Locke and Hume's *philosophical theory of color* is investigated through a case study of Esref Armagan, an artist born blind

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Abstract

This article investigates Locke and Hume's *philosophical theory of color*, through a study of the fine art practice of Esref Armagan, a Turkish artist who has never seen. The *philosophical theory of color* is important to the cultural history of blindness, as it has been used to justify early curricula in schools for the blind. This study is based on the following research question: Can people who are born blind understand color in the fine arts? The study is part of a grounded methodology study of art practices and visual impairment, whose findings informed a participatory study of museum access. This article examines part of the study's first phase, and focuses on the practice of the Turkish artist, Esref Armagan, who was born without sight. Data was collected through a translated correspondence interview with Esref Armagan, and an examination of research articles focusing on Esref's drawing skills. The study's data is analyzed using Anderson, Krathwohl & Bloom's learning hierarchy. It is found that Esref has an extensive knowledge of color and other visual concepts, developed symbolically. What's more, not only has Esref a knowledge of color, but he can use this knowledge creatively in accordance with Anderson, Krathwohl & Bloom's highest level of learning (level 6). The article concludes that Locke and Hume's *philosophical theory of color* can be challenged in the context of the creative

fine arts, as Esref could develop unique, creative images using color. Therefore, our application of the *philosophical theory of color* on the education of students with visual impairments, and the pedagogical and andragogical practice based on these theories should be questioned.

Introduction

In this article, Locke and Hume's *philosophical theory of color* is tested through a case study of Esref Armagan, an artist who was born completely blind – in this article, the term *philosophical theory of color* is used to describe the theory that color is incapable of being understood through anything other than an experience of past or present sight. Although Locke and Hume's *philosophical theory of color* has been challenged by philosophers working through the academic tradition of deductive logic (see for example Waxman, 1993), no studies of creativity have questioned this theory through an analysis of what can be described as higher forms of learning and understanding (Anderson, Krathwohl & Bloom, 2001). The study below questions this theory through a review of Esref's learning experiences and his practice as an artist who was born completely blind.

This article is important, as Locke and Hume's writing heavily influenced the philosophy and psychology of phenomenology. Subsequently, phenomenology, particularly phenomenological psychology, had a significant influence on the fine art and museum education and technology of people who are blind (Author, 2015). Moreover, phenomenology also had a significant influence on the way what is referred to as the visual arts through perception is understood (see for example Gombrich, 1984).

Consequently, the primary aim of this article is to begin a debate on the nature of learning mediated by sensory inputs other than the visual experience of objects and environments. The secondary aim of this article is to inform access to what are considered to be the visual arts for those who are visually impaired and inform a current project examining access to museums (ARCHES, 2018). This access is either through the creative arts in education, arts practices, or through the study of theory or the history of genres of art or artists.

The Context of Locke and Hume's *Philosophical Theory of Color*

Many contemporary writers observe that the twentieth and early twenty-first century study of blindness and perception date from philosophies of the English and Irish Enlightenment in the latter years of the seventeenth century (Gregory, 1974, 1987; Paulson, 1987; Jay, 1994; Author, 2015, 2018); although Author (2015), Paulson (1987) and Jay (1994) argue that similar writing from the early seventeenth century in the first French enlightenment, which is now referred to as the mind-body problem (Descartes, 1984), was the primary influence on this study - the mind-body problem is the philosophical theory linking perception, conscious experience, embodiment, understanding and knowing through consciousness (Kim, 2018).

Author (2015, 2018) also observes that this study influenced the methodology of studying blindness, giving rise to an image of people with visual impairments as a man born completely blind, with no sensory experience of color – Author subsequently refers to this methodology as the cult of the *man born completely blind*, with the person described always being male. This cult, it is argued, also led Nagel (1974) to draw analogies between people who are visually impaired to bats, whose perceptual experience has evolved to sense distance through sound. Author observes that this philosophical methodology was greatly influenced by a question posed to John Locke by William Molyneux:

> Pour Les Auteurs de la Biblioteque
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> Monsieur Waesberg
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> March and Librair
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Per Lond. 62

6th July 88

Dublin July 88

A problem proposed to the author of the Essai Philosophique Consernant L'Enteneem

A man being born blind and having a globe and a cube, nigh of the same bigness, committed into his hand, and being taught or told, which is called the globe and which the cube, so as easily to distinguish them by touch or feeling; then both things taken from him, and laid on a table. Let us suppose his sight restored to him; whether he could, by his sight, and before he touch them, know which is the globe and which the cube? So whether he could not reach them though they were removed 20 or 1000 feet from him?

If the learned and ingenious author of this fore mentioned treatise think this problem worth his consideration and answer, he may at any time direct it to one, that much esteem him, and is,

his humble servant,

Will: Molyneux

High Ormond's Gate in Dublin, Ireland

Letter from William Molyneux to John Locke, 7th July 1688. From the correspondence of John Locke, The John Locke Collection, Bodlean Library, Oxford University.

Molyneux's question was reproduced in the section On Perception, in the second edition of Locke's (2001) *Essay Concerning Human Understanding*, which was published on Locke's return to England after a period of political exile in France – the first edition of Locke's Essay

was published in French in 1688 and it is assumed the reference to the essay at the start of Molyneux's letter refers to this original essay (Author, 2015).

At the time Locke's second edition of the *Essay* was published, the study of human consciousness through learned perception remained largely untested by philosophers; although Boyle (1664) described a study of a man who claimed he could feel colors by a physician earlier in the century. However, in its range, this question did not simply address the narrow study of a relationship between touch and sight, it became fundamental to understanding the perception and comprehension of consciousness – i.e. what people understand of the world around them, through an "image" of the world in their minds – that was assumed to have equivalence in touch and vision.

However, it can be argued that the focus of Locke's study was not simply inspired by a material and cognitive understanding of perception, as Gregory (1974) later argued in his description of cross-modal transfer; i.e. the ability of the mind to interpret information in one sense through another sense, such as the size of an object through touch, and the recognizing of an object of the same size through sight. Its origin was part of a more complex philosophy of mind and morality that questioned what was known in the human mind, and the elusive link between perception and behavior (Author, 2015). Consequently, in his *Essay* Locke gave examples of blindness in a number of passages beyond Molyneux's question to show what he believed people who were blind from birth could not understand. These examples were designed to support his thesis that consciousness could only be learnt from birth.

For example, under the heading Further Considerations Concerning Innate Principles Both Speculative and Practical, Locke argued that the experience of all sensory modalities was learning. And, in this learning a consciousness understanding of color was of primary

importance. More importantly, in this chapter he identified memory of color as the foremost mode of understanding, rather than a more inward notion of inherent consciousness; this was an image of consciousness which was held to be the key to human understanding. As Locke stated in his text:

> [A] blind man I once talked with, who lost his sight by the smallpox when he was a small child [had] no more notion of colors than one born blind. I ask whether anyone can say this man had any ideas of colors in his mind, any more than one born blind? And I think nobody will say that either of them had in his mind any idea of colors at all …
>
> [The] truth is, ideas and notions are no more born in us than arts and sciences, though some of them indeed offer themselves to our faculties more readily than others and are therefore more generally received, though that too be according as the organs of our bodies and powers of our minds happen to be employed: God having fitted men with faculties and means to discover, receive, and retain truths, accordingly as they are employed. (Locke, 2001: pp. 41–42).

Less than sixty years later, Hume's (1748) *Essay Concerning Human Understanding* was greatly influenced by Locke's writing. Working on Locke's premise of *tabula rasa,* Hume also argued cognitive notions were particular to specific senses, such as color to sight or sound to hearing. These senses, it was argued, were materially discrete and dependent on the ability to perceive the corresponding sensory data that informed them. Furthermore, Hume agreed that sensory data was obtained from birth and informed an image of the world in the mind.

Amongst the critics of Hume's Essay was Reid (2000), a distinguished fellow of Glasgow University, whom Hume later entered into correspondence with on the topic of the inherent aspects of perception. In 1764, Reid had published his own essay, An *Inquiry into the Human*

Mind on the Principles of Common Sense, in which he argued that thought (i.e. what is now called cognition, which is the precursor to behavior) was thought to be derived solely from visual and aural perceptions. Thus, perceptual experience could not be stimulated through any other means of metaphysical or material enlightenment other than direct perceptions of concepts through their individual senses.

In his response to Reid's argument, Hume gave the following materialistic rejoinder in a letter to a correspondent intermediary from Aberdeen named Blair in 1762. This response in particular discussed the potential for knowledge acquisition in born blind and deaf people as follows:

> The Author supposes, that the Vulgar do not believe the sensible Qualities of Heat, Smell, Sound, & probably Colour to be really in the Bodies, but only their Causes or something capable of producing them in the Mind. But this is imagining the Vulgar to be Philosophers & Corpuscularians from their Infancy. You know what pains it cost Malebranche & Locke to establish that Principle … Philosophy scarce ever advances a greater Paradox in the Eyes of the People, than when it affirms that Snow is neither cold nor white: Fire hot nor red.
>
> Thirdly. It surprizd me to find the Author affirm, that our Idea of Extension is nothing like the Objects of Touch. He certainly knows, that People born blind have very compleat Ideas of Extension<s>; & some of them have even been great Geometers. Touch alone gives us an Idea of three Dimensions.
>
> Fourthly, If I comprehend the Author's Doctrine … it leads us back to innate Ideas. This I do not advance as an Objection: For nothing ought ever to be supposd finally decided in Philosophy, so as not to admit of a new Scrutiny; but only that, I think, the Author

> affirms I had been hasty, & not supported by any Colour of Argumen[t] when I affirm, that all our Ideas are copy'd from Impressions. I have endeavourd to build that Principle on two Arguments. The first is <a Detail> desiring any one to make a particular Detail of all his Ideas, where he would always find that every Idea had a correspondent & preceding Impression. If no Exception can ever be found, the Principle must remain incontestible. The second is, that if you exclude any <I> particular Impression … as Colours to the blind, Sound to the Deaf, you also exclude the Ideas. (Hume in Wood, 1986: P. 416)

There was, however, one earlier exception within Hume's *philosophical theory of color*, which supported a more creative and higher order theory of visual imagination as having material properties. In his Essay, Hume (1748) argued that that if a person had an experience of a color at its darkest or lightest then he or she would have the imagination to conjure-up shades in the middle of its spectrum. As an illustration, Hume gave the example of the color red whose unseen middle shades could be imagined when only the lightest and darkest shades of red had previously been experienced.

Why is Locke and Hume's *philosophical theory of color* important?

Firstly, Hume was a significant influence on the philosopher Blacklock (Author, 2015), who wrote the first essay proposing schools for the blind under his pen name, Demodocus (1774). Blacklock also subsequently helped to start the influential Edinburgh Asylum (Author, 2015). Secondly, Hume influenced Husserl's (2012) phenomenology, and Husserl's writing subsequently influenced psychological phenomenology through writers such as Katz (1925), who also influenced theorists on the arts education of people who were blind, such as Revesz (1950). As Revesz wrote:

> [From] what sources could a blind person, who has never seen the world with all its wealth of forms and color, derive those manifold experiences?... [No] one born blind is able to become aware of the diversity of nature and to apprehend all the rich and various appearances of objects. (Revesz, 1950: pp. 316–17)

Given such influential theories on blindness and perception and their later impact on inclusion (Author, 2015), were Locke and Hume correct in assuming people without experience of sight could not understand color? The following case study of Esref Armagan investigates this theory. This case study is split into three sections. The first section discusses the research methodology, data collection and framework of analysis used in this study. The second section analyses the learning practice of Esref Armagan, and compares it to Locke and Hume's *philosophical theory of color*. The third section provides conclusions to this interrogation.

Methodology

The methodology used in this study was Grounded Methodology (GM) (Author, 2012), an adapted form of Grounded Theory (GT) (Glaser & Strauss, 1967; Strauss & Corbin, 1998). The GM process was comprised of three phases, the open, axial and selective phases, and during these three phases, data was simultaneously collected and analyzed in a progressively more focused way. The GM used in this study also encouraged the evolution of culturally deduced theories, which evolved through discourse or narratives in unique cultural settings and employed thick description to form an interpretive cultural anthropology (Geertz, 1983, 1989, 1993).

The data collection for this project included largely qualitative literature searches, a questionnaire sent via Esref's manager and observations on Esref's work. Esref was legally blind

as per the legal definition of blindness in Turkey, a fact which was confirmed by his manager, Joan Eroncel (JE) – it has also been previously established through medical tests at Harvard University that Esref has never had sight, and that his eyes were incapable of transmitting sensory data to his optic nerve (Pascual-Leone, 2005).

In the context of this study, JE also acted as a language interpreter, a guide and a "cultural go-between" between the authors and Esref throughout our data collection phases. JE's expertise was needed as Esref does not speak English or read and write Turkish or English, and so could not answer the questions directly or answer our emails himself. In addition, one of the authors already had a working relationship with JE and used her as a gate-keeper during the study (Author, 2012).

It was felt that using JE as a "cultural go-between" was important as although one of the authors had visited Turkey prior to this study, neither of the authors had a significant knowledge of Turkish culture or society (two of the authors are from South America whilst the other is British). Although JE is a US citizen, she has lived in Istanbul, Turkey, for over twenty years and has integrated into Turkish society during her residence in Istanbul.

The questionnaire was sent to JE via email, and she then translated the questions orally to Esref. Esref's answers were then written down and translated into English by JE. Unfortunately, the authors did not have the resources to have a second translation of Esref's answers in order to determine further reliability of his answers and JE's translation. However, at the time of the interview JE had been Esref's manager for over a decade and had been successfully communicating with him in this role. In addition, she also translated Esref's words into English for previous documentaries, public lectures and articles and so had extensive experience of interpretation for such research projects. The questions asked were as follows:

1) When did you start painting and why did you start painting?
2) When you started painting, did people underestimate you?
3) How did you teach yourself to paint and use colors?
4) Why did you choose oil paints over other types of material?
5) When you are painting, how do you choose your colors?
6) Do colors have different energies or stimulate different sensations?
7) What emotions do you feel when you are painting or drawing?
8) What is your understanding of perspective?
9) How would you describe beauty, and how do you perceive it through touch, smell or hearing?
10) Can you draw something from sound alone?
11) Can you find beauty through touching fabric?
12) Do you have a particular fashion style?

Ethically, the interview with Esref was conducted in accordance with the policies of Central Saint Martin's School of Art, which is part of the University of the Arts, London. As a well-known professional, whose work and life story has been featured in several books and research articles, it was also felt that Esref's name could be used in reports of the research; and it was judged that as a successful professional artist Esref was able to provide informed consent – it was decided that providing anonymity would be irrelevant, as details of his life could identify him easily as he is the only known successful artist born without any vision who paints in color.

During feedback from the interview, permission was sought and received from Esref via JE to disseminate Esref's case study in the style of previous case study research (Author, 2012).

As well as an emailed questionnaire, the authors also had access to academic articles featuring Esref and his art works. As with all participants in the broader study, Esref's memories were distinguished between those that remembered seeing visual concepts – people who became blind after early childhood – and those that did not – people who became blind early in life or those who had never seen. Writers such as Lowenfeld (1981) and Author (2012b) have observed that the perceptual content of memory has previously played a significant part in learning experiences. More particularly, the distinction between those participants who lost their sight early and late came to represent experiences that formed identity (Author, 2017)

The data was subsequently analysed as a case study. Throughout the study, the analysis examined the combined influence of experiencing what is broadly described as visual culture: the experiences of the visitors who were born blind with no direct visual memories; the experiences of those who became blind in childhood, and who had been taught about visual images at an early age; and the experiences of those who lost their sight at different stages of adulthood or old age, and who had been brought up with a largely visual culture (Author, 2012).

The development of visual culture in this study was characterized by the early learning experiences of participants through schools, universities, family and friends. These formal experiences included the following types of visitor childhood: those who attended a mainstream school; those who attended a school for the blind; those who attended special classes in mainstream schools; and those who had art education at home. During analysis, the visitors' college and university education was considered where it existed.

To evaluate the data, it was decided to analyze Esref's practice and experience using Anderson, Krathwohl & Bloom's (2001) taxonomy of learning leading to understanding and achievement. Anderson, Krathwohl & Bloom hypothesized that learning tasks were hierarchical according to learning performance, with each task representing a different level of understanding and achievement. In this hierarchy, tasks were defined as follows: 1) remembering knowledge, 2) understanding knowledge, 3) applying knowledge, 4) analyzing knowledge, 5) evaluating knowledge, 6) using knowledge creatively.

This taxonomy is arranged in a hierarchy of understanding, from 1) – 6) of the points above (Anderson, Krathwohl & Bloom, 2001). Given this learning hierarchy, creating something new and unique from learnt knowledge is the highest level of understanding a person can achieve. To implement this taxonomy in the context of the creative arts, to be an artist, you can be said to pass through the hierarchy from 1-6 to demonstrate full understanding. Consequently, to develop a unique work of what can be referred to as visual art, the artist must achieve these tasks. This artist must also have what can be described as a *true* understanding of the construction of visually known objects and environments.

Esref was chosen for this study, as he is a well-known artist and because extensive academic literature existed on his practice before this study began. In addition, a professional relationship had been established with him before conducting this study through previous practice and knowledge exchange. Importantly, Esref was known as a person who was born blind and as a person who, according to Locke and Hume's *philosophical theory of color*, should be unable to understand color. If Locke and Hume's *philosophical theory of color* is therefore valid, Esref is unable to pass through Anderson, Krathwohl & Bloom's (2001) learning hierarchy to develop colorful, unique, creative works of art.

Results: The Case Study of Esref Armagan

Esref was born around 1953 in Istanbul, Turkey – this date is approximate, as few births were recorded in Turkey in this period, although this detail has little relevance to the study. Since birth, Esref has never had function in his eyes and thus had no light perception (Kennedy, 2006). Esref has also never attended school, and cannot read or write. Biologically, Esref falls into the category of a person who has never had what can be described as a *visual* imagination or *visual* experience (Lowenfeld, 1981); i.e. in the context of this article, Esref has no sensory experience of color and thus has no visual "image" of color in his mind. Despite never having vision, it was observed that what are traditionally thought to be the sections of Esref's brain linked to visual processing are stimulated by drawing (Pascual-Leone, 2005; Ricciardi, Bonino, Pellegrini & Pietrini, 2014).

Esref has never seen colors, shade or shadow, or foreshortening of images; i.e. foreshortening is the image of an object in the foreground looking bigger than objects in the background. Esref has also never seen perspective either in paintings or of real objects; i.e. he has never seen objects disappearing into a vanishing point, as they are seen towards the horizon. Despite this lack of personal experience, Esref paints and draws figuratively using these visual constructs: color, shadow, light, foreshortening and perspective. Most importantly, Esref creates wholly unique, creative, imaginative images from imagination using the features listed above, which are usually considered to be visual constructions.

Since childhood Esref has drawn and painted visual images, working his way up to becoming a professional artist in adulthood - his work has been exhibited on numerous continents, has been sold through prestigious art auctioneers, such as Bonhams in Dubai, and is

held in international collections. Esref's work contains so many visual references, that many people including scientists have doubted that he has created these images or that he is blind. "So many people did not believe that I had actually done it myself, or that had [I had] seen earlier or similar disbeliefs." He has taught himself to draw and paint so successfully that he can apply a sophisticated knowledge of visual concepts to wholly new visual figurative scenarios accurately without sight.

Esref was born into a family which had little formal academic education. Esref was also not sent to school and had few academic expectations placed on him – it was unusual for blind children from working class families in Turkey to attend schools for the blind at the time; this was in common with many sighted working-class children of his generation who also received little formal education. Most importantly, he was not told he could not draw or paint. Esref's father worked as a light engineer fixing items by hand in his private workshop. As Esref did not attend school and would not be able to find employment, he often attended his father's workshop to keep him company, and being an inquisitive child, Esref would often ask his father about the world around him. He also did the same at home, and when he was out with his family.

When Esref was young, his family described the world around him, letting him touch as many objects as possible and describing everything in as much detail as possible. Eventually, his father devised an alternative method of answering Esref's questions. When going to his workshop, Esref's father would take pieces of board and a scribe – a sharp pointed tool designed for marking measurements on metal and wood – scratched images of the environment into the board and passed Esref's hand over the line. This allowed Esref to follow this tactile, two-dimensional representation with his fingers. After this experience, Esref used his own pointed tool and board to create his own images of objects that were familiar to his touch. Drawing on

card gave him a tactile line he could follow easily, and allowed him a creative outlet that allowed him to understand visual concepts from the outer line of touch – in a visual context, this would be the same context of an outline that distinguishes objects in the foreground from objects and the horizon in the background.

Esref continued to develop his drawing technique to represent the world around him in 2 dimensions, learning at first through touch and then through asking about visual features of objects verbally. Like sighted children do when drawing, Esref began drawing freehand images and showing them to people around him. Just like his sighted peers, Esref also found this to be an intellectual exercise of reproduction, curiosity and recognition of his talent by those around him. "I kept hearing people talking about things and I was curious as to what they were and if I could reproduce them." Esref still uses this original drawing method today in an adapted version. His motivation for creating these drawings is as much about the recognition of viewers of the image and an understanding the visual world.

For example, during Author's first face-to-face meeting in 2004 I noticed that Esref carried a clipboard with a rubber under-sheet and piece of paper clipped to it. After our initial greetings, Esref drew an image of a song bird – his favourite animal - along with a branch and leaves for me and signed it. The drawing was not an exercise that I had set, it was drawn as a form of welcome by Esref and as a keepsake. Esref had also developed an aesthetic signature, which he put at the bottom right of his drawing alongside the date of its creation. Similarly, prior to the auction of his work at Bonham's in Dubai in 2011, this time at the request of Author's wife, he created a similar image of a song bird for Author's infant son, again signing and dating it for him.

For Esref, it is particularly important that he understands his visual environment when he

draws with his scribe and board – this is perhaps because his peers are largely sighted and he wants to be able to understand and to be accepted in their world just as a sighted person is (Author, 2017). He finds that he wants to know about the visual elements of the things that he draws, such as color and foreshortening, and then incorporates these elements into his drawings.

As a teenager, Esref had still not received any formal schooling and so had little literacy. Apart from verbal communication, his only form of communication was drawing with scribe, pencil and board, by which time he had become highly adept. It was then, after being encouraged and helped by his family, that he started drawing with colors. This process of drawing developed linguistically, and one that was stimulated by his friends and peers talking about colors in their day-to-day conversations. Esref describes this process as one of repetition, "By asking and showing – over and over again." After experimenting with colored pencils, Esref eventually started creating colorful paintings as a young adult, although he felt unable to use water-colors. This is a technical quirk of his technique rather than an aesthetic preference. As he described of this transformation,

> I started with colored pencils and then switched to oil paints. But they took a long time to dry so I finally discovered acrylics. I am unable to use water colors.

To create his initial images, Esref found that he had to develop layers of paint so that he knew what the outline of each layer was before applying the next. This meant that he had to allow each layer of paint to dry before adding the next. When dry, oil and acrylic would give this raised surface a texture that allowed Esref to recognize the form of this first layer through touch. After applying his first layers, he would apply further layers, one by one. Applying the paint in such a way now allows Esref to remember what colors he used initially, what colors he is applying on top and allows him to imagine the image he is producing. On this, Esref gives the

following description:

> I use 7 tubes or pencils in a set order that has not changed for more than 50 years! Over the years, I have requested people to describe objects or scenes to me, memorized their answers for the future [like a sighted artist taking photographs of a scene or painting from other's images]. When I paint, I must be alone to be able to concentrate. I have created my painting in my head, including colors, before I ever start to paint. There are no Braille names on my paints, it is strictly memorization.

Another technical aspect of Esref's painting that allows him to physically comprehend the layers of his painting is that he never uses brushes. They are useless in helping him touching his painting as they are in progress. As he paints, every new layer of paint must be perceived through feeling its texture, meaning that to understand the position of one layer he must touch the dry layers as he paints. To put it another way, the information as to where to place the brush that a sighted artist gets through seeing the objects on canvas with his or her eyes, Esref must get through his fingers.

> I think that painting with my fingers just means that I am able to follow what I have done. Brushes don't do that since I must touch what I have just done.

Constantly evolving, Esref has also improved his tactile painting techniques with his hands over time. For example, to develop the tactile lines within which he can apply paint he now often uses thin pieces of clay to create the outlines of objects before applying paint inside these lines. The clay is then removed and the paint dries to form the representation of the solid object that he can touch more easily. In addition, to allow the paint to dry quicker, he must use a hair-dryer to speed up the process. Esref's tactile painting techniques also allow him to represent foreshortening and perspective more easily in his paintings.

Like color, Esref manages to understand how to represent this visual concept both by discussing the concept with those around him and by calculating the nature of perspective through his remaining senses. As he describes of this process, “After all, sound has perspective so the visual side seems very logical to me.” However, sound has it limits to Esref and he cannot discern the form of an image by its sound alone; in this respect, tactile information is an essential source of information for artistic creation. For instance, when asked whether he can represent the form of an object by sound alone, Esref gave the following answer. “No – at least not ever having touched it previously.”

Esref’s process of painting is also not emotional, and unlike some artists he does not associate his ability to be creative with showing emotions. For him, the process is simply technical, logical and imaginative. For example, Esref does not paint colors as per the mood he feels, he only uses colors as a representation of a true image or as a metaphor for a tactile perception. On this Esref explains, “Turkish does not associate colors with emotions (red for anger, blue for sadness) but of course I am aware the blue can show cold, red heat, etc.”

For Esref, the only emotional element of his artistic process is the pleasure that he derives from knowing that the finished picture means something to its viewer, and they appreciate his skill. “I only hope that when I am finished, I will be told what a wonderful painting I have accomplished.” Esref also gains extra benefits from intellectually understanding the world around him. For instance, like many artists Esref likes to take time to develop his physical appearance for his audience, taking time to choose and buy his clothes.

> Yes, there are fabrics that have a wonderful feel to them … I do most of my own shopping because I can understand the quality of fabrics and after being told a color, know if it is something I would appreciate.

Also like many artists, Esref likes to have a unique image, one that people will associate exclusively with him. For Esref, this is wearing a cowboy hat with his smart suit, again an image he feels that people will appreciate of him and which is an image that is portrayed in many photographic portraits. “My cowboy hat is my signature style. I also prefer to wear suits when I am in front of people.” However, for Esref beauty is not associated with visual imagery. His descriptions of what he finds beautiful are associated solely with his remaining senses. Consequently, it could be argued that for Esref visual imagery is associated with technical aspects of communicating direct sensations to gain social acceptance more than deriving pleasure from beauty.

> Beauty is the wonderful smell of a fragrant flower, a newly bathed baby, a loaf of freshly baked bread.
>
> Beauty is the sound of a beautiful bird (I especially like nightingales), a wave breaking on the shore, a young girl laughing.
>
> Beauty is the touch of a furry animal, a piece of silk, the feel of a fresh breeze on my face.
>
> Beauty is the taste of fresh spring water on my tongue, a juicy piece of watermelon, a roasted chestnut and beauty is hearing people say wonderful things about my work that they find inspiring and lovely.

Discussion

Although inconclusive in showing what is humanly possible by all those who have never seen, it can be argued Esref’s case study raises three challenges to the *philosophical theory of color*: 1) it challenges assumptions about the philosophy of mind’s ability to usefully explain

experiences of color; 2) it raises questions about the effect of language in combination with sensory perception as a substitute for perceptual experience; 3) it challenges the efficacy of traditional philosophical and empirical methodology used to theorize the *mind-body problem*, and the link between consciousness experience and knowing. In this section, I examine these issues separately.

Firstly, Esref's use of color in his paintings conforms to level 6 of Anderson, Krathwohl & Bloom's (2001) hierarchy of learning, the highest level of learning in the hierarchy. That is to say, Esref demonstrated that he learnt creative development of new, unique images using color through analogy and analysis; i.e. Esref's paintings are not copied from other tactile images and are without recourse to training or tutoring from others whilst he paints, demonstrating he has an understanding and knowledge of color.

Hence, Esref's creative practice would appear to challenge Locke and Hume's theory that color cannot be understood (and therefore cannot be learnt prior to creative practice) by a person who has never had sensory experience of color (Locke, 2001; Woods, 1986) - the *philosophical theory of color* would suggest that Esref's practice should be precluded from an understanding of color classified as level 2 in Anderson, Krathwohl & Bloom's hierarchy.

It can also be argued that Esref also appears to understand mid-shades of colors through mixing with either black or white through questioning friends and family about his practice. This would suggest that Esref understands and would seem to be able to imagine mid-shades without having first seen them, as Hume (1748) theorized. However, in contrast to Hume's theory of imagining shades of color, Esref can imagine these different shades without first experiencing darker or lighter shades to develop his paintings.

Furthermore, given the correct symbolic input, Esref's practice shows it is possible for a

person born blind to understand, describe and create art works using what are traditionally thought to be other visual concepts too. This includes what are thought to be wholly visually concepts, such as lack of light as shadow and distance making objects appear smaller (Kennedy, Juricevic, Hammad & Rajani, 2007; Kennedy & Juricevic, 2006). Thus, it can be argued that what the *philosophical theory of color* considered to be elements of perception linked solely to vision or an element of impairment can be understood through Esref's non-visual experience.

Secondly, it can be argued that what appears to be Esref's cross-modality of senses - i.e. the development of a "mental image" based on numerous senses working together and effecting the mental image (Driver & Spence, 2000) - is supplemented by the development of a linguistic understanding of color. This observation is illustrated by Esref's development of visual understanding through constant analysis and evaluation of seeing through discussions with family and friends. For example, Esref reported that his understanding of the visual world was developed through his drawings and paintings, by showing these paintings to others and gaining their feedback; as he stated: "By asking and showing – over and over again." This knowledge was subsequently used by Esref to form a method of constant refinement of his fine art practices, which formed a type of evaluative exercise; i.e. Anderson, Krathwohl & Bloom's (2001) level 5 in the learning hierarchy.

Earlier studies have shown that creative "free" drawing by people with sight can be affected by the use of language. For instance, Carmichael, Hogan & Walter (1932) observed that when human experimental subjects see an ambiguous image with different labels, they are likely to draw the image from memory in accordance with its label. For example, shown an image of diamond-like outline in a rectangle labelled "diamond in a box" or "curtain in a window," subjects embellished their drawings with curtain features such as frills, or added the cut pattern

of a diamond. Similarly, Hartley (1990) showed that viewers describing an image accurately could provide sufficient information to people with sight to draw accurate images they had not seen in accordance with their instructions.

It can be argued that Esref's experience provides a further dimension to these previous experimental observations, as it illustrates what is achievable through language in combination with non-visual perception. In particular, Esref's learning of color through language shows understanding can be developed with touch and hearing, such as his analogy of the dimming of sound as it becomes distant with perspective, and the touch of something hot with the color red. This would suggest that Gregory's (1974) later suggestion that properties of perception such as space and shape can be understood through cross-modal transfer does not go far enough; i.e. Gregory only thought concepts that were presumed to be common to touch and sight, such as size and shape, could be learnt through cross-modal transfer.

Thirdly, it can be argued that Esref's case study challenges the validity of the traditional philosophical methodology of theorizing the *mind-body problem* (Kim, 2018), through people who are visually impaired. The link between two scenarios of learning and creative practice illustrate this challenge:

1. A sighted artist stands in front of her or his canvas and looks at a scene. Something is remembered, and a creative image is imagined – it is unique, and belongs solely to this artist. This artist turns back to the canvas, and through a process of imagination creates a unique image. His or her paints are in a particular order. The artist has learnt to see, and learnt to paint - both are skills that need to be first memorised, understood and evaluated (Anderson, Krathwohl & Bloom, 2001). Subsequently, the viewer is said to recognise the correct representation of an image and of its color.

2. Esref sits in front of a canvas. He has also remembered a scene he has in some way imagined in his mind – this imagination can be analogized as a "black box," to use the "image" of traditional science. Some form of imagination has happened, and Esref creates a unique scene with his hands that is similar to the person with sight. Esref has learnt to sense non-visually, to imagine color somehow, to create a representational image that people with sight can recognise and appreciate through a process of communication.

Given that the end result of these scenarios is the same for the person with sight and Esref, it can be assumed that both artists have gone through a higher form of learning and creative understanding. Therefore, philosophical methodology needs to consider a way of measuring different forms of experience, either as direct or indirect experience (or what Nagel (1974) refers to as subjective and objective experience), eventhough it results in the same outcome.

This also raises the possibility that there may not be just a single philosophy of mind, but many if not infinite philosophies of mind. Furthermore, in the context of these different possibilities, it can be argued that given these scenarios, the creative process needs to be reconsidered as a methodology of measuring understanding through learning about color through, for example, participation.

Conclusion

Esref has achieved a higher-level understanding of color through constant examination and discussion, by supplementing his other senses. Consequently, Esref's case challenges centuries of belief in Locke and Hume's *philosophical theory of color* and, given the accurate

descriptions provided by sighted family and friends, his work shows that it is possible for people born blind to understand, describe and create what were previously considered to be a visual imagination.

Therefore, traditional approaches to philosophy have unwittingly contributed to the exclusion of people with visual impairments, as academics have far too often represented examples of people with visual impairment as unable and disabled. This theorization has led to the segregation of public services and led to those who were visually impaired in childhood to be taught a separate curriculum based on a belief in their psychological deficit (Author, 2015, 2017). This understanding can now be questioned.

Furthermore, Esref's case study also challenges the nature of philosophical methodology. If academics are to use people with visual impairments as an analogue, it should be done from the point of view of establishing their ability and equality with others, rather than assuming or trying to prove a deficit. Only if this switch in emphasis occurs will academic theories be used as a force for good rather than as ammunition for stereotyping, excluding and humiliating people with visual impairments. Furthermore, only when we focus on ability rather than disability through philosophy will academics use their considerable cultural power and influence as a force for the betterment of human beings, rather than an egocentric, exclusive activity.

Implications for Practitioners

Esref's case study shows that the art education of people with visual impairments needs to be re-considered. As with Esref's experience of learning as a young child, young children with visual impairments should have visual properties described and compared to their other senses. Similarly, young children should also be given a rich visual-vocabulary, which they can discuss in order to develop higher level learning and importantly develop a means of evaluating their

creative practice.

Of equal importance, children who are visually impaired and sighted should see creative practice as a means of developing objective means of communication and for developing their sensory understanding of their environment. As Esref's case study shows, creative practice was much more than a simple artistic or supplementary activity, but one that allowed him to form a way of feeling closer to family, friends and his own community.

Furthermore, it can be argued philosophical methodology needs to develop a means of understanding color through a combination of language and a mixture of the senses. In this respect, philosophy can learn at least in part from the contemporary methodology of empirical psychology. For example, neuropsychology has developed methods of observing ambiguous human cross-modal attention, with sensory information being found to merge to develop a single image through paradoxes of vision and other senses (see for example Colavita (1974) and Spence (2010)). Similarly, it is arguable that the "black box" approach towards the creative process provides similar paradoxes that can be used as a method of illustrating glimpses into the nature of human experience and understanding.

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