies, John Stuart Mill's childhood was conceived by his father as a sort of educational experiment undertaken according to associationist principles. The entire education of the young boy rested on the empiricist assumption that the human mind gains knowledge only through experience and that the character of the child is moulded by the environment and therefore determines the future behaviour of the adult.

As John Stuart Mill's puts it in his description of the central tenets of his father's thought, in psychology, "his fundamental doctrine was the formation of all human character by circumstances, through the universal Principle of Association, and the consequent unlimited possibility of improving the moral and intellectual condition of mankind by education. Of all his doctrines none was more important than this" (J. S. Mill, *Autobiography*, p. 109-110). Accordingly, James Mill managed to subject his son to a highly intensive, and somewhat frightening, training, which mostly focused on the extensive reading of the classics but was soon extended to the study of mathematics, logic, and political economy.

Despite its broad scope, this scheme remained the strict application of associationist methods. Consider for instance how John Stuart Mill started learning Greek at the age of three: because "in those days Greek and English Lexicons were not", and because the boy "could make no more use of a Greek and Latin Lexicon than could be made without having yet begun to learn Latin", his father forced him to memorize "Vocables, being lists of common Greek words, with their signification in English, which he wrote out for me on cards" (*Ibid.*, p. 9). Here, one does not have an object and a name that are associated – as it is usually the case when children learn to speak –, but two words whose meanings are taken to be equivalent by way of repeated association: it is nevertheless the proper application of an associationist rule of learning.

Furthermore, one important assumption of the educational scheme devised for his son by James Mill bore directly on the point at issue between John Stuart Mill and Auguste Comte, that of the origins of individual differences in character, ability, and intelligence. For, on the associationist explanation, "all the marked distinctions of human character", far from being "innate, and in the main indelible" (*Ibid.*, p. 270) could be explained by the varieties of circumstances the individuals were subjected to in the course of their existence. As D.B. Klein remarks (D.B. Klein, *A History of Scientific Psychology*, pp. 740-3), that was exactly the message his father conveyed to John Stuart

Mill on the eve of his trip to France. Surely, predicted James Mill, the young boy would be highly praised for his various intellectual achievements. But he also warned him that his somewhat exceptional attainments were not due to any constitutive superiority of mind. What differentiated him from others children and the majority of adults was that he had the chance of being educated properly:

“whatever I knew more than others, could not be ascribed to any merit in me, but to the very unusual advantage which had fallen to my lot, of having a father who was able to teach me, and willing to give the necessary trouble and time; that it was no matter of praise to me, if I knew more than those who had not had a similar advantage, but the deepest disgrace to me if I did not. I have a distinct remembrance, that the suggestion thus for the first time made to me, that I knew more than other youths who were considered well educated, was to me a piece of information, to which, as to all other things which my father told me, I gave implicit credence, but which did not at all impress me as a personal matter (...); but, now when my attention was called to the subject, I felt that what my father had said respecting my peculiar advantages was exactly the truth and common sense of the matter, and it fixed my opinion and feeling from that time forward” (J. S. Mill, *Autobiography*, p. 37).

As we have seen, it was indeed Mill’s focus on the role of circumstances and the importance of education that distinguished his position in the debate with Comte.

However, Mill not only received a training inspired by associationist principles, for he also turned directly to the very theoretical sources of James Mill’s programme as soon as he entered his “last stage of education”<sup>10</sup>. While discovering Bentham’s thought in Dumont’s *Traité de législation civile et pénale*, the young Mill started reading the main works of the associationist tradition in psychology, including Condillac’s *Traité des sensations*, Locke’s *Essay concerning Human Understanding*, Helvétius’ *De l’Esprit*, and Hartley’s *Observations on Man*, a book his father “deemed the really master-production in the philosophy of mind” (*Ibid.*, p. 71)<sup>11</sup>. “The other principal English writers on mental philosophy”, Mill added, “I read as I felt inclined, particularly Berkeley, Hume’s *Essays*, Reid, Dugald-Stewart, and Brown on cause and effect” (*Id.*).

In the light of such an account, one better understands how tight may have been the hold of the associationist tradition, and, more broadly, of a psychologically oriented philosophy, on the mind of John Stuart Mill. Of course, his thought, especially regarding psychological issues, was not a mere duplicate of what had been said by his notorious forerunners (the distinction between “chemical” and “mechanical” phenomena is a good case in point), but Mill nevertheless belonged to that tradition and shared some of its most basic assumptions, most notably its empiricism and its theory of ideas. His commitment never wavered in the course of his intellectual life: From his 1833 review of Blakey’s *History of Moral Science*, in which he enthusiastically endorsed the “association-

philosophy as taught by Hartley” (J. S. Mill, “Blakey’s History of Moral Science”, p. 23) and by his father’s *Analysis*, to his psychological writings of the 1860s, he stuck to the associationist account of the nature and laws of the human mind as the best theory available for the explanation of “moral” phenomena, and most notably of the individual differences in mental abilities.

---

<sup>1</sup> See D. Hume, *A Treatise of Human Nature*. Edited by D.F. Norton and M.J. Norton. Oxford: Oxford University Press, 2000, Book 1, Part 1, Sect. 1, p. 8.

<sup>2</sup> Another short introduction to the basics of association psychology can be found in J. S. Mill, *SL*, III, XIII, 6, p. 480-1, where Mill regarded as an illustration of “the explanation of laws of nature” (i.e. the reduction of uniformities of successions to laws of greater generality and simplicity) the deduction from the law that “ideas of a pleasurable or painful character form associations more easily and strongly than other ideas” of “many of the more special laws which experience shows to exist among particular mental phenomena” (*Ibid.*, p. 481).

<sup>4</sup> On association psychology, see R.M. Young, “Association of Ideas”, in Philip P. Wiener, ed., *Dictionary of the History of Ideas*. New York: Scribner’s, 1968, vol. 1, pp. 111-18; D.B. Klein, *A History of Scientific Psychology. Its Origins and Philosophical Background*. London: Routledge & Kegan Paul, 1970, Chap. 18.

<sup>5</sup> J. S. Mill, “Blakey’s History of Moral Science”, in J. S. Mill, *Essays on Ethics, Religion, and Society*, pp. 19-29.

<sup>6</sup> T. Ribot, *La psychologie anglaise contemporaine*. Third edition. Paris: Félix Alcan, 1914.

<sup>7</sup> E.G. Boring, *A History of Experimental Psychology*. New York: Appleton-Century-Crofts, 1950.

<sup>8</sup> The most relevant pieces of that genre are Mill’s 1859 article on “Bain’s Psychology” (in J. S. Mill, *Essays on Philosophy and the Classics*, Edited, with a textual introduction by J.M. Robson. Introduction by F.E. Sparshott. Toronto & London: University of Toronto Press & Routledge and Kegan Paul, 1978, pp. 339-73), the *Examination of Sir William Hamilton’s Philosophy* published in 1865 (Edited, with a textual introduction by J.M. Robson. Introduction by A. Ryan, Toronto & London: University of Toronto Press & Routledge and Kegan Paul, 1979), and the second edition of his father’s *Analysis* in 1869 (London: Longmans, Green, and Dyer, 1869).

<sup>9</sup> On the different aspects of Mill’s contribution to psychology, see D.B. Klein, *A History of Scientific Psychology*, Chap. 20: “The Millian Background”, especially, pp. 721-57.

<sup>10</sup> This is the title John Stuart Mill gave to the third chapter of the *Autobiography*.

<sup>11</sup> The latter seems to have made a lasting impression on John Stuart Mill’s intellectual development: “Hartley’s explanation, incomplete as in many points it is, of the more complex mental phenomena by the law of association, commended itself to me at once as a real analysis, and made me feel by contrast the insufficiency of the merely verbal generalizations of Condillac, and even of the instructing gropings and feelings about for psychological explanations, of Locke” (J. S. Mill, *Autobiography*, p. 71). This interest was furthered by the creation of the so-called Utilitarian Society, within which Mill and his associates “launched into analytic psychology, and having chosen Hartley for [their] text-book, [they] raised Priestley’s edition [Joseph Priestley published an abridgment of Hartley’s *Observations* under the title *Hartley’s Theory of the Human Mind* in 1775] to an extravagant price by searching through London to furnish each of [them] with a copy” (*Ibid.*, p. 215-7).

## Bibliography :

Annas, J. (1977) "Mill on the Subjection of Women." *Philosophy*, 52, pp. 179-94.

Bailly de Blois, E.-M. (1824) *L'Existence de Dieu et la liberté morale, démontrées par des arguments tirés de la doctrine du docteur Gall*. Paris: Delaunay.

Bain, A. (1855) *The Senses and the Intellect*. London: J.W. Parker and Son.

Bain, A. (1861) *On the Study of Character. Including an Estimate of Phrenology*. London: Parker, Son, and Bourn.

Bain, A. (1882) *James Mill. A Biography*. London: Longmans, Green, & Co, 1882.

Bain, A. (1882) *John Stuart Mill. A Criticism with Personal Recollections*. London: Longmans, Green & Company.

Bain, A. (1904) *Autobiography*. Edited by W.L. Davidson. London: Longmans, Green, & Co.

Ball, T. (2000) "The Formation of Character: Mill's 'Ethology' Reconsidered." *Polity*, 18:1, pp. 25-48.

Barclay, J. (1829) *The Anatomy of the Bones of the Human Body, Represented in a Series of Engravings, Copied from the Elegant Tables of Sue and Albinus*. Edinburgh: E. Mitchell.

Beecher, J. (1986) *Charles Fourier. The Visionary and His World*. Berkeley & Los Angeles: University of California Press.

Beecher, J. & Bienvenu, R. (eds) (1972) *The Utopian Vision of Charles Fourier. Selected Texts on Work, Love, and Passionate Attraction*. London: Jonathan Cape.

Bentham, J. (1827) *Rationale of Judicial Evidence, specially applied to English practice. From the manuscripts*. Edited, translated, and with contributions by J. S. Mill. Five volumes. London: Hunt & Clarke.

Bentham, J. (1840) *The Rational of Judicial Evidence*, in J. Bentham, *The Works of Jeremy Bentham. Under the Superintendence of his Executor, John Bowring. Part XIV, Containing the Rationale of Judicial Evidence, Books IX & X, with a General Index to the two vols. And notes, chiefly illustrative of alterations in the law which have taken place since the publication of the first edition*. Edinburgh: William Tait.

Bentham, J. (1994) *The Collected Works of Jeremy Bentham. The Correspondence of Jeremy Bentham*. Edited by S. Conway. Vol. 10: July 1820 to December 1821. Oxford: Clarendon Press.

Berger, F.R. (1984) *Happiness, Justice, and Freedom. The Moral and Political Philosophy of John Stuart Mill*. Berkeley: University of California Press.

Bergmann, G. (1957) *Philosophy of Science*. Madison: The University of Wisconsin Press.

Blainville, H. D. de (1822) *De l'organisation des animaux, ou Principes d'anatomie comparée.* Paris: Levraut.

Blainville, H. D. de (1845) *Histoire des sciences de l'organisation et de leurs progrès comme base de la philosophie. Rédigée d'après ses notes et ses leçons faites à la Sorbonne de 1839 à 1841, avec les développements nécessaires et plusieurs additions, par F.L.M. Maupied.* Paris & Lyon : Librairie Classique de Perisse Frères.

Boring, E.G. (1950) *A History of Experimental Psychology.* New York: Appleton-Century-Crofts.

Bozovic, M. (ed.) (1995) *Jeremy Bentham: The Panopticon Writings.* London & New York: Verso.

Braunstein, J.-F. (1986) *Broussais et le matérialisme. Médecine et philosophie au XIX<sup>e</sup> siècle.* Paris: Méridiens Klincksieck.

Braunstein, J.-F. (1998) "Antipsychologisme et philosophie du cerveau chez Auguste Comte." *Revue internationale de philosophie*, 203, pp. 7-28.

Braunstein, J. F. (2002) "La philosophie des sciences d'Auguste Comte." In P. Wagner (ed.), *Les philosophes et la science.* Paris: Gallimard, pp. 787-822.

Brecher, B. (1993) "Why patronize Feminists? A Reply to Stove on Mill." *Philosophy*, 68, pp. 397-400.

Broussais, F.J.V. (1828) *De l'Irritation et de la Folie, ouvrage dans lequel les rapports du physique et du morale de l'homme sont établis sur les bases de la médecine physiologique.* Paris: Delaunay.

Broussais, F.J.V. (1836) *Cours de phrénologie.* Paris: J.-B. Baillière.

Brown, D.G. (1998) "Stove's Reading of Mill." *Utilitas*, 10:1, pp. 122-6.

Brown, T. (1803) "Villers, sur une nouvelle théorie du cerveau." *Edinburgh Review*, 2, p. 147-60.

Cabanis, P.-J.-G. (1844) *Rapports du physique et du morale de l'homme et Lettre sur les causes premières. Avec une table analytique de Destutt de Tracy.* Huitième édition. Augmentée de notes et précédées d'une notice historique et philosophique sur la vie, les travaux et les doctrines de Cabanis par L. Peisse. Paris: J.-B. Baillière.

Canguilhem, G. (1994) "La philosophie biologique d'Auguste Comte et son influence en France au XIX<sup>e</sup> siècle." In G. Canguilhem, *Etudes d'histoire et de philosophie des sciences concernant les vivants et la vie.* Seventh Edition. Paris: Vrin, 1994, pp. 61-74.

Canguilhem, G. , Lapassade, G. , Piquemal, J. & Ullmann, J. (1985) *Du développement à l'évolution au XIX<sup>e</sup> siècle.* Second Edition. Paris: PUF.

Cannon, S. F. (1978) *Science in Culture : The Early Victorian Period.* New York : Dawson & Science History Publications.

Capaldi, N. (1973) "Mill's Forgotten Science of Ethology." *Social Theory and Practice*, 2/4, pp. 409-20.

Capaldi, N. (2004) *John Stuart Mill. A Biography*. Cambridge: Cambridge University Press.

Carlile, J. (1991) *John Stuart Mill and the Writing of Character*. Athens & London: The University of Georgia Press.

Carlile, J. (1999) "Mr. J. Stuart Mill, M.P., and the Character of the Working Classes." In E.J. Eisenach (ed.), *Mill and the Moral Character of Liberalism*. University Park: The Pennsylvania State University Press, pp. 143-68.

Carpenter, W. B. (1841) *Principles of General and Comparative Physiology, Intended as an Introduction to the Study of Human Physiology, and as a Guide to the Philosophical Pursuit of Natural History*. 2<sup>nd</sup> edition. London: John Churchill.

Carpenter, W.B. (1855) *Principles of Human Physiology: with their Chief Applications to Psychology, Pathology, Therapeutics, Hygiene & Forensic Medicine*. Fifth Edition. London: J. Churchill, 1855.

Carpenter, W. B. (1846) "Mr Noble on the Brain and its Physiology." *British and Foreign Medical Review*, pp. 488-544.

Carpenter, W.B. (1888) *Nature and Man. Essays Scientific and Philosophical*. London: Kegan Paul, Trench & Co.

Clarke, E. & Jacyna, L.S. (1987) *Nineteenth-Century Origins of Neuroscientific Concepts*. Berkeley: University of California Press.

Clauzade, L. (2002) "Le statut épistémologique du tableau cérébral et la notion de type chez Comte." In M. Bourdeau & F. Chazel (eds.), *Auguste Comte et l'idée de science de l'homme*. Paris : L'Harmattan, pp. 111-30.

Clauzade, L. (2003) "Auguste Comte et Stuart Mill. Les enjeux de la psychologie." *Revue d'histoire des sciences humaines*, 8, pp. 41-56.

Coleman, W. (1981) "Blainville, Henri Marie Ducrotay de." In C. C. Gillispie (ed.), *Dictionary of Scientific Biography*. New York: Scribner, , vol. 1, pp. 187-8.

Collini, S. (1983) "The Tendencies of Things: John Stuart Mill and the Philosophic Method." In S. Collini, D. Winch & J. Burrow, *That Noble Science of Politics. A Study in Nineteenth-Century Intellectual History*. Cambridge: Cambridge University Press, pp. 127-59.

Collini, S. (1991) *Public Moralists. Political and Intellectual Life in Britain 1850-1930*. Oxford: Clarendon Press.

Combe, G. (1819) *Essays on Phrenology*. Edinburgh: Bell and Bradfute.

Combe, G. (1853). *A System of Phrenology*. Fifth edition. Edinburgh: Maclachlan & Stewart, 1853

Comte, A. (1829) "Discours d'ouverture du cours de philosophie positive." *Revue encyclopédique ou analyses et annonces raisonnées des productions les plus remarquables dans la littérature, les sciences et les arts*, XLIV, pp. 273-309.

Comte, A. (1929) *Système de politique positive. Traité de sociologie instituant la religion de l'humanité*. Paris: Société positiviste.

Comte, A. (1970) *Écrits de Jeunesse, 1816-1828: Suivis du mémoire sur la cosmogonie de Laplace, 1835*. Edited by P. E. Berrêdo Carneiro & P. Arnaud. Paris: Ecole Pratique des Hautes Etudes.

Comte, A. (1973) *Correspondance générale et confessions. Tome I, 1814-1840*. Edited, with an introduction, by P. E. de Berrêdo Carneiro and P. Arnaud. Paris – La Haye: Mouton.

Comte, A. (1975) *Correspondance générale et confessions. Tome II, avril 1841- mars 1845*. Edited, with an introduction, by P. E. de Berrêdo Carneiro and P. Arnaud. Paris – La Haye: Mouton.

Comte, A. (1975) *Philosophie première. Cours de philosophie positive, leçons 1 à 45*. Edited, with introductions, by M. Serres, F. Dagognet & A. Sinaceur. Paris: Hermann.

Comte, A. (1975) *Physique sociale. Cours de philosophie positive, leçons 46 à 60*. Edited, with an introduction, by J.-P. Enthoven. Paris: Hermann.

Comte, A. (1996) *Philosophie des sciences*. Edited with an introduction and notes by J. Grange. Paris: Gallimard.

Comte, A. (1998) *Early Political Writings*. Edited and translated by H. S. Jones. Cambridge: Cambridge University Press.

Cooter, R. (1984) *The Cultural Meaning of Popular Science. Phrenology and the Organization of Consent in Nineteenth-Century Britain*. Cambridge: Cambridge University Press.

Davies, J.D. (1955) *Phrenology and Fad Science: a 19<sup>th</sup>-Century American Crusade*. New Haven, Conn.: Yale University Press.

Desmond, A. (1989) *The Politics of Evolution. Morphology, Medicine, and Reform Radical London*. Chicago & London: The University of Chicago Press.

Downing, F. G. (1994) "A Cynical Response to the Subjection of Women." *Philosophy*, 69, pp. 229-30.

Ducassé, P. (1939) *Méthode et Intuition chez Auguste Comte*. Paris: Alcan.

Fee, E. (1979) "Nineteenth-Century Craniology: The Study of the Female Skull." *Bulletin of the History of Medicine*, 53:3, pp. 415-33

Feuer, L. S. (1976) "John Stuart Mill as a Sociologist: The Unwritten Ethology." In J.R. Robson & M. Laine (eds.), *James and John Stuart Mill: Papers from the Centenary Conference*, Toronto: University of Toronto Press, pp. 87-110.

Filipiuk, M. (1987) "Letters to Mill from 'A Friend of My Own Choosing': Antoine Jerome Balar (1802-76)." *Mill Newsletter*, XXII/2, pp. 9-27.

Flourens, P. (1824) *Recherches expérimentales sur les propriétés et les fonctions du système nerveux dans les animaux invertébrés*. Paris : Crevot.

Flourens, P. (1842) *Examen de la phrénologie*. Paris: Paulin.

Fodor, J. (1983) *The Modularity of Mind*, Cambridge: The MIT Press.

Gall, F. J. (1822-1825) *Recherches sur les fonctions du cerveau et sur celles de chacune de ses parties*. Six volumes. Paris: Béchet, 1822 (for vol. I); Boucher, 1822 (for vol. II) and 1823 (for vol. III, IV, & V); Baillière: 1825 (for vol. VI).

Gall, F.J. & Spurzheim, J.G. (1809) *Recherches sur le système nerveux en général et sur celui du cerveau en particulier, mémoire présenté à l'Institut de France, le 14 mars 1808, suivi d'observations sur le rapport qui en a été fait à cette compagnie par ses commissaires*. Paris, F. Schoell & H. Nicolle.

Gall, F.J. & Spurzheim, J.G. (1810-1819) *Anatomie et physiologie du système nerveux en général et du cerveau en particulier, avec des observations sur la possibilité de reconnaître plusieurs dispositions intellectuelles et morales de l'homme et des animaux par la configuration de leurs têtes*. 4 volumes. Paris: F. Schoell, 1810 and 1812, for volumes I and II; Librairie grecque-latine-allemande, 1818, for volume III; N. Maze, 1819, for volume IV.

Gardner, E.J. (1979) "The Philosophes and Women: Sensationalism and Sentiment." In E. Jacobs (ed.), *Woman and Society in Eighteenth-Century France : Essays in Honour of John Stephenson Spink*. London : Athlone Press, pp. 19-27.

Goldstein, J. (2003) "Bringing the Psyche into Scientific Focus." In T.M. Porter & D. Ross (eds.), *The Cambridge History of Science*. Vol. 7: *The Modern Moral Sciences*. Cambridge: Cambridge University Press, pp. 131-53.

Goldstein, L. (1980) "Mill, Marx, and Women's Liberation." *Journal of the History of Philosophy*, 18, pp. 319-334.

[Gordon, J.] (1815) "The Doctrines of Gall and Spurzheim", *Edinburgh Review*, 25, pp. 227-68.

Gouhier, H. (1970) *La Jeunesse d'Auguste Comte et la formation du positivisme*. Second edition. Paris: Vrin.

Gouhier, H. (1979) "Blainville et Comte." *Revue d'histoire des sciences*, 32:1, pp. 59-72.

Gould, S.J. (1986) *The Mismeasure of Man*. Second Edition. London: Penguin Books.

Grange, J. (1996) *La philosophie d'Auguste Comte. Science, Politique, Religion*. Paris: PUF.

Grogan, S. K. (1992) *French Socialism and Sexual Difference : Women and the New Society, 1803-1844*. London; Macmillan.

Guillin, V. (2004) "Théodule Ribot's Ambiguous Positivism: Philosophical and Epistemological Strategies in the Founding of French Scientific Psychology." *Journal of the History of the Behavioral Sciences*, 40, pp. 165-81.

Guillo, D. (2003) *Les figures de l'organisation. Sciences de la vie et sciences sociales au XIX<sup>e</sup> siècle*. Paris: PUF.

Haac, O. A. (ed.) (1995) *The Correspondence of John Stuart Mill and Auguste Comte*. Translated and edited by O.A. Haac, with an introduction by A. Kremer-Marietti. New Brunswick & London: Transaction Publishers.

Hacking, I. (1996) "The Disunities of the Sciences." In P. Galison & D. J. Stump (eds.), *The Disunity of Science. Boundaries, Contexts, and Power*. Stanford: Stanford University Press, pp. 37-74.

Haking, L., Saint-Simon, H. de, Rodringues, O., Duvergier, J.-P. *et alii* (1825) *Opinions littéraires, philosophiques, et industrielles*. Paris: Galerie de Bossange.

Hamilton, A. (1998) "Mill, Phenomenalism, and the Self." In J. Skorupski (ed.), *The Cambridge Companion to John Stuart Mill*, pp. 139-75.

Harrington, A. (1987) *Medicine, Mind, and the Double Brain. A Study in Nineteenth-Century Thought*. Princeton: Princeton University Press.

Hattiangadi, J. N. (1981) "Bain, Alexander." In C. C. Gillispie (ed.), *Dictionary of Scientific Biography*. New York: Scribner, pp. 403-4

Hayek, F. A. (1951) *John Stuart Mill and Harriet Taylor. Their Correspondence and Subsequent Marriage*. London: Routledge & Kegan Paul.

Hayek, F. A. (1979) *The Counter-Revolution of Science. Studies on the Abuse of Reason*. Second Edition. Indianapolis: The Liberty Fund.

Heilbron, J. (1995) *The Rise of Social Theory*. Translated by S. Gogol. Cambridge: Polity Press.

Helvétius, C.-A. (1758) *De l'Esprit*. Paris: Durand.

Herschel, J. (1987) *A Preliminary Discourse on the Study of Natural Philosophy*. Foreword by A. Fine. Chicago & London: The University of Chicago Press.

Heyd, T. (1989) "Mill and Comte on Psychology." *Journal of the History of the Behavioral Sciences*, 25, pp. 125-138.

Hoffmann, P. (1977) *La Femme dans la pensée des Lumières*. Paris: Ophrys.

Hume, D. (2000) *A Treatise of Human Nature*. Edited by D.F. Norton and M.J. Norton. Oxford: Oxford University Press.

Huxley, T. H. (1872) *Lay Sermons, Addresses, and Reviews*. Fourth edition. London: Macmillan & Co.

Jacobs, J.E. (2002) *The Voice of Harriet Taylor Mill*. Bloomington: Indiana University Press.

Jacyna, L. S. (1984) "Principles of General Physiology: The Comparative Dimension to British Neuroscience in the 1830s and 1840s." In W. Coleman & C. Limoges (eds.), *Studies in History of Biology*. Vol. 7. Baltimore & London: The John Hopkins University Press, pp. 47-92.

Kamm, J.F. (1977) *John Stuart Mill in Love*. London : Gordon and Cremonesi.

King, T. (1834) *The Substance of a Lecture, Designed as an Introduction to the Study of Anatomy Considered as the Science of Organization; and Delivered at the Re-Opening of the School, founded by the late Joshua Brookes, Esq. . In Blenheim Street, October 1<sup>st</sup>, 1833*. London: Longman, Rees, Orme, Brown, Green, and Longman.

Kinzer, B.L. , Robson, A.P. & Robson, J.M. (1992) *A Moralist in Parliament. John Stuart Mill at Westminster 1865-1868*. Toronto: University of Toronto Press.

Klein, D.B. (1970) *A History of Scientific Psychology. Its Origins and Philosophical Background*. London: Routledge & Kegan Paul.

Kofman, S. (1978) *Aberrations. Le devenir-femme d'Auguste Comte*. Paris: Aubier-Flammarion.

Kubitz, O. A. (1932) *The Development of John Stuart Mill's System of Logic*. Urbana: The University Press of Illinois.

Lanteri-Laura, G. (1993) *Histoire de la phrénologie. L'homme et son cerveau selon F. J. Gall*. Second edition. Paris: PUF.

Leary, D.E. (1982) "The Fate and Influence of John Stuart Mill's Proposed Science of Ethology." *Journal of the History of Ideas*, 43:1, pp. 153-162.

Le Bras-Chopard, A. (2003) "L'idéal féminin d'Auguste Comte. Convergences et dissonances avec ses contemporains socialistes." In M. Bourdeau, J.-F. Braunstein & A. Petit (eds.), *Auguste Comte Aujourd'hui*. Paris: Kimé, 2003, pp. 170-183

Leuret, F & Gratiolet, P. (1839) *Anatomie comparée du système nerveux considéré dans ses rapports avec l'intelligence*. Vol. I, Paris: J.-B. Baillière & fils.

Lévy-Bruhl, L. (1903) *The Philosophy of Auguste Comte*. Translated by K. de Beaumont-Klein, with an introduction by F. Harrison. London: Swan, Sonnenschein & Co.

Littré, E. (1864) *Auguste Comte et la philosophie positive*. Second edition. Paris: Hachette.

[Lyall, W.R.?] (1815) "The Physiognomical System of Doctors Gall and Spurzheim." *Quarterly Review*, pp. 159-78.

Lyons, W. (1986) *The Disappearance of Introspection*. Cambridge: The MIT Press, 1986.

Manuel, F. E. (1956), "From Equality to Organicism.", *Journal of the History of Ideas*, 17:1, pp. 54-69.

Manuel, F. E. (1962) *The Prophets of Paris*. Cambridge: Harvard University Press.

Martineau, J. (1833) "On the Life, Character, and Works of Dr. Priestley." *Monthly Repository*, VII, pp. 19-30, 84-8 & 231-41;

McLaren, A. (1974) "Phrenology: Medium and Message.", *The Journal of Modern History*, 46:1, pp. 86-97.

Mill, A. J. (1960) *John Mill's Boyhood Visit to France*. Toronto: University of Toronto Press.

Mill, J. (1828) *Essays*, London: J. Innes.

Mill, J. (1869) *Analysis of the Phenomena of the Human Mind. A New Edition with Notes Illustrative and Critical by Alexander Bain, Andrew Findlater, and George Grote. Edited with Additional Notes by John Stuart Mill*. London: Longmans, Green, and Dyer.

Mill, J. S. (1963) *The Earlier Letters of John Stuart Mill. 1812-1848*. Edited by F. E. Mineka, with an introduction by F.A. Hayek. London & Toronto: University of Toronto Press and Routledge & Kegan Paul.

Mill, J.S. (1965) *Principles of Political Economy, with Some of Their Applications to Social Philosophy*. Edited, with a Textual Introduction, by J.M. Robson. Introduction by V.W. Bladen. Toronto & London: Toronto & London: University of Toronto Press and Routledge & Kegan Paul.

Mill, J.S. (1967) *Essays on Economics and Society*. Edited, with a Textual Introduction, by J.M. Robson. Introduction by L. Robbins. Toronto & London: University of Toronto Press and Routledge & Kegan Paul.

Mill, J.S. (1969) *Essays on Ethics, Religion and Society*. Edited, with a Textual Introduction, by J.M. Robson. Introduction by F. E. L. Priestley. Toronto & London : University of Toronto Press and Routledge & Kegan Paul.

Mill, J. S. (1972) *The Later Letters of John Stuart Mill. 1849-1873*. Edited by F. E. Mineka and D. N. Lindley. London & Toronto: University of Toronto Press and Routledge & Kegan Paul.

Mill, J. S. (1973) *A System of Logic, Ratiocinative and Inductive, Being a Connected View of the Principles of Evidence and the Methods of Scientific Investigation*. Edited, with a textual introduction, by J. M. Robson and with an introduction by R. F. McRae. Toronto & London: University of Toronto Press and Routledge & Kegan Paul.

Mill, J.S. (1977) *Essays on Politics and Society*. Edited, with a Textual Introduction, by J.M. Robson. Introduction by A. Brady. Toronto & London: University of Toronto Press and Routledge & Kegan Paul.

Mill, J. S. (1978) *Essays on Philosophy and the Classics*. Edited, with a textual introduction by J.M. Robson. Introduction by F.E. Sparshott. Toronto & London: University of Toronto Press and Routledge & Kegan Paul.

Mill, J. S. (1979) *An Examination of Sir William Hamilton's Philosophy*. Edited, with a textual introduction by J.M. Robson. Introduction by A. Ryan. Toronto & London: University of Toronto Press and Routledge & Kegan Paul.

Mill, J. S. (1981) *Autobiography and Literary Essays*. Edited, with an introduction, by J. M. Robson and J. Stillinger. Toronto & London: University of Toronto Press and Routledge & Kegan Paul.

Mill, J. S. (1984) *Essays on Equality, Law, and Education*. Edited, with a textual introduction, by J. M. Robson. Introduction by Stefan Collini. Toronto & London: University of Toronto Press and Routledge & Kegan Paul.

Mill, J. S. (1985) *Essays on French History and French Historians*. Edited, with a textual introduction, by J. M. Robson. Introduction by J. C. Cairns. Toronto & London: University of Toronto Press and Routledge & Kegan Paul.

Mill, J. S. (1986) *Newspaper Writings*. Edited by A. P. Robson and J. M. Robson. Introduction by A. P. Robson. Textual introduction by J. M. Robson. Toronto & London: University of Toronto Press and Routledge & Kegan Paul.

Mill, J.S. (1988) *Journal and Debating Speeches*. Edited by John M. Robson. London & Toronto: University of Toronto Press and Routledge & Kegan Paul.

Mill, J. S. (1990) *Miscellaneous Writings*. Edited by J. M. Robson. Toronto & London: University of Toronto Press and Routledge & Kegan Paul.

Moreau de la Sarthe, J.-L. (1803) *Histoire naturelle de la femme, suivie d'un Traité d'Hygiène appliquée à son régime physique et moral aux différentes époques de la vie*. Paris: Duprat, Letellier & compagnie.

Moses, C. G. (1982) "Saint Simonian Men / Saint Simonian Women: The Transformation of Feminist Thought in 1830s' France." *Journal of Modern History*, 54, pp. 240-67.

Noble, D. (1846) *The Brain and its Physiology; a Critical Disquisition on the Methods of Determining the Relations subsisting between the Structure and Functions of the Encephalon*. London: J. Churchill.

Okin, S. M. (1992) *Women in Western Political Thought*. Princeton: Princeton University Press.

Pankhurst, R. K. P. (1957) *The Saint Simonians, Mill and Carlyle. A Preface to Modern Thought*. London: Sidgwick & Jackson.

Pappe, O. H. (1960) *John Stuart Mill and the Harriet Taylor Myth*. Victoria: Melbourne University Press.

Paris, J. A. (1822) *Pharmacologia; comprehending the Art of Prescribing upon Fixed and Scientific Principles; together with the History of Medicinal Substances*. London: Phillips.

Petit, A. & Bensaude-Vincent, B. (1976) "Le féminisme militant d'un auguste phallocrate (Auguste Comte, 'Système de politique positive')." *Revue philosophique*, 3, pp. 293-311.

Petit, A. (1994) "Quelle place pour la psychologie dans le positivisme?" *Revue de synthèse*, 105:3-4, pp. 393-415

Pickering, M. (1993) *Auguste Comte, An Intellectual Biography*. Cambridge : Cambridge University Press.

Pickering, M. (1996) "Angels and Demons in the Moral Vision of Auguste Comte." *Journal of Women's History*, 8, pp. 10-40.

(1808) *Rapport sur un mémoire de MM. Gall et Spurzheim, relatif à l'anatomie du cerveau, Institut de France, classe des sciences mathématiques et physiques, séances du 25 avril et 2 mai 1808*. In *Bibliothèque médicale*, XXI, pp. 3-42 and 133-57.

Rendall, J. (1999) "Clio, Mars and Minerva: The Scottish Enlightenment and the Writing of Women's History." In T.M. Devine and J.M. Young (eds.), *Eighteenth Century Scotland: New Perspectives*. East Linton, Scotland : Tuckwell Press, pp. 134-51.

Renneville, M. (2000) *Le langage des crânes. Une histoire de la phrénologie*. Paris: Institut d'édition Sanofi-Synthélabo.

(1809) "Report on a Memoir of Drs. Gall and Spurzheim, relative to the Anatomy of the Brain." *Edinburgh Medical and Surgical Journal*, 5, pp. 320-4.

Ribot, T. (1914) *La psychologie anglaise contemporaine*. Third edition. Paris: Félix Alcan.

Ring, J. (1985) "Mill's The Subjection of Women: The Methodological Limits of Liberal Feminism.", *The Review of Politics*, 47, pp. 27-44.

Ring, J. (1991) *Modern Political Theory and Contemporary Feminism. A Dialectical Analysis*. Albany: State University of New York University Press.

Robson, J.M. (1998) "Civilization and Culture as Moral Concepts." In J. Skorupski (ed.), *The Cambridge Companion to Mill*, pp. 338-71

Ronsin, F. (1992) *Les Divorciaires. Affrontements politiques et conceptions du mariage dans la France du XIX<sup>e</sup> siècle*. Paris : Aubier.

Roussel, P. (1775) *Système physique et moral de la femme ou Tableau philosophique de la constitution, de l'état organique, du tempérament, des mœurs, & des fonctions propres au sexe*. Paris: Vincent.

Roussel, P. (1805) *Système physique et moral de la femme ou Tableau philosophique de la constitution, de l'état organique, du tempérament, des mœurs, & des fonctions propres au sexe. Nouvelle édition augmentée de l'éloge historique de l'auteur.* Paris: Crapart, Caille et Ravier.

Roussel, P. (1869) *Système physique et moral de la femme. Nouvelle édition, contenant une notice biographique sur Roussel, une esquisse du rôle des émotions dans la vie de la femme, et des notes par le Dr Cerise.* Paris : V. Masson.

Ryan, A. (1974) *J. S. Mill.* London & Boston: Routledge & Kegan Paul.

Russett, C. (1989) *Sexual Science. The Victorian Construction of Womanhood.* Cambridge: Cambridge University Press.

Rylance, R. (2000) *Victorian Psychology and British Culture. 1850-1880.* Oxford: Oxford University Press.

Scharff, R. C. (1995) *Comte After Positivism.* Cambridge: Cambridge University Press.

Schiebinger, L. (1987) "Skeletons in the Closet: The First Illustrations of the Female Skeleton in Eighteen-Century Anatomy." In C. Gallagher & T. Laqueur (eds), *The Making of the Modern Body. Sexuality and Society in the Nineteenth Century.* Berkeley: University of California Press, pp. 42-82.

Shanley, M.L. (1998) "The Subjection of Women." In J. Skorupski (ed.), *The Cambridge Companion to John Stuart Mill*, pp. 396-422.

Shapin, S. (1975) "Phrenological Knowledge and the Social Structure of Early Nineteenth-Century Edinburgh." *Annals of Science*, 32, pp. 219-43;

Shapin, S. (1979) "The Politics of Observation: Cerebral Anatomy and Social Interests in the Edinburgh Phrenology Disputes." In R. Wallis (ed.), *On the Margins of Science: the Social Construction of Rejected Knowledge*, Sociological Review Monograph, 27. Keele: University of Keele, pp. 139-78.

Shapin, S. (1979) "Homo Phrenologicus: Anthropological Perspectives on an Historical Problem." In B.S. Barnes & S. Shapin (eds.), *Natural Order: Historical Studies of Scientific Culture.* Beverly Hills & London: Sage Publications, pp. 41-71.

Shortland, M. (1987) "Courting the Cerebellum: Early Organological and Phrenological Views of Sexuality." *British Journal of the History of Science*, 20, pp. 173-99.

Simon, W.M. (1973) *European Positivism in the Nineteenth Century. An Essay in Intellectual History.* Port Washington, N. Y. / London: Kennikat Press.

Skorupski, J. (1989) *John Stuart Mill.* London: Routledge.

Skorupski, J. (1998) "Introduction: The Fortunes of Liberal Naturalism." In J. Skorupski (ed.), *The Cambridge Companion to John Stuart Mill.* Cambridge: Cambridge University Press, pp. 1-34.

Skorupski; J. (ed.) (1998) *The Cambridge Companion to John Stuart Mill*. Cambridge: Cambridge University Press.

Smith, G.W. (2000) "J.S. Mill on What We Don't Know about Women." *Utilitas*, 12:1, pp. 41-61.

Soemmerring, S. T. von (1796) *Tabula sceleti feminini juncta descriptione*. Utrecht.

Spurzheim, J.G. (1815) *The Physiognomical System of Drs. Gall and Spurzheim; founded on an Anatomical and Physiological Examination of the Nervous System in general, and of the Brain in Particular; and indicating the Dispositions and Manifestations of the Mind*. London: Baldwin, Cradock, and Joy.

Spurzheim, J.G. (1818) *Observations sur la folie ou Sur les derangements des fonctions morales et intellectuelles de l'homme*. Paris: Treuttel & Würtz.

Spurzheim, J.G. (1818) *Observations sur la phrénologie, ou connaissance de l'homme moral et intellectuel fondée sur les fonctions du système nerveux*. Paris: Treuttel & Würtz.

Spurzheim, J.G. (1820) *Essai philosophique sur la nature morale et intellectuelle de l'homme*. Paris: Treutell & Würtz.

Spurzheim, J.G. (1821) *A View of the Elementary Principles of Education, Founded on the Study of the Nature of Man*. Edinburgh: A. Constable & Co.

Spurzheim, J.G. (1822) *Essai sur les principes élémentaires de l'éducation*. Paris: Treutell & Würtz.

Spurzheim, J.G. (1833) *Phrenology in Connexion with the Study of Physiognomy*. Boston: Marsh, Capen, & Lyon.

(1765) "Squelette." In *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*. Edited by Diderot and D'Alembert. Fifteenth Volume. Neufchastel : Samuel Faulche, pp. 482-3.

Staum, M. S. (1980) *Cabanis. Enlightenment and Medical Philosophy in the French Revolution*. Princeton: Princeton University Press.

Staum, M. S. (1995) "Physiognomy and Phrenology at the Paris Athénée." *Journal of the History of Ideas*, 56: 3, pp. 443-62.

Staum, M. S. (2003) *Labeling People. French Scholars on Society, Race, and Empire, 1815-1848*. Montreal & Kingston: McGill-Queen's University Press.

Stephen, J.F. (1967) *Liberty, Equality, Fraternity*. Edited with an introduction and notes by R.J. White. Cambridge: Cambridge University Press.

Stillinger, J. (1991) "John Stuart's Mill Education: Fact, Fiction, and Myth." In M. Laine (ed.), *A Cultivated Mind. Essays on J. S. Mill Presented to John M. Robson*. Toronto: University of Toronto Press, 1991, pp. 19-43.

Stove, D. (1993) "The Subjection of John Stuart Mill." *Philosophy*, 68, pp. 5-13.

Struik, D.J. (1981) "Gergonne, Joseph Diez." In C. C. Gillispie (ed.), *Dictionary of Scientific Biography*. New York: Scribner, vol. 5, pp. 367-8.

(1884) *Testament d'Auguste Comte, avec les pièces qui s'y rapportent. Publié par ses exécuteurs testamentaires conformément à ses dernières volontés*. Paris.

Thiel, I. (1994) "On Stove on Mill on Women." *Philosophy*, 69, pp. 100-1.

Thomas, K. B. (1981) "Carpenter, William Benjamin." In C. C. Gillispie (ed.), *Dictionary of Scientific Biography*. New York: Scribner, pp. 87-9.

Thomson, T. (1802) *A System of Chemistry*. London: Robinson.

Trimen, H. (1873) "John Stuart Mill's Botanical Studies." In H. R. Fox Bourne, *John Stuart Mill: Notices of his Life and Works, together with Two Papers Written by Him on the Land Question*. London: E. Dallow, pp. 28-31.

Urbinati, N. (1991) "John Stuart Mill on Androgyny and Ideal Marriage." *Political Theory*, 19, pp. 626-648.

Van Wyhe, J. (2002) "The Authority of Human Nature: the *Schädellehre* of Franz Joseph Gall." *British Journal of the History of Science*, 35, pp. 17-42.

Van Whye, J. (2004) "Was Phrenology a Reform Science? Towards a New Generalization for Phrenology.", *History of Science*, XIII, pp. 313-31.

Van Wyhe, J. (2004) *Phrenology and the Origins of Victorian Naturalism*. Aldershot: Ashgate.

Varouxakis, G. (2002) *Mill on Nationality*. London & New York: Routledge.

Vernon, R. (1986) "The Political Self: Auguste Comte and Phrenology.", *History of European Ideas*, 7:3, pp. 271-86.

Vimont, J. (1831-1835) *Traité de phrénologie humaine et comparée*. 2 volumes. Paris : J.-B. Baillière.

Virchow, R. (1857) *Untersuchungen über die Entwicklung des Schadelgrundes*. Berlin: Reimer.

Virey, J.-J. (1815) "Femme (anthropologie et physiologie)." and "Femme (morale)." In *Dictionnaire des sciences médicales par une société de médecins et de chirurgiens*. Paris : Panckoucke, 1815. Volume 14, pp.503-54 & pp.554-72.

Vogt, K. (1864) *Lectures on Man: his Place in Creation and in the History of the Earth*. Edited by J. Hunt. London: Longman, Green, Longman, and Roberts for the Anthropological Society.

Williams, E. A. (1994) *The Physical and the Moral. Anthropology, Physiology, and Philosophical Medicine in France, 1750-1850*. Cambridge: Cambridge University Press.

Wilson, F. (1983) "Mill's 'Proof' of the Utility and the Composition of Causes." *Journal of Business Ethics*, 2:2, pp. 135-55.

Wilson, F. (1990) *Psychological Analysis and the Philosophy of John Stuart Mill*. Toronto: University of Toronto Press.

Wilson, F. (1991) "Mill and Comte on the Method of Introspection." *Journal of the History of the Behavioral Sciences*, 27, pp.107-29.

Wilson, F. (1998) "Mill on Psychology and the Moral Sciences." In J. Skorupski (ed.), *The Cambridge Companion to Mill*, pp. 203-54.

Winter, A. (1997) "The Construction of Orthodoxies and Heterodoxies in the Early Victorian Life Sciences." In B. Lightman (ed.), *Victorian Science in Context*. Chicago: University of Chicago Press, pp. 24-50.

Yeo, R. (1986) "Scientific Method and the Rhetoric of Science in Britain, 1830-1917." In J. A. Schuster & R. Yeo (eds.), *The Politics and Rhetoric of Scientific Method: Historical Studies*. Dordrecht & Lancaster: Reidel, pp. 259-97.

Yeo, R. (1993) *Defining Science. William Whewell, Natural Knowledge, and Public Debate in Early Victorian Britain*. Cambridge: Cambridge University Press.

Young, R.M. (1968) "Association of Ideas." In Philip P. Wiener (ed.), *Dictionary of the History of Ideas*. New York: Scribner's, vol. 1, pp. 111-18.

Young, R.M. (1970) *Mind, Brain and Adaptation in the Nineteenth Century. Cerebral Localization and its Biological Context from Gall to Ferrier*. Oxford: Clarendon Press.