1. Behavioural Economics and Policy for Pandemics: Pandemics as Tipping Points

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1. Pandemic as Tipping Points

Pandemics are uncommon occurrences in human history. Most individuals do not anticipate pandemics in their life and do not include them in their daily planning. Indeed, while several epidemics have erupted into formal pandemics in recent decades - such as the swine flu or the N1H1 - COVID-19 is the first pandemic in a century to have systematically impacted the entire world, killing millions of human lives (more than 6.5 million, at the time of writing), and upending global health and wellbeing, societies, economies, and labour markets all over the world.

Pandemics are "one-off" events that can have enduring effects on the way people perceive the world and their health, and how the political, economic, and health systems are organised. It is at the time of a pandemic, when the interests at stake are the largest, that individuals and institutions have a natural opportunity to cooperate. Pandemics can be seen as *tipping points* because they can radically affect the whole host of human behaviours, from physical and mental health to individual and societal wellbeing, from working conditions to leisure and organization of time, from interpersonal and family relations to economic and social activities, from beliefs and perceptions to attitudes and preferences. Given that pandemics give rise to sudden changes in those behaviours, social scientists can also see them as unfortunate natural experiments, an opportunity to learn more about how individual behaviours adjust to sudden and radical changes in needs and contexts.

The COVID-19 pandemic has indeed brought several behavioural challenges to global public attention and has highlighted the key role played in health outcomes, public health, and public policy in general by the complexities of human behaviour. Consistently with the notion that individuals tend to underestimate small probabilities, at the beginning of the pandemic, before the World Health Organisation had acknowledged it as such, COVID-19 was often compared to a flu epidemic, or even the seasonal flu. This likely affected how individuals interpreted risk information, often failing to understand the exponential risk that pandemics have, let alone the fatal consequences of the risk especially among older population. It is now time to start asking some questions. How has COVID-19 modified behaviours around the world so far? What insights have been learned from COVID-19 and the related policy responses? What are the underlying behavioural mechanisms in place? What is the evidence on changes in behaviours and attitudes in a pandemic?

This book examines from a behavioural economics and policy perspective to understand what we can learn on health-related behaviours in a pandemic, and the extent to which human behaviours have been at the core of individuals reactions to the COVID-19 pandemic. Furthermore, most chapters touch upon important policy responses.

One of the main lessons from the COVID-19 experience is that pandemics may act not only as tipping points but also as *magnifying glasses*: they amplify existing behavioural phenomena in nature, trends, and patterns, and make differences sharper and more salient. For example, the health, economic, and social consequences of COVID-19 have hit hardest the most disadvantaged segments of the populations, which already had poorer health outcomes and access to healthcare, worse socio-economic conditions, and more precarious jobs. Similarly, policy responses to COVID-19 have often made clearer which goal was the ultimate priority of many policymakers, experts, decision-makers, and stakeholders, for

example by explicitly pitting the reasons of opening the economic and business activities against the objective to protect human lives and public health.

2. Aims and Organization of This Book

This book is the product of recent insights and contributions on the COVID-19 pandemic by several scholars in behavioural economics and health policy who are, in one way or another, associated to the London School of Economics (LSE). The book also benefits from many years of working together with a variety of collaborators in leading academic universities, policy-making bodies, public health authorities, and international institutions. The aim of this book is to bring closer together the perspectives and contributions of behavioural economists specialising in health, health economists focused on behaviours, and scholars in behavioural public policy to distil lessons from the COVID-19 pandemic and to be able to better understand the preparedness and response to future pandemics

The book is proposed to fill a double existing gap. It will crystalise, for the first time, the main insights and lessons learned from the COVID-19 crisis from both a behavioural economics and a health policy perspective. At the same time, it will facilitate the conversation and the cross fertilization of these two disciplines, which are still quite disconnected, in informing and shaping the policy responses to future pandemics.

The book is organised in two main parts in addition to this introduction. The first part (chapters 2-13, edited by Matteo M Galizzi) report an overview of the main insights and contributions from the field of behavioural economics focusing on health applications. The second part (chapters 14-21, edited by Joan Costa-Font) reports an overview of the contributions of health economics and policy focusing on behavioural incentives and interventions. The two parts integrate and complement each other both substantially and methodologically, as the chapters in the first part tend to be informed mainly by online, lab,

and field experiments and by direct behavioural observation, whereas the chapters in the second part tend to leverage more theoretical and empirical analyses, often using large secondary datasets and surveys.

3. Main Contributions and Insights

Below we will provide a brief overview and summary of the main insights from each chapter.

In opening the first part of the book, *Chapter 2* by *Galizzi, Luptakova, Macis and Thode* put forward the argument that the main lessons that we have learnt from behavioural economics research to inform policy responses to future pandemics is that we should fully account for *human heterogeneity*. Not only people are highly heterogeneous in their preferences, attitudes, beliefs, perceptions, circumstances, and constraints, but they also make very heterogeneous decisions and respond very differently to behavioural interventions. As a result, behavioural economists and policymakers not only need to use the broadest and most comprehensive toolset of behavioural interventions, but they also need to systematically engage with experiments and randomised controlled trials to learn what works for whom.

Consistently with the above tipping points idea*, Loewenstein and Kinnane* in *Chapter 3* discuss the connections between the COVID-19 pandemic and another major contemporary emergency: the climate change crisis. They highlight similarities but also differences between the two global crises, discuss the key role played by human adaptation in the two crises, and offer some original lessons that can be learned from the COVID-19 pandemic about the climate change emergency.

Chapters 4-12 in the first part of the book delve deeper into some specific sources of heterogeneity in human behaviour in domains of risk, time and pro-social behaviour. *Guenther, Fedrigo and Sanders* in *Chapter 4* summarise the experimental evidence on the

impact of the COVID-19 pandemic on risk preferences, alongside the evolution of risk taking and risk perception during the pandemic, and on the role of heterogeneity in risk tolerance in health behaviours during COVID-19, including the so-called 'risk compensation' hypothesis.

Given that individual risky behaviour ins tightly dependent on the institutional and social environment individuals face*, Cerutti* in *Chapter 5* focuses specifically on the possible risk compensatory effects and unintended consequences related to wearing masks and face coverings, and reviews all the experimental studies conducted on mask-wearing before and after the COVID-19 pandemic.

Another chapter focus on time decision making and planning in a setting of increased risk of death. Indeed*, Hodges* in *Chapter 6* assesses the heterogeneity of end-of-life preferences, their evolution during the COVID-19 pandemic, and specifically the lessons learnt from behavioural economics experiments on advance care planning. *Adams-Phipps, Kamenicek and Schmitt* in *Chapter 7* examine the experience of *1DaySooner* during the pandemic and illustrate the key role of altruism and heterogeneous preferences in the context of volunteering for 'human challenge' trials.

Next, we focus on three chapters on the role of behavioural intervention design, and more specifically *Banerjee, Savani and Shreedhar* in *Chapter 8* discuss the empirical and experimental evidence on the evolution during the COVID-19 pandemic of public preferences in support of 'hard' behavioural interventions (e.g., mandates, bans) as opposed to 'soft' behavioural interventions, such as 'nudges. Next, *Brody, Saccardo and Dai* in *Chapter 9* summarise the experimental evidence on the different behavioural interventions to promote COVID-19 vaccination, with a particular emphasis on the nudging interventions and on the heterogeneity in the individual responses to such interventions. Finally, Kourtidis, Sternberg, Steinert, Büthe, Veltri, Fasolo and Galizzi in *Chapter 10* first distil evidence from

a review of the systematic reviews on the behavioural aspects of the COVID-19 pandemic, and then overview the experimental evidence available[1].

Three further chapters focus on direct behavioural observations, rather than experimental evidence: Delaney and Watson (*Chapter 11*) discuss the role of behavioural science in the COVID-19 response in Ireland; Oliver (*Chapter 12*) critically discusses the, more general, use of behavioural science during the pandemic; and Galizzi (*Chapter 13*) describes the main biases by 'expert' decision-makers emerged during the COVID-19 pandemic responses[2].

Opening the second part of the book, the books contain three chapter on the mental health effects of the pandemic. Indeed, *Chapter 14* by *Prieto and Vall* touches upon health behaviours and mental health. Drawing from evidence from Spain, the chapter examines evidence of the first months of the pandemic on mental health and health behaviours. They document important gender effects on mental health alongside critical changes in the use of medical resources, use of drugs and daily consumption that were the result of COVID-19 risk exposure. Such trends in behaviours suggest that the pandemic and related lockdowns disrupted individual habits in a significant manner.

A complementary contribution by *Daniel Banko-Ferran, Rania Gihleb and Osea Giuntella*, in *Chapter 15* reviews the evidence on the effects of the COVID-19 pandemic on health behaviours and explores the trends in observational evidence of the effect of the pandemic on mental health, anxiety medications, and time use. More specifically, they document specifically relevant changes in behaviours among vulnerable populations, the

[1] The chapter is gathered as part of the behavioural economics work package WP5 of the European Union's Horizon 2020 research and innovation program *Pan European Response to the Impacts of COVID-19 and future Pandemics and Epidemics* (PERISCOPE), grant agreement no. 101016233.
[2] The chapter is a shorter, revised, version of the original article: Galizzi MM (2022). Behavioural public health? Experts' biases and responses to pandemics. *Sistemi Intelligenti*, 34(2), 371-401, doi: 10.1422/105045, https://www.rivisteweb.it/doi/10.1422/105045.

necessary public health measures implemented to mitigate its spread. More specifically, they document that consistently with evidence of other comparable disasters, the mental impact of COVID-19 is likely to outlast its physical impact.

Finally, Costa-Font and Vilaplana in Chapter 16 examine the mental health effects of lockdowns and document that, whilst a 'preventive' lockdown in a low/moderate mortality environment increases symptoms of depression and anxiety, in a high mortality setting lockdowns actually can mitigate such negative effects, particularly on anxiety which they coin as 'welcomed lockdown'.

Turning to examining the effects on some specific population groups, *Costa-Font* examines in *Chapter 17* how the COVID-19 pandemic has modified decision making regarding old age, as well as the behaviours of older age individuals such as the probability of retirement, and access to care for older age seniors. The chapter reveals the importance of trusted providers, and specifically the role of ageing and age-specific stereotypes in influencing individuals' decision making with regards to old age.

Next, *Chapter 18* by *Sudsataya, Asaria, Costa-Font and Achaiki* focus on minority ethnic groups. Indeed, provide an assessment of the state of the art, explaining the presence of an ethnic minority vector driving vaccine hesitancy, as well as a list of potential behavioural policy interventions to curb such inequality.

Another set of chapters look at questions related to health care use that result from the COVID-19 pandemic. Specifically, *Chapter 19* by *Conolly and Srivastava* documents the effect of the pandemic shock and subsequent COVID-19 policies on the rise of digital health solutions and technologies with a focus on health care settings and discusses the role of behavioural insights and policy proposals.

Costa-Font, Asaria and Mossialos in *Chapter 20* examine the effect of the so-called 'erring on the side of rare events' bias in explaining vaccina authorisation in Europe.

A final section in the book discusses the role of some behavioural mechanisms explaining decision making during a pandemic, and more specifically the role of trust and risk perceptions. In *Chapter 21 Rudisill and Harrison* discuss the role of trust in impacting decision making in a pandemic such as COVID-19. Drawing on a multi-country study examining trust in a variety of key pandemic-related stakeholders (e.g., government, public health institutions), they show how the variation in trust have potential implications for risk perceptions and key health behaviours.

Finally, in *Chapter 22*, *Adulami, Costa-Font and Salmasi* examine, using data from a large multicounty survey, how individuals perceive risks in a pandemic, compared to similar risks such as food poisoning and influenza.