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On the phenomenal, intentional  
and physical nature of Mind

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## Declaration

I hereby declare that this dissertation is the result of my own work except where specific reference is made to the work of others, the contents of this dissertation are original and have not been submitted in whole or in part for consideration for any other degree or qualification in this, or any other University. This dissertation contains more than 75,000 words including bibliography and footnotes, and has less than 5 figures.

The thesis work was conducted from November 2013 to October 2016 under the supervision of Doctor James Tartaglia at Keele University.

## Abstract

The aim of this research is to provide a path to understand the phenomenal, intentional and physical nature of mind. Essential to the discussion of this thesis is the fundamental role that the phenomenal character of experience plays in the theory of intentionality. It is argued that both aspects must be understood physically as realized by a relevant brain state. I present an internalist view of the mind, in contrast with a more popular view in philosophy, representationalism, that is typically externalist. However, this thesis will argue in favour of a new exploration of the relation between consciousness and intentionality. Having gained some understanding of this connection at a conceptual level, and having explored the relevant empirical findings that support my view, a new understanding of the hard problem of consciousness will here be presented. The arguments will show that it is required to start with our phenomenology, and since our phenomenology will shape our representation, such phenomenology will be the basis of our intentionality and our understanding of the world. As a consequence, the explanatory gap, or consciousness' hard problem, needs to be understood in another sense: the problem, as it has been formulated, is a misconceived problem.

## Table of Contents

Abstract.....	ii
List of figures.....	vii
Acknowledgements.....	viii
Chapter 1 Toward a physical, phenomenal, and intentional understanding of the mind.....	1
1 Introduction.....	1
1.1.....	3
Context of Study.....	3
1.2 Intentionality as external mind theory.....	6
1.3 Derived and underived intentionality.....	8
1.4 The Phenomenal character of experience.....	11
1.5 Representationalism: intentionality and its relation with consciousness.....	20
1.5.1 Phenomenal intentionality.....	21
1.6 The phenomenal character of intentionality.....	23
1.6.1 Phenomenal intentionality and its internalistic outlook.....	25
1.7 Understanding the phenomenal-intentional physical nature of the mind: new directions of discussion.....	28
1.7.1 Understanding the hard problem of consciousness.....	30
1.8 Concluding remarks.....	32
1.9 Problem Statement.....	33
1.10 Aim and Scope of the Study.....	34
1.11 Overview of the thesis.....	35
Chapter 2 Tracking representationalism.....	37
2.1 Introduction.....	37
2.2 Representationalism: the place of secondary qualities.....	40
2.3 Classic representationalism: Tye and Dretske.....	43
2.4 Representationalism and the nature of the phenomenal..... character of experience: the problem of the explanatory gap.....	48
2.4.1 What is the gap?.....	49
2.5 Tye's use of phenomenal concepts: the gap strategy.....	51
2.6 The phenomenal character and the argument for transparency of experience: the hallucination problem.....	55
2.7 The problem of causal co-variation as a direct connection of the world.....	58
2.7.1 The phenomenal content of hallucination and the causal co-variation.....	62

2.8	Concluding remarks .....	73
Chapter 3 Non Reductive Physicalism.....		76
3.1	Introduction .....	76
3.2	Descartes: Substance dualism.....	78
3.2.1	The problem of interaction between substances.....	81
3.3	Strawson and property dualism .....	83
3.4	The alternative: physicalism.....	87
3.4.1	The completeness of physics .....	88
3.4.2	The problem of epiphenomenalism.....	90
3.4.3	The problem of reduction.....	91
3.5	The Reductive View: The Place-Smart Identity Theory .....	93
3.6	The non-reductive view: Multiple realizability and Special Sciences.....	98
3.6.1	The Multiple realizability view .....	98
3.6.2	Fodor and the autonomy of special sciences .....	101
3.7	Functionalism: reconciling an identity view with a multiple realization view.....	105
3.7.1	Putnam's abstract functionalist view: the problem with physicalism .....	105
3.7.2	The Lewis-Armstrong causal role functionalism.....	108
3.7.3	Identity theory as a functionalist view.....	110
3.7.4	Functionalism and the phenomenal character of experience .....	113
3.8	The role of science in explaining consciousness .....	116
3.8.1	How consciousness became a problem that is hard to understand:.....	118
Colin McGinn and our armadillo minds.....		118
3.8.2	Knowing what it is like: Van Gulick's optimistic point of view .....	123
Chapter 4 The phenomenal character of intentionality.....		128
4.1	Introduction .....	128
4.2	The phenomenal connection to the world .....	129
4.2.1	The case of indirect realism.....	131
4.2.2	The case of indirect realism: the representationalist objection.....	133
4.2.4	The case of indirect realism: objection 3. Adverbialism: there are not intermediaries in the perception of objects.....	138
4.2.5	The case of indirect realism: reply to objection 3. Adverbialism: there are not intermediaries in the perception of the objects. My response.....	140
4.2.6	Concluding remarks.....	142
4.3	The phenomenal structure of intentionality .....	143
4.3.1	Intentionality: the original view .....	144
4.4	The Phenomenal structure of intentionality .....	149

4.4.1	The role of phenomenal experience: the boundaries of representation.....	152
4.5	The narrow content of the phenomenal intentional states .....	158
4.6	The phenomenal structure of intentionality: originalintentionality .....	160
4.7	Kriegel and Experiential intentionality: representationalism strikes back .....	168
4.7.1	Kriegel's view of the phenomenal character of the experience.....	169
4.7.2	Kriegel's intentionality: the phenomenal representationaltracking approach. ...	173
4.8	The natural path to intentionality.....	177
4.8.1	Chisholm on intensionality as the criterion of intentionality .....	177
4.8.2	Quine: can intentionality be naturalized? .....	181
Chapter 5 The Real nature of consciousness hard problem .....		184
Introduction.....		184
5.1	The consciousness hard problem.....	186
5.2	When the problem of consciousness was not a hard problem .....	188
5.2.1	Why is consciousness a problem anyway? .....	191
5.3	Dr. Chalmers, or how I learned to stop worrying and love the hard.....	193
problem of consciousness.....		193
5.4	What does our phenomenology reveal? .....	201
5.4.1	Objection 1: the phenomenology does not determine our.....	212
intentionality, and will not reveal a primary quality .....		212
5.4.2	Objection 2: Even if we knew all the physical facts, we could not .....	218
explain consciousness or intentionality in physical terms. Therefore, there is still a hard		
problem .....		218
5.4.3	Objection 3: even if there is empirical evidence for how the brain is .....	230
related to consciousness, there is still an explanatory gap .....		230
Chapter 6 Conclusions .....		237
6.1	Introduction.....	237
6.2	The problem of reductive approaches .....	240
6.2.1	Functionalism as a physicalist position .....	243
6.3	Representationalism .....	245
6.3.1	The place of phenomenal experience within representationalism .....	246
6.3.2	The problem of representationalism.....	248
6.4	Non-reductive physicalism as metaphysics of consciousness. ....	251
6.5	The indirect realist view: our phenomenal connection with the world.....	253
6.5.1	The phenomenal structure of intentionality .....	257
6.5.2	Kriegel's intentionality: the phenomenal-intentionality tracking approach.....	263



6.6 The role of our phenomenology: the hard problem of consciousness.....	266
6.6.1 How the explanatory gap or consciousness hard problem must be understood ....	270
References.....	276

List of figures

FIGURE 1 TROXLER'S FADING.....	140
FIGURE 2 STIMULUS USED TO DETERMINE BRAIN ACTIVATION IN COLOUR AND SHAPE PERCEPTION.....	231
FIGURE 3 BRAIN ACTIVATION DURING COLOUR PERCEPTION VERSUS BLACK AND WHITE PERCEPTION.....	233

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## Chapter 1

### Toward a physical, phenomenal, and intentional understanding of the mind

The point of philosophy is to start with something so simple as not to seem worth stating and to end with something so paradoxical that no one will believe it

(Russell, 1959, p.10)

## 1 Introduction

Consciousness, particularly human consciousness and its phenomenal properties, has become, in recent years, one of the central points of controversy in the philosophy of mind along with intentionality. Some philosophers (Rorty, 1979) have argued that both properties – consciousness and intentionality – are totally independent. Others philosophers (Tye, 1995; Dretske, 1995) emphasise that consciousness can be explained in terms of representational or intentional content, and this is the way to naturalize consciousness via a naturalized project of intentionality. However, recently (Kriegel, 2013) there has been a new research approach called phenomenal intentionality.<sup>1</sup> Under this view the source of intentionality is the phenomenal character of experience, in other words, intentionality depends primarily upon consciousness. It is this view that forms my starting point, and that I attempt to defend.

I will argue that intentionality is grounded in the phenomenal character of experience, in its aspects of subjectivity and its narrow content. As a

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<sup>1</sup> PI for short.

consequence, I will argue against representationalism and its attempt to account for the character of phenomenal consciousness by means of an externalist theory of intentional content. My research will instead argue in favour of an internalist theory of intentionality based on the phenomenal character of experience employing the idea of indirect realist view of perception as one of the key points. This idea will be used to support my main thesis: intentionality is shaped by the phenomenal character of experience, and this in turn reveals to us our knowledge of the external world. However, my view will also defend a physicalist picture of consciousness and intentionality: it will explore and defend the metaphysics of consciousness based on non-reductive physicalism. It is argued that this is the most promising path by which to overcome various issues. This path will suggest that the naturalizing projects concerning intentionality must be revisited: any intentional explanation would required to look back into the head where consciousness, and hence, intentionality will be found. For this reason, it is required to explore the relevant explanation of the mind in a more internalistic view. However, some philosophers (Nagel, 2002) think that this explanation requires us to understand how it is that such phenomenal properties are subjective and hence hard to understand from a physical point of view are related to the brain, and that this implies the hard problem of consciousness (Chalmers D. , 1995). The solution of which has eluded philosophy to date.

## 1.1 Context of Study

Our experiences, granted by sensory perception, give us our connection with the world. If you are in a bakery and smell the fresh bread, you may, for example, decide to buy a piece of bread. You may take pleasure in the smell of the bread or maybe you feel hungry, or perhaps you decide to buy some cinnamon rolls to eat later with coffee. But the perception is not just a matter of belief, actions, decisions or representations. There is a rich array of phenomenal experiences when we perceive the world: there are experiences of colours, odours, textures, shapes, and so on, and in turn, these perceptions may generate a series of phenomena such as beliefs, desires, intentions, hopes, fears, or preferences. The mind is somehow at the centre of these phenomena and can produce memories or images that can be manifested in the recollections of previous experiences. These are called “mental states,” and when there are experiences like the smell of the bread or the belief that there is fresh bread in the bakery, it can be said that the mind is in, or enters into, a specific mental state.

On the assumption that those mental states have content, this content can be intentional (or representational; I shall initially treat these terms as synonymous, in accordance with common practice), and phenomenal. Now, the question arises: what determines that content? What is a representational state, and what is a phenomenal state and how are they related? To start with, your belief that there is fresh bread in the bakery seems to be *about* bread. This directedness of mental states is called intentionality. In Brentano’s words, intentionality is the “reference to a content, direction toward an object” (Brentano, 2009, p. 68). Thus, intentional states are states that exhibit intentionality; and such states represent the world as

being a certain way: what they represent is their content. The phenomenal character of experience is the subjective property of conscious experience, the 'what it is like' of the state (Nagel, 2002); when you experience the smell, or the taste of fresh bread, you have a subjective experience – what it is like to eat fresh bread, or what it is like to smell fresh bread.

Intentionality and phenomenal consciousness are still controversial topics of discussion, both individually and in relation to contemporary debates in the philosophy of mind. Representationalism (Tye, 1995, Tye, 2000, Dretske, 1995) attempts to explain them and its relations, but I will argue that it fails. In this thesis I will argue, contrary to representationalism, that the phenomenal character of the experience determines intentional content, and such content is not totally determined by external factors.

In the following sections I will further explicate the concept of intentionality and the relationship between intentionality and consciousness: I shall also cover the concepts of phenomenal consciousness, and the basics of non-reductive physicalism; as well as more contentious concepts such as the indirect realist view of perception. I will explore how science and philosophy have tried to explain the hard problem of consciousness. I shall explore all those concepts, which will be the core tenet of my research: the phenomenal, intentional and physical nature of the mind.

Intentionality is the property of the mind whereby it has an “aboutness” or “directedness” toward real or unreal objects. The concept of intentionality *sui generis* was introduced to modern philosophy, in 1874, by Franz Brentano<sup>2</sup>:

...by what the Scholastics of the Middle Ages called the intentional...  
inexistence of an object, and what we might call, though not wholly unambiguously, reference to a content, direction toward an object (which is not to be understood here as meaning a thing) or immanent objectivity (Brentano, 2009, p. 68).

Perhaps one of the intentions of Brentano was to find a criterion to distinguish mental from physical phenomena. Dale Jacquette suggests “that psychological phenomena can be distinguished from physical phenomena by virtue of the intentionality or object- directedness of the psychological, and nonintentionality of the physical or nonpsychological” (Jacquette, 2004, p. 5). In recent years, intentionality has been studied by philosophers such as Michael Tye (Tye, 1995), Fred Dretske (Dretske, 1995), and Tim Crane (Crane, 2003) among others. One of the main concerns of recent decades has been to find a place in the natural world for intentionality, but what lies at the bottoms of all those views is the idea that by naturalizing intentionality the path to naturalize consciousness will be opened up.

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<sup>2</sup>However, Brentano was not the first to use the term or talk about intentionality. The concept can be traced back to the scholastics in the Middle Ages. Even Aristotle presented some concerns about the intentionality problem (Caston, 1998)



## 1.2 Intentionality as external mind theory

Kriegel explains the role occupied by intentionality in these debates:

In the second half of the twentieth century, intentionality received more attention than consciousness. A generation ago, the project of finding a place for intentionality in the natural order – ‘naturalizing intentionality’ – consumed more intellectual energy than virtually any other issue in philosophy (Kriegel, 2011, p. 3).

And the answer for this widely accepted position is quite simple: according to Horgan and Tienson intentionality gives a chance to deal physically with consciousness. That is to say, the phenomenal aspects were left as a secondary issue since these were considered less “tractable” from a physicalist point of view (Terence Horgan and John Tienson, 2002, p. 520). However, I will argue that the phenomenal aspects of the mind are fundamental to a theory of intentionality. Moreover, I will put forward the view that a physical explanation of consciousness and intentionality is not possible without direct and detailed reference to brain states, accordingly, an alternative metaphysical position will be laid out to support the physical nature of our phenomenal states.

According to Mendelovici and Bourget “the 1980s and 1990s saw the rise of tracking theories of intentionality, these theories have been motivated in good part by a perceived need to “naturalize” intentionality” (Mendelovici and Bourget, 2014, p. 325)<sup>3</sup>. However, the idea that by tracking relations intentionality and consciousness can be explained has become almost a dogmatic position, and

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<sup>3</sup>As pointed out by Uriah Kriegel the “first accounts in this vein, such as Dennis Stampe’s (1977) and Fred Dretske’s (1981) were focused on broadly causal or informational relations. Under the influence of Ruth Millikan (1984, 1989, 1993) and David Papineau (1984, 1993), many philosophers have incorporated a teleological aspect into their account of the relevant relation (Dretske 1988, McGinn 1989, Neander, 1995)” (Kriegel, 2013, p. 21). As will be shown, this representationalist view has been a mainstream position, and even within the vicinity of the PI program there are sympathies with this representational view.

representationalism became the mainstream position in philosophy of mind to explain intentionality. According to Mendelovici and Bourget: “Tracking theories arguably remain the most popular theories of intentionality today” (Mendelovici and Bourget, 2014, p. 325).

But what is this externalist view? One example is that of Dretske:

The Representational Thesis is an externalist theory of the mind. It identifies mental facts with representational facts, and though representations are in the head, the facts that make them representations and, therefore, the facts that make them mental—are outside the head (Dretske, 1995, p. 124).

However, within the externalist-naturalist program for intentionality, the main issue is how they can provide a convincing account of the phenomenal character of the experience based on these tracking relations? It is this issue that I will now turn to. I shall also delve into the nature of intentionality a little bit more; fundamental to all this understanding is the explanation of derived and underived intentionality.

### 1.3 Derived and underived intentionality

John Searle drew an influential distinction between derived and underived intentionality, in his words:

Since sentences — the sounds that come out of one's mouth or the marks that one makes on paper — are, considered in one way, just objects in the world like any other objects, their capacity to represent is not intrinsic but is derived from the Intentionality of the mind. The Intentionality of mental states, on the other hand, is not derived from some more prior forms of Intentionality but is intrinsic to the states themselves (Searle, 1983, p. 5)

This distinction between original and derived intentionality has been the source of a long debate, which still shapes the discussion of consciousness and, of course, intentionality. For instance, Sellars and Chisholm (Roderick M. Chisholm and Wilfrid Sellars, 1957), in a series of letters, discussed the relationship between language and thought, and more specifically the intentionality of language and the intentionality of thought: original intentionality and derived intentionality. According to Jacquette “Chisholm’s position is that the intentionality of thought precedes and has explanatory priority over the intentionality of language, and that language acquires intentionality derivatively from the intrinsic intentionality of thought” (Jacquette, 2009, p. 146). This way to express this distinction between original and derived intentionality brings to mind a way to explore the idea of the relation between consciousness and intentionality. Is it consciousness that determines the nature of intentionality? I think it is. I will argue that the distinction is real and fundamental, and take sides with Chisholm as regards the order of derivation. However, I am not agreeing with his definition of intentionality. Others, such as

Dennett (1996), reject the distinction altogether; Dennett argues that there is only derived intentionality (Dennett, 1996, p. 86). He removes the phenomenal experience or qualia, and attempts to explain the mind – or what it is left in his view – solely in terms of external factors, a relationship explained in terms of evolution. Against Dennett I shall argue that intentionality depends on the phenomenal aspect of consciousness, so a radical position as Dennett's cannot be defended.

But, what is the criterion of intentionality? Chisholm argues that it is intensionality<sup>4</sup> (with an –s) (Chilshom, 1957, p. 170). He argues that we should distinguish between sentences that refer to “psychological phenomena” and those that do not (Chisholm, 1957, p. 172-173). Our beliefs, desires, hopes, fears, etc, are ways to express our relations with the objects of perception. Thus, sentences like ‘I believe there is coffee on the table, or, ‘I desire to buy a new book’, or ‘Jimmy Hendrix burnt his guitar’, can be analyzed according to Chisholm criteria's of intentionality (i.e. the requirement that they be reported in intensional language), and then the intentional content of the mental states can be determined. Consequently, I will ask whether or not there is a derived intentionality (Searle, 1983), or whether, as maintained by Dennett, “the only intentionality is derived” (Dennett, 1996, pp. 50-55). If all intentionality depends upon consciousness, any account trying to defend derived intentionality is disputable. I shall argue that the way that our experience and representation may work will depend also on meaning that results from our experience, and “history of evidence”<sup>5</sup>, hence not by derived intentionality. This view will be contrasted with Kriegel's position that “non-experiential intentional

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<sup>4</sup> Intensionality refers to the meaning of the proposition, on the other hand. Extensionality refers to the entities that such propositions refer to. I will return to this point shortly.

<sup>5</sup>This is a term that I borrow from Lewis (Lewis, 1974, p. 336)

states” acquire intentionality in a derived way (Kriegel, 2011, p. 7). Thus, it will be explained that only intentionality, original intentionality, has its sources in phenomenal grounds.

## 1.4 The Phenomenal character of experience

The phenomenal character of experience, or qualia<sup>6</sup>, has been defined as “what it is like to be”. In Nagel’s words:

that an organism has conscious experience at all means, basically, that there is something it is like to be that organism . . . But fundamentally an organism has conscious mental states if and only if there is something that it is like to be that organism—something it is like for the organism (Nagel, 2002, p. 219).

This is, at first sight, an internal and private experience generated by an imagined or real experience of an object (e.g., the smell of the rose, the taste of the coffee). But what is the nature of this experience, in other words, what exactly is it that we experience? Let us suppose that we have a red tomato in front of us. There are two options. Either what we experience is a direct result of the properties of the object, the objective physical properties of the object – like the objective red of the physical surface of the tomato – a direct realist view or naïve realist view. Or, the other option, which I will explore further, is that we are aware of the surface properties by being aware of the experience – the indirect realist view of perception. A representationalist (Tye, 1995) will defend the former, which is the cornerstone of their view. However, I favour the latter. I argue that there is an internal realization of the experience granted by the activation of the relevant brain state. But I have to mention that even a representationalist like Tye admits the role of phenomenal character of the experience in our mentality. Yet, the phenomenal character of the experience remains a source of debate and confusion, particularly

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<sup>6</sup>I just use this term as a reference, I will use ‘phenomenal character of the experience’ in the rest of the thesis.

in any theory of intentionality. Some philosophers have denied its existence, suggesting that the term is confused and misleading e.g. (Churchland, 1981), (Dennett D. , 1988). According to Dennett:

So when we look one last time at our original characterization of qualia, as ineffable, intrinsic, private, directly apprehensible properties of experience, we find that there is nothing to fill the bill... So contrary to what seems obvious at first blush, there simply are no qualia at all (Dennett, 1988, p. 409).

But this is to be expected. Dennett will try to explain mentality in the most external possible form as has been mentioned, to get the most naturalistic explanation of the mind (i.e. as was pointed out he favours the idea that all intentionality is derived). I shall argue against this position. I shall argue that the phenomenal character of the experience is a property of the mind realized by brain states, though not reducible to this physical base. I shall argue for a form of non-reductive physicalism.

#### 1.4.1 The physicalist approach: the role of phenomenal experience.

During the last three centuries western civilization has witnessed the rise of modern science coinciding with its success in explaining the natural world. Everything that can be measured or explained by laws has been brought into the orbit of this world. Thomas Nagel pointed out that:

Descartes and Galileo made the crucial conceptual division by proposing that physical science should provide a mathematically precise quantitative description of an external reality extended in space and time... Subjective appearances, on the other hand – how this world appears to human perception – were assigned to the mind and the secondary qualities like colour, sound, and smell were to be analyzed relationally, in terms of the power of physical things, acting on the senses, to produce those appearances in the mind of the observer (Nagel, 2012, pp. 35-36)

Accordingly, the task – in science and in some philosophical approaches – in recent decades has been to find some reductive or materialist account to explain the mind. Indeed, it might even be argued “that materialism requires reductionism” (Nagel, 2012, p. 15). This was the path taken to explain consciousness at least since the 1950s. However, I will argue that although they require a physical basis, there are some mental properties, particularly those of consciousness – and intentionality – that cannot be accounted for in terms of any reductive physicalist explanation, and yet they respond to a physical nature. But how then, in this materialist philosophical environment, where the position is to explain the secondary qualities (like colour) in term of primary qualities (like shape), how can



the phenomenal character of experience be explained? How might these properties be the source of all intentionality? These are the crucial questions of my research. I will argue that intentionality may be based on phenomenal consciousness, which is irreducible to a 'more' physical property. Moreover I shall offer this as a physicalist solution to the hard problem of consciousness<sup>7</sup>.

#### 1.4.2 The path to take: non-reductive materialism

One of the controversial topics within philosophy has always been the relationship between mind and body. Descartes (1644) claimed that mind and body are two different substances, that is to say, mind and body have different characteristics and as such he tried – unsuccessfully – to explain their interaction. One of the Descartes' conclusions is that the mind can exist without the body; in other words, he claimed that the mind may exist without any physical base. This is the origin of dualism in modern times. Descartes argued in the Sixth Meditation:

...[T]here is a great difference between the mind and the body, inasmuch as the body is by its very nature always divisible, while the mind is utterly indivisible. For when I consider the mind, or myself in so far as I am merely a thinking thing, I am unable to distinguish any parts within myself; I understand myself to be something quite single and complete....By contrast, there is no corporeal or extended thing that I can think of which in my thought I cannot easily divide into parts; and this very fact makes me

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<sup>7</sup>There are two problems as stated by David Chalmers (1996). The soft problem-or easy problem - is related to how the memory works, attention, focus and so on. Hence, neuroscience has tried to explain the soft problem of consciousness via the neural correlates of consciousness. However, the phenomenal character of experience the – hard problem – and how it is related to the brain, has eluded scientific explanations.

understand that it is divisible. This one argument would be enough to show me that the mind is completely different from the body.... (Descartes, 1985, p. 59)

Such a view entails in one way or another separation between our minds and our body. Alternatively, it is sometimes argued that even if our consciousness may depend upon a physical base like the brain, such dependence does not entail the same ontology. P.F. Strawson (1959), for example, retakes the Cartesian insights and developed a new form of dualism, property dualism (Strawson P. , 1991). He argues that there are corporeal bodies with psychological properties, but ultimately such psychological properties do not share the same nature with corporeal bodies. This approach to explain consciousness in terms of non-physical properties was challenged in the mid '50s. The identity theory championed by Place (1956) (Place, 1970) and Smart (1959) (Smart J. , 1970) presented a physicalist alternative. The problem was the reductive identification of consciousness with processes in the brain. The view assumes that, for example, pain can be identified by empirical research with a pattern of activity in the brain, that is to say, for example: pain = C-Fibers firing. Many contemporary philosophers still insist that consciousness can be reduced to its neural properties. For instance, Patricia Churchland (1997) suggests that:

...I am convinced that the right strategy for understanding psychological capacities is essentially reductionist, by which I mean, broadly, that understanding the neurobiological mechanisms is not a frill but a necessity... Adopting the reductionist strategy means trying to explain the macro levels (psychological properties) in terms of

micro levels (neural network properties) (Churchland P. , 1997, p. 127)

This view suggests that the way to deal with consciousness from a physical standpoint is reduction. However, there have yet to be found bridge laws, and for theoretical reasons, reductionist accounts simply will not solve the nature of the connection of our psychological states with the micro-physical properties of our brains. Thus, the advocates of this view also argue that concepts like qualia must be discarded, or (like intentionality) put outside the head (Dennett, 1996).

This physicalist approach leaves out the phenomenal aspects of mentality, moreover, the identification implies that only creatures with human brains experience sensations. Under this view, it is not clear if other creatures simply lack experiences, like the experience of pain. Although physicalism may offer the best approach to explain consciousness, the reductive approach seems like a dead-end. Putnam (1967) and Fodor (1974) offered another set of arguments that may support the idea of a physicalist picture of consciousness while avoiding the problems of reduction; Putnam offered the idea of multiple realization (Putnam, 1967). He argued that a sensation like pain is multiply realizable – the physical base does not matter, what matters is the functional aspects, and this is the origin of functionalism. Fodor takes a step further and argues against reduction. According to Fodor, there are special sciences that have autonomous taxonomies: “... it is not further required that the taxonomies which the special sciences employ must themselves reduce to the taxonomy of physics” (Fodor, 2002, p. 134). However, while Putnam’s original functionalism left the door open to dualist interpretation, the functionalist approach was developed by Lewis (1972) and Armstrong (1980). Their aim was to reconcile an identity theory approach with a

functionalist approach. In this way functionalism can be interpreted as a physicalist position. These arguments prepare the path for a different physicalist approach that will be the metaphysical base of my research, non-reductive physicalism.

One of my claims will be that phenomenal experience can be studied under the relevant physical ontology. It will be argued that, contrary to Descartes, the mind does indeed require a physical base to its realization. Furthermore, contrary to Strawson, there is no room for a separation between psychological predicates, and physical predicates. In our case, the brain is the physical base; but it does not follow that the mind is the brain or that our minds can be reduced to the properties of the brain.

However, the idea that reduction can likewise explain or reveal the underlying physical structure of our mental states is very appealing, and the question arises: can the same methodology that was used to determine that water is  $H_2O$  be used to determine that the phenomenal red caused by the apple is V4 firing? In other words, can we explain secondary qualities (like colour) in terms of primary qualities (like shape)? This is precisely the root of the consciousness' hard problem; in other words, science is all about explaining primary qualities, consequently, science looks for an explanation of secondary qualities in terms of primary qualities, and this will produce a problem to understand our minds. But, is this lack of understanding enough to show that our consciousness is over and above the physical, and that there is an explanatory gap? Brian Loar argues that this is an epistemic issue (Loar, 2002) Why? Well because what the explanatory gap requires is an explanation that fulfils the requirements of scientific methodology. In his words:

When we explain liquidity in physical-functional terms, the explanation is in crucial part a priori.... What we in effect do is analyze liquidity (or more precisely those aspects of liquidity that we count as explained) in terms of a functional description, and then show that the physical theory of water implies, a priori, that the functional description is realized. But given the conceptual independence of phenomenal concepts and physical-functional concepts, we cannot have such an a priori explanation of phenomenal qualities in physical functional terms (Loar, 2002, p. 304)

That is to say, if consciousness resists reductive explanation it is because there is no explanation in such terms. The problem, as initially described, exists not because physicalism is false, but because, as Fodor argues, reduction is a misleading approach – there is “taxonomy of special sciences” that do not “require” the “taxonomy of physics” (Fodor, 2002, p. 134). However, this does not mean that we are not talking about physical properties

This metaphysical position is a non-reductive materialist position, which according to Lynne Baker, can be described as follows: “proponents of non-reductive materialism hold that the mental is ontologically part of the material world: yet mental properties are causally efficacious without being reducible to physical properties” (Baker, 2009, p. 109). However, if a mental property like phenomenal experience is not reducible, one of the questions to try to answer in this research is whether we can accept a naturalistic account of intentionality while holding that it is based on a property – like the phenomenal character of experience – which cannot be physically reduced? I will claim that the reason for the apparent success of tracking-externalist-naturalist accounts of intentionality is precisely because

reductive accounts have simply removed all the phenomenology from our heads. Representationalists argue that the only way to preserve it is in terms of this external account of intentionality, but paradoxically, to do this, they locate our experience outside the head. In my view a full account of intentionality must take into account its phenomenal base, as internally realized – this is the key to the hard problem of consciousness. This suggests the path to follow in this research. We must not sever the phenomenal experience from intentionality, as has been done by the most common philosophical view in the last three decades: representationalism. We must determine a new way to explain how the properties are related.

The next section will cover the relation between intentional and phenomenal properties. I will cover the representationalist account and some of the basic definitions of the “phenomenal intentionality” research program. The latter, I will claim, is the base position from which to understand how both properties are related, and also to understand intentionality itself.

## 1.5 Representationalism: intentionality and its relation with consciousness.

What is the relation between consciousness and intentionality? How this has been understood? According to Mendelovici and Bourget some philosophers “have combined tracking theories of intentionality that apply to perceptual representation with intentionalism about phenomenal consciousness, the view that phenomenal consciousness is a species of intentionality. The resulting view is sometimes called “tracking representationalism” (Mendelovici and Bourget, 2014, p. 326). Thus, the result has been a representationalist position – “the view that all the characteristic properties of the mental can be explained in terms of representational content” (Klausen, 2004, p. 14). In other words, according to the proponents of this view like Fred Dretske (Dretske, 1995, pp. 140-141) or Michael Tye (Tye, 1995, pp. 137-138), phenomenal content is a species of representational content. However I disagree with this position: intentional content is not the same as phenomenal content, neither can it be determined exclusively in terms of this kind of tracking relations. Representationalism is an “overwhelmingly popular” (Frey, 2013, p. 78) position within philosophy of mind, but I shall argue that although there is indeed a relation between intentionality and the phenomenal character of experience, representationalism does not capture it.

### 1.5.1 Phenomenal intentionality

As I pointed out before, since the late seventies, according to Kriegel, the main research program for understanding intentionality “has been based on the attempt to naturalize intentionality by identifying a natural relation that holds between internal states of the brain and external states of the world when and only when the former represent the latter” (Kriegel, 2013, p. 1). However, in the last years of the 20th Century, another approach has entered the debate, a program called ‘phenomenal intentionality’. Some philosophers (Kriegel, 2003; Terry Horgan and John Tienson, 2002; Loar, 2003) have argued that phenomenal consciousness has an essential role to play in the theory of intentionality. Adam Pautz puts it in this way: “consciousness first” (Pautz, 2013, p. 194). So, what is this approach about? Can it be said that under this view the phenomenal character of consciousness is the source of all intentionality, and that therefore this position is internalist rather than externalist? According to Mendelovici and Bourget: “Unlike tracking theories, which take intentionality to be a matter of how we are related to features of our environments, most phenomenal intentionality theories are radically internalistic”. (Mendelovici and Bourget, 2014, p. 325)

The “phenomenal intentionality” program (PI for short) aims to improve our understanding of intentionality and its relation with phenomenal experience. In line with this program, this thesis will argue in favour of consciousness as the source of intentionality. However I will offer a somewhat different approach. The starting point of my position (to determine a theory of intentionality) will be the phenomenal character of experience based on a view supported on an indirect realist view about perception. (Most philosophers, even within a PI approach, will defend a direct realist view of perception.) From this base I will initially sever the



phenomenal character from the intentional content, in order to determine its true relations. I shall argue that the mind should be understood as phenomenal-intentional, and in term of the relevant physical ontology: non-reductive physicalism. Thus, my proposal is to be understood in non-reductive terms. It is flexible enough to deal with phenomenology and inclusive enough to deal with scientific findings. As Van Gulick suggests “It [non-reductive physicalism] is pluralistic about theories, languages, and ways of understanding, but monist enough in ontology to satisfy the demands of our physicalist world view” (Gulick, 2002, p. 298) Therefore the views that I have explored offer a promising approach to advance in the debate on the so-called hard problem of consciousness. I demonstrate that phenomenology and intentionality can be integrated in an internalistic, physicalist picture of the mind<sup>8</sup>.

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<sup>8</sup>But not simply advance. There is a feeling of pessimism in philosophy as soon consciousness appears. For example McGinn suggests: “What I want to suggest is that the nature of the psychophysical connection has a full and non-mysterious explanation in a certain science, but that this science is inaccessible to us as a matter of principle” (McGinn, 2002, p. 537). At some level I agree with McGinn: science alone will not solve the problem, but that does not mean that there are no solutions. It may be that, fooled by scientific discoveries such as that water is H<sub>2</sub>O, we are looking for the wrong properties. It may be necessary to look for higher level properties, above the level of neurons.

## 1.6 The phenomenal character of intentionality

One of the main points of this research is to get a better picture of intentionality, and the role played by the phenomenal character of experience. However, attempts to understand intentionality or the phenomenal character of experience in isolation may not be successful; to envisage a theory of intentionality it may be necessary to know how other aspects of mentality mediate in the formation of the intentional content. I am sympathetic to the view that the phenomenal character of experience must be realized by the relevant brain states. External information that impacts upon our sensorial input will be realized by phenomenal properties. In other words, phenomenal experience is produced by perceiving, e.g., the sky in a certain way, and our awareness of the sky is a product of our awareness of the phenomenal experience (the former indirect, the latter direct). In this way we can develop a criticism of the argument of transparency (Harman, 1999), a cornerstone argument for representationalism. In other words, I will argue that the phenomenal properties of which we are aware may in turn determine intentional content. This is one of the key themes of this thesis. This is an internalistic viewpoint, and clearly contrasts with the representational theory of phenomenal content (Tye, 1995, Dretske, 1995), according to which intentionality generates the phenomenal.

The standpoint that I will defend is related to that of Loar (Loar, 2003), Horgan, (Horgan, 2002), Pautz, (Pautz, 2013), and Kriegel, (Kriegel, 2013), among others. However, some of the arguments of these philosophers, particularly those of Kriegel, inherit some of the assumptions of the classic representationalist view. For example the idea of “tracking relations” is brought in so as to favour a “naturalist account of intentionality” (Kriegel, 2011, p. 6), and then to explain his

views about PI. In this case it is debatable as to whether these ‘tracking relations’ can be accounted for within a correct theory of intentionality, or that intentionality can be naturalized in the ways proposed by Kriegel to finally explain how our consciousness is the source of such intentionality. One of the attractions of Kriegel’s views is his strong defence of the “experiential origins of intentionality” (Kriegel, 2011, p. 4). But I do not follow him all the way.

I will argue against Kriegel that any account of such phenomenal-intentionality based on tracking relations, and motivated by the wish to naturalize intentionality, is a dead-end. Rather my proposal is more straightforward. I shall argue that if consciousness can be analyzed through non-reductive physicalism, and if intentionality can be shown to depend upon phenomenal content, then the best path to a naturalized account of intentionality is to deal with consciousness first, and then to discover the role that the contents of experience plays in determining the content of intentionality. For that reason, if intentionality is grounded on consciousness, we must begin with an explanation precisely of the phenomenal character of the experience to understand our minds, and our understanding of the external world.

### 1.6.1 Phenomenal intentionality and its internalistic outlook.

One of the key points in the phenomenal intentionality program is, according to Kriegel, that "...Phenomenal intentionality is a basic kind of intentionality and functions as a source of all intentionality" (Kriegel, 2013, p. 9). On this point I agree with Kriegel. The phenomenal character of intentionality is not constitutively dependent on what happens outside the head. However, this internalistic position – one of the core tenets of the 'phenomenal intentionality' program – is a controversial issue. But how can this internally content be explored? Brian Loar in his article 'Phenomenal Intentionality as the Basis of Mental Content' (Loar B. , 2003) suggests "that intentionality does not presuppose reference and it is not externally determined" (Loar, 2003, p. 231). Loar argues for this position via a thought experiment in which we see some lemons, some of which are hallucinations. He concludes "that we are aware of internally determined phenomenal features of visual experience"(Loar, 2003, p. 239). The argument is effectively that since you cannot distinguish between real lemons and non-real lemons on the basis of external factors alone, the phenomenal elements determinative of this discrimination cannot rest upon external factors. There is indeed an internal realization of the experience.

### 1.6.2 Problems with narrow content

Some philosophers like Horgan (2002) claim that phenomenology is narrow “in the sense that it does not depend constitutively on what’s outside the skin, or indeed on what’s outside of the brain” (Terry Horgan and John Tienson, 2002, p. 527). This is of course a basic claim against representationalism. In other words, the phenomenal character of experience is not necessarily determined exclusively by what happens outside the head. Indeed, intuitively and based on the arguments explored by Loar, and based on the idea of a Brain in a Vat (BIV for short), it can be claimed that there is phenomenology that must be internally realized. Indeed, as Horgan and Tienson asserts

....it is not constitutively dependent upon anything outside of phenomenal consciousness itself; in this sense, it is intrinsic. Your phenomenology, being narrow and intrinsic, supervenes nomically upon physical events and processes within your brain. Hence, your phenomenology is shared in common with a BIV physical duplicate of your own brain (Terry Horgan and John Tienson, 2002, p. 257).

However, it has been claimed (Pautz, 2013), that one of the issues with the argument over narrow content is that it depends on “brain in a vat” scenarios and this is not enough. In the words of Pautz, it is required to accept a version of “phenomenal internalism” but this must be “rooted in psychophysics and neuroscience” (Pautz, 2013, p. 224). I agree. To defend the view that consciousness determines intentionality, and that both are determined by brain states it is required to know what the empirical evidence can show us.

Nonetheless, I will use some scenarios related to BIV as a conceptual understanding to argue against certain aspects of representationalism.

## 1.7 Understanding the phenomenal-intentional physical nature of the mind: new directions of discussion.

What is it that we really want to know about the mind, and particularly consciousness? What we need to talk about first is how to understand our minds, and one path to explore is to understand how a set of properties like consciousness and intentionality interact. Then we need to settle on a physical ontology in terms of which the mind might be understood in the simplest way. It is my view that the most credible metaphysical picture of consciousness (and the mind) is provided by non-reductive physicalism. Understanding consciousness in isolation, in reductive or dualistic terms, is a dead-end. However, if the aim is also to get a more empirical answer about how consciousness arises from physical matter (with reference to how matter is organized in brains like ours) there will be a lot of work to do by the relevant empirical sciences: neuroscience, biology, linguistics and so on. The answer to this question may depart from our best scientific knowledge, but this does not mean we should give up or be pessimistic about consciousness, as Van Gulick (1989) would agree. The relevant research to determine the physical nature of our minds, and close any gap that may produce dualist assumptions, needs to continue. But the idea that consciousness can be explained by the neural properties of the brain is insufficient to understand our minds. An explanation of consciousness must necessarily include our intentional states, and this will explain better the unity of the mind and its physical nature.

However, this is the source of a lot of confusion, because the brute assumption that, by reduction, the neural properties are the relevant properties of our phenomenology by which to explain our consciousness, is as dogmatic as the contrary position, that there is nothing in the head relevant to our phenomenology.

Tye is a proponent of the latter attitude: “Peer as hard as you like at the neurons....you will not find any phenomenology” (Tye, 1995, p. 162). Whilst I do not wish to defend Tye’s overall philosophy, this claim in itself could be true. You will not find the phenomenology by looking at neurons. But not because the phenomenology does not arise in the head, but rather because, by means of reduction, you will not find it. Reductionism simply fails to find bridging laws connecting the phenomenal realm. Yet even were it to be found that the neural properties are different from the phenomenal properties, both respond to a physical history, and hence, to a physical ontology. I will argue that this lack of bridging laws need not entail that the phenomenal experience is something above and beyond the physical world<sup>9</sup>. But because there are no such laws, reductionism will not be the path by which to clarify the hard problem of consciousness.

And yet, as I will show, our brain states produce intentionality that is shaped by our phenomenology, and this is the reason why our mental states – that is to say, our minds – need to be understood as phenomenal-intentional states. In other words: no brain states, no consciousness and no representation. If there were no phenomenal-intentional mental states, there would be no mentality. There is an analogy with space and time which are part of one structure; you cannot talk about space without talk about time. Similarly, consciousness and intentionality comprise the structure of our mental states.

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<sup>9</sup>Consciousness cannot be a property that simply appears as a magic trick, in the same apparent manner as a rabbit from a hat. If consciousness is there, it is because on the one hand there is a brain that supports the realization of the experience. Hence, there is indeed a physical history: a biological process, an evolutionary process that allows this consciousness to come into being. On the other hand, consciousness has a role to play in the interpretation of our world, and this should be understood in the way that consciousness is related to intentionality. Therefore, to understand consciousness it is not enough to look at how it arises from the ‘soggy grey matter’. This idea is a good way to understand the problem, but it will not provide a full explanation of how and why consciousness exists, and what constitutes consciousness.



### 1.7.1 Understanding the hard problem of consciousness

This analogy, and the arguments explored in the next chapters, suggests that the hard problem of the mind is not just the problem of consciousness. Rather the nature of this whole structure needs to be discussed. In other words, rather than talk about consciousness or subjective experience as just one independent aspect of the mind, we should discuss the nature of our minds in terms of this structure. This structure is physically implemented by brain states that react causally to the chain of events triggered by the objects present to our perceptual processes. And, as I said before, understanding intentionality in the way that I will explain, entails a new way of understanding the overall problem of our minds. The hard problem of consciousness must involve our phenomenal experience and our intentionality! This view that has not previously been fully explored, for previously intentionality has only been granted an explanation in external terms and consciousness was seen as the only property that needed to be explained in terms of brain states. Although there is indeed a role that the neural properties of our brains play, and this role is fundamental to our consciousness and intentionality, I am sympathetic to the view that the psycho-chemical properties of our neurons are not the properties of our consciousness and intentional states. Thus, as Fodor has explained, it will not be possible to find bridge laws that connect such properties with more fundamental physical properties. Hence, the idea of physicalist ontology based on a non-reductive approach as an alternative to dualism and the reductivist's problems.

However, my internalistic and physicalist view suggests that intentionality is not determined exclusively by external factors, rather our mental states are a compound of phenomenal and intentional states internally realized by the micro-

physical properties of the brain, but not reducible to these properties. The problem is that a clear physicalist explanation is the source of the consciousness' hard problem and the source of dualist intuitions. An alternative that tries to combine some of the elements of dualism and some of the elements of physicalism is panpsychism, endorsed by David Chalmers. According to Chalmers, "everything has a mind" (Chalmers D. , 2013) But then, what is a mind? If it is just consciousness, how do we explain intentionality? As was previously mentioned, Chalmers explains consciousness as a fundamental property, but leaves intentionality as an external property (Chalmers, 1996, p. 82). I disagree. Since the mind must be understood physically, it makes no sense to say that one property is generated internally inside the head (consciousness) and the content of the other is generated externally (intentionality). However, to progress further with the problem we must clarify the relationship between consciousness and intentionality.

## 1.8 Concluding remarks

This research will not support the tracking-externalist theories of intentionality or any representationalist account of how intentionality and consciousness are related. I will defend a physicalist picture of our consciousness and intentionality, and therefore of the mind. I will defend a position in which consciousness is the basis of intentionality. To do this I shall develop arguments against representationalism, and then try to deal with consciousness independently via a non-reductive physicalism. This will be the metaphysical core of my thesis. It will also be necessary to sever the phenomenal character of the experience from the intentional content. This will be done by means of an internal realization of the experience in terms of brain states but based on an indirect realist view. In this way the phenomenal character will be viewed in terms of internal realization; and from this position we will be able to achieve an improved understanding of the role of intentionality and of how it is dependent on phenomenal properties. In other words, in order to provide a naturalistic account of intentionality, it is first necessary to provide a convincing naturalistic account of consciousness. This is the best path by which to approach the hard problem of consciousness.

## 1.9 Problem Statement

Since the second half of 20<sup>th</sup> Century, there has been a trend in favour of a naturalistic account of intentionality i.e. to explain intentionality via the presence of specific external conditions. To this end intentionality has been explained through naturalistic accounts based on “tracking relations”, and the relation with the phenomenal character of experience has been analyzed through representationalism, but, as I will argue, this may not be the best way to explain how intentionality and phenomenal consciousness are related. However, the position held by most philosophers is to ground the phenomenal in the intentionality content.

Currently, within the phenomenal intentionality program, consciousness is taken to be a basic property and, as such, the source of original intentionality. Contrary to tracking intentionality, the approach of phenomenal intentionality is internalist. However, this internalist approach does raise certain problems. In particular, there is a pressing need in the phenomenal intentionality research program to find a better explanation for the intrinsic nature of consciousness, and its narrow content. A better explanation is needed in order to understand the relationship between intentionality and phenomenal properties, and, more specifically, to ground intentionality upon phenomenological properties, and in turn to understand phenomenal properties within a context of non-reductive physicalism. But, as will be seen, most importantly, reconfiguring the relationship between phenomenal properties and intentionality has repercussions for how we approach the hard problem of consciousness.

## 1.10 Aim and Scope of the Study

The objective of the research is to explore how our consciousness is grounded in our brain states, and in turn how such brain states ground our intentional states; although, this way of explaining intentionality has not been totally addressed from a philosophical or from a scientific perspective, this position cannot be ruled out. As will be seen, a better understanding of intentionality will lead to an improved approach to the hard problem of consciousness, and as will be explored, the relations between these two aspects will be central to understand physically our minds, which will in turn shed light on the main problems that have been in the philosophical and scientific debate over the last 50 years. Although my thesis is primarily addressed the problems of the human mind, its conclusions could apply in principle to other physical creatures (i.e. with suitable brains to realize experiences and intentional states). Likewise, the results of this thesis could impact other areas of interest like cognitive science, psychology, cognitive comparative studies between different species, or developments in Artificial Intelligence, where a conceptual framework to understand the nature of the mind is required.

## 1.11 Overview of the thesis

To complete the aforesaid objectives, the remainder of the thesis will be divided into five chapters, each of which will cover a particular issue, making a total of six chapters. The developments of each chapter will be integrated within a complete picture of the physical nature of our minds, based on its phenomenal and intentional aspects.

Chapter 2: Exposition and critique of externalist theories of intentionality.

Chapter 3: Exposition and critique of reductionist account of consciousness. In this chapter non-reductive physicalism will be explored and defended.

Chapter 4: In this chapter the connection between intentionality and consciousness will be explored. Here there will be an argument to support the indirect realist view about perception. This will be the key to understanding the internal realization of the experience, and how our phenomenology can be severed from intentional content (i.e. 'severed' in the sense that they will no longer be connected in the way representationalism understands the relation). In this chapter I will explore the distinction between intrinsic and derived intentionality, and will conclude with the arguments that show how our consciousness may determine our intentionality. This chapter will explore some of the problems facing the phenomenal intentionality program, and how my view contributes towards a better understanding of the phenomenal sources of intentionality.

Chapter 5: Solution to the hard problem. This chapter will directly address the hard problem of consciousness/the explanatory gap. I shall argue that our consciousness does not just determine our intentionality, but our phenomenal-intentional states in turn determine the primary qualities that determine our

scientific and objective understanding of the world. This is an argument that sheds light on the hard problem of consciousness.

Chapter 6: In this chapter, the conclusions of my research will be summarised, including my central conclusion. Further areas of research will be suggested.

## CHAPTER 2

### TRACKING REPRESENTATIONALISM

For myself, I think that the only plausible way a Materialist can deal with secondary qualities is completely to reverse the whole program started by Galileo, a programme that has persisted for so long. What we should do is put these qualities back in the physical world again.

-David Armstrong, 1999, p. 124

#### 2.1 Introduction

As human beings we experience and represent the world. For example, imagine that you are in a supermarket, assessing data based upon the external features of fruits. You touch the fruit, you look at them, smell them, and then you make your decision and choose. The belief that the apple is fresh is about the apple and its freshness, and the visual experience of blackberries is about blackberries: about their shape, colour, taste, and so on. This aboutness of our mental states is intentionality; via intentionality we represent what is (or is not) in the world. Our phenomenal states relate to the way that we experience the object. These thoughts motivate making intentionality the foundation of representational theories of consciousness. This view typically identifies these apparently distinct



aspects of mind as the same. According to Michael Tye (2000), “phenomenal character is one and the same as representational content” (Tye, 2000, p. 45).

However, I disagree with that claim; and in this chapter I will argue that the phenomenal character of experience cannot be reduced or fully explained in terms of representational content. These concerns have been previously aired with regard to phenomenal intentionality (Horgan and Tieson, 2002, Loar, 2003, Kriegel, 2013, Pautz, 2014). I will aim to develop them further. I will criticise both tracking-theories of intentionality and classic representationalism, and I will argue that the standard representationalist thesis defended by Tye (1995) and Dretske (1995) fails to explain the phenomenal character of experience. I will argue, against the standard representationalist thesis, that in fact, all that matters to the phenomenal character of experience is the brain state, rather than the intentional content. This means that there must a path to firstly determine the phenomenal character as internally realized, and secondly, sever such phenomenal character from the intentional content. If my claim is correct, then consciousness cannot be a direct-external relation to the world, as defended by representationalism through tracking theories of intentionality. This will serve the future purposes of my research. I will argue that in order to understand the relation between intentional content and phenomenal character it is better to start with consciousness rather than intentionality. This in turn will offer a better understanding of our minds. The arguments that I will present will challenge some of the major claims of the last 30 years in philosophy of mind, which have been widely influenced by the concept of representation. They will also impact upon other fields like cognitive science, by showing that a good understanding of representation at the theoretical level can impact upon the conceptual bases of how the mind works within those

frameworks. And yet, my approach will not be entirely unproblematic for physicalist approaches.

## 2.2 Representationalism: the place of secondary qualities

Tracking representationalism aims to reduce phenomenal character to representational content. I will argue that, although there is a relationship between both aspects, the phenomenal character of experience cannot be reduced to representational content. There is a relation indeed between both aspects. This is a point on which I agree with the views sketched by representationalism – but my claim is that how this relation has been understood is plainly wrong.

Intentionality has been explained – at least in the last 30 years in the philosophy of mind – in terms of a particular scientific vocabulary. Thus, intentionality has seemed more amenable to a scientific explanation than consciousness, hence, the idea is that by naturalizing intentionality, consciousness will be explained in at least some relevant physical aspects. The general aim has been to explain it in physical terms and so to find the place of experience in the natural world – i.e. in terms of intentionality. This general motivation is defended by D.M. Armstrong, who claims that:

For myself, I think that the only plausible way a Materialist can deal with secondary qualities is completely to reverse the whole program started by Galileo, a programme that has persisted for so long. What we should do is put these qualities back in the physical world again. (Armstrong, 1999, p. 124)

This passage is important in the whole representationalist enterprise. It is one of the objectives and key positions to support the thesis that colours or smells – for example – are not mind dependant qualities. These qualities are not in the head,

but instead belong to things or properties out in the world. According to Tye, “Colours are objective, physical features of objects and surfaces” (Tye, 1995, p150). In other words, Michael Tye, and classic representationalism, claims that mental states represent the objects themselves – secondary qualities are not in the mind, and there are only phenomenal qualities which arise when we represent the world. Thus, classic representationalism locates ‘secondary qualities’ in the physical world, and explains the objectivity of these properties in the world, in other words, redness, for instance becomes a property that represents certain external surfaces as “physical features of objects and surfaces” (Tye, 1995, p. 150). However, this may be a problem as Tye admits, for "on the face of it, colours and other “secondary qualities” pose a special difficulty for the theory I have been developing" (Tye, 1995, p.144). I will shortly return to these concerns and to the problems with Tye’s theory in general.

But how should representationalism be defined?

As mentioned on page 6, Mendelovici and Bourget argue that because tracking theories became so popular, basically, representationalism tries to explain consciousness in physical terms: firstly, to explain phenomenal consciousness in terms of intentionality or the aboutness of mental states, and secondly, to explain “intentionality in terms of relations to the environment” (Mendelovici and Bourget, 2014, p. 231). Based on these claims, the path of representationalism becomes clear. It tries to offer an acceptable explanation of the phenomenal character of the experience in the simplest physical terms possible, and to offer an account on how we represent and experience the world in the same explanation. However, this has a cost, in that ultimately representationalism has trouble explaining how our dreams or hallucinations are possible without an object in front of us, or how it is that if we just close our eyes we may still see something. Those

questions are problematic to representationalism, but the overall explanation of how the phenomenal character of the experience should be understood is also not quite satisfactory. Against representationalism, I will argue that consciousness cannot be a direct relation with the world, and, furthermore, tracking theories of intentionality are unable to solve the hard problem of consciousness. Not only were its adherents too optimistic in the '80s and '90s, my arguments will show that such optimism was too high. Indeed, the representational theory may well be irrelevant to explaining the mechanism that underlies phenomenal experience.

### 2.3 Classic representationalism: Tye and Dretske

To start with, in his book *Consciousness, Colour and Content*, Tye argues that “Representationalism is a thesis about the phenomenal character of experiences”<sup>10</sup> (Tye, 2000, p. 45). It is a thesis that argues that intentionality<sup>11</sup> and phenomenal properties are closely related, and not two independent aspects of mind. But how are these properties related under representationalism? Tye (2000) claims that “experiences that are alike in their representational contents are alike in their phenomenal character” (Tye, 2000, p. 45). In other words, the phenomenal character is determined by its representational content; and since this representational content is externally determined, this view is highly externalist; that is to say, the qualities of experience were put back in the external world, where brain states track the relevant features and thereby constitute representations of them – through “causal co-variation” (Tye, 1995, p. 105) or evolutionary history (Dretske, 1995).

Hence, according to Tye, phenomenal character can be explained in terms of representation: “phenomenal character (or what it is like) is one and the same as a certain sort of intentional content” (Tye, 1995, p. 137). For example, if you look at a red apple in good light – or optimal conditions – then your visual experience relates you to the apple, and the colour of the apple itself constitutes the

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<sup>10</sup>I take from David Chalmers some definitions. Chalmers argues that “I will take *representationalism* to be the thesis that phenomenal properties are identical to certain (pure or impure) representational properties” (Chalmers, 2004, p. 156). According to Chalmers, representationalism comes in two main varieties: “pure representationalism and impure representationalism” (Chalmers, 2004, p. 156). What does this mean? According to Bourget and Mendelovici (2013) “A pure intentional property is a property of representing certain content. An impure intentional property is a property of representing certain content in a certain manner. For example, the property of representing redness is a pure intentional property, while the property of representing redness in imagination is an impure intentional property” (Bourget and Mendelovici, 2014, pp. 210-211)

<sup>11</sup>Tye (1995, 2000) and Dretske (1995) are prominent defenders of modern representationalism; I will use the positions of both to sketch the main features of representationalism and the criticisms that it faces.

representational content. The phenomenal character of the experience of the red apple (its redness) is present only in virtue of a feature such as the external property, red (because of the transparency of the experience argument). Hence the external property carries the phenomenal character of looking red. According to Tye, the “what it is like” aspects of phenomenal states “are second-order, broadly physical properties that are realized by objective, first-order, physical properties of those states.” (Tye, 1995, p. 164) And it is this explanation that renders representationalism compatible with physicalism: that is to say, if the brain state appropriately tracks the redness of the apple, then the phenomenal aspect is realised, therefore – in Tye’s view – it can be said that representationalism explains physically and metaphysically the conscious experience.

Dretske is another key philosopher who argues in favour of representationalism, and in some ways, Dretske’s theory of representation is similar to that of Tye. Although I shall focus more on the ideas that they hold in common rather than their differences, one important difference is the way that information is carried. In Tye it is carried via causal co-variation; in Dretske it is carried via evolutionary processes. Dretske in the book *Naturalizing the Mind* defines how representation must be understood: Dretske claims that: “The function of a system (or state) is what it is designed to do, or what it is, by design, supposed to do” (Dretske, 1995, p. 6). Thus, for Dretske, evolution may determine the mechanism that underlies our representation:

A state is a consciousness experience of F (thus making its possessor sensuously aware of F) if the state has the natural (systemic) function of providing information about the F-ness of objects standing in the appropriate contextual relation (C) to the system. States thus become conscious by acquiring, for some determinable

property F, the function of indicating, for appropriately related objects, their determinate value of F. Since states acquire their function through an evolutionary process – here assumed to be natural selection – natural selection is being identified as the source and creator of conscious experience. (Dretske, 1995, p.162)

In other words, according to Dretske, in order to have a representation, it is required that a subject represents an object just in case the subject has been designed by evolution to represent the kind of properties determinate of the object; as a consequence, any system which either lacks such a history or lacks the relevant brain states to track the objects and its properties will have no representational states.

One of the problems for those approaches is to locate the phenomenal character – where exactly is it? Michael Tye (1995) claims: “experience and feeling arise at the level of the outputs from the sensory modules and the inputs to a cognitive system. It is here that phenomenal content is found” (Tye. 1995, p.137). In other words, under representationalism, according to Tye, to discover ‘what it's like’, it is “required to look outside the head to what the brain states represent”. That is to say, phenomenology is, according to Tye, “externally based” (Tye, 1995, p. 151). Consequently, the phenomenal character is not in the head. This claim depends on the argument of transparency – roughly that what we experience are the objective properties of the object and nothing else (Tye, 1995, p.151). However, if this argument fails to explain the relations between sensations and external mind-independent physical entities (even in the case of hallucinations) – then it cannot be said that phenomenology is externally based. I will return to this point shortly.



A second problem, linked to the previous one is how a physical state is related to phenomenal character. In other words, if phenomenal character is explained in representational terms, and the brain state tracks the features of the environment through causal co-variation or evolutionary history, how is it that a physical state P has a phenomenal character? In Tye's words, "Why does physical state P feel like this?" (Tye, 2000, p. 32) This is the problem of the 'explanatory gap' (Levine, 1983). As I will show, representationalism does not have a satisfactory solution to this problem. I will explain and defend my position on the explanatory gap in the next sections.

A third problem, associated with the previous two concerns, is that for tracking representationalism, neither causal co-variation nor evolutionary history may sufficiently determine how phenomenal character is in direct relation with the world via representation.

To sum up this section, according to Dretske (Dretske, 1995) the representational thesis is an externalist theory of the mind. In other words, a brain state – in Dretske's view – has a function to represent, and so the phenomenal experience represents things as they are in optimal conditions. According to Michael Tye "phenomenal character is one and the same as a representational content" (Tye, 2000, p. 45); the phenomenal character is not in the head or directly related to any specific neural correlate. Rather any phenomenology is externally based.

I agree that there is a relation between intentionality and phenomenal experience, but not in the way developed through representationalism. I shall argue that representationalism ultimately fails to explain the phenomenal character of experience in terms of representation. But, firstly, I need to explain and criticize how exactly the phenomenal character is conceived by representationalism based on the three previous points I sketched.



## 2.4 Representationalism and the nature of the phenomenal character of experience: the problem of the explanatory gap

According to Dretske

“... the phenomenal appearances, are the way experience represents things to be” (Dretske, 1995, p. 22). And like Tye, Dretske believes that what is represented is outside the head. A brain state has evolved to represent, and by means of this representation the phenomenal experience appears, if optimal conditions are met. And as was pointed out before, what determines representation is not exclusively causal co-variation<sup>12</sup> as Tye argues, but rather the evolutionary imperative to carry correct external information. But, like Tye, Dretske believes that phenomenal experience consists of representation achieved through brain states tracking the correct features under optimal conditions. Dretske explicitly states that:

The representational thesis is an externalist theory of the mind. It identifies mental facts with representational facts, and though representations are in the head, the facts that make them representations – and, therefore, the facts that make them mental – are outside the head (Dretske, 1995, p. 124).

If these facts are outside the head, they can be described and explained in some physical vocabulary, so physical explanations of consciousness are possible, and therefore under these accounts there are no more mysteries about subjective experiences. In other words, that is the reason why representationalism puts

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<sup>12</sup>This position may have some advantages for naturalist philosophers. As Tim Crane explains: “The advantages of a causal theory of mental representation for naturalistic philosophers are obvious. Reliable indication is everywhere: wherever there is this kind of causal correlation there is indication. So, as indication is not a mysterious phenomenon, and not one unique to the mind, it would be a clear advance if we could explain mental representation in terms of it. If the suggestion works, then we would be on our way to explaining how mental representation is constituted by natural causal relations, and, ultimately, how mental representation fits into the natural world.”(Crane, 2003, p. 173)

phenomenology outside the head. But if, as Tye claims, phenomenology is externally based and is not inside the brain, is his account able to solve the hard problem of consciousness and the explanatory gap (Levine, 2002)? In Tye's view, the explanatory gap turns out to be an illusion (Tye, 1995, 2000). However, I do not agree that the explanatory gap is just an illusion, and I do not agree that Tye successfully addresses this problem.

#### 2.4.1 What is the gap?

Adopting the terminology of David Chalmers (2002), imagine that "P" is a "long sentence" detailing all the physical properties of every entity in the universe, and let "Q" be any "sentence about" the "phenomenal character of experience" – for example, the redness of an apple (Chalmers, 2002, p. 249). Thus, Chalmers assert that "Many puzzles of consciousness start from the observation that there is an apparent epistemic gap between P and Q: a gap between knowledge of P and knowledge of Q" (Chalmers, 2008, p. 167)<sup>13</sup>.

Joseph Levine (1983) introduced the term "explanatory gap"; according to Levine, statements like "heat is the motion of molecules" express an identity that is fully explanatory, with nothing crucial left out, while "psycho-physical identity" statements like "Pain is the firing of C-fibers" or "to be in pain is to be in state F" leave a significant explanatory gap (Levine, 2002, p, 355). That is to say, the gap may entail both an epistemological gap (how we know Q, given P), and an ontological gap (what is the nature of Q). What does this mean? In Levine's words:

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<sup>13</sup>As David Chalmers pointed out "from these epistemic gaps, some infer an ontological gap. One may infer this ontological gap directly from the explanatory gap: if we cannot explain consciousness in terms of physical processes, then consciousness cannot be a physical process" (Chalmers, 2010, p. 307)

This difference between the two cases reflects an important epistemological difference between the purported reductions of water to H<sub>2</sub>O and pain to the firing of C-fibers: namely, that the chemical theory of water explains what needs to be explained, whereas a physicalist theory of qualia still 'leaves something out.' It is because the qualitative character itself is left unexplained by the physicalist or functionalist theory that it remains conceivable that a creature should occupy the relevant physical or functional state and yet not experience qualitative character (Levine, 2002, p. 359)

Thus when we identify water with H<sub>2</sub>O, we do so by virtue of some theory, for example, of a molecular theory which explains the behaviour of water in terms of H<sub>2</sub>O. Levine says: "I claim that given a sufficiently rich elaboration of the story above [concerning the microphysical behaviour of H<sub>2</sub>O molecules, intermolecular forces, etc.], it is inconceivable that H<sub>2</sub>O should not boil at 212°F at sea level." (Levine, 1983, p. 359) But even if it is conceivable that there could be "water" without H<sub>2</sub>O (that is, a substance possessing all the superficial marks of water) and pain without C-fibers firing (there might be a creature with pain but with opening D-Valves or computer inputs rather than C-Fibers), it is inconceivable that there be H<sub>2</sub>O without water and yet it is still conceivable that there be C-fibers without pain. And here is the gap: physical theories of C-fibers do not explain pain or the qualitative character associated with it. Representing or explaining in scientific terms the nature of C-fibers firing does not epistemologically necessitate or explain the qualitative character of pain. In other words, we do not fully understand the connection.

## 2.5 Tye's use of phenomenal concepts: the gap strategy

According to Tye the nature of the phenomenal states can be analyzed in terms of a physical base. In his words:

...phenomenal states have a broadly physical essence... realized by objective, microphysical types. These essences are second-order: each phenomenal state is analyzed as being *a state* that causally co-varies with such and such bodily or environmental features in optimal conditions and that is poised for cognitive responses (Tye, 1995, p. 171).

But, in order to grasp the phenomenal state, phenomenal concepts are required. According to Tye, phenomenal character is phenomenal content, and these phenomenal states are both “perspectival and physical” (Tye, 1995, p. 171). Thus, for Tye, “knowing what it is like to undergo an experience requires one to have a certain experiential point of view or perspective” (Tye, 1995, p.12). In other words, if you are bitten by a Terciopelo<sup>14</sup>, knowing what it is like unfortunately requires one to have already been bitten by a Terciopelo or to imagine the experience based on the pain someone else had suffered. Hence, Tye concludes that:

Phenomenally conscious states then are subjective in the sense that they require adopting a certain experiential point of view – it is in that way that those states are perspectival. Physical states are not perspectival; understanding lighting or gold does not require any particular experiential point of view (Tye, 1995, p.12).

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<sup>14</sup>The Terciopelo or *Bothrops asper* is a species of venomous pit viper ranging from southern Mexico to northern South America.

This is how Tye explains why a person who was born blind or deaf cannot experience lightning by sight, but he can understand fully the physical process involved – electrical discharges, etc.. That is to say, a particular experiential point of view will be fundamental to our phenomenal states, in the sense that needs to be “poised”, in the relevant, causal-functional sense propose by Tye. But to do this, Tye needs a strategy, and this is based on his view on phenomenal concepts. Let us now examine the phenomenal concept strategy developed by Tye. He claims that, “Phenomenal character requires representing the relevant intentional content via appropriate concepts”. The appropriate concepts are “phenomenal concepts” – “concepts” used “when a person introspects his phenomenal state”. Thus, through introspection “the person forms conceptions of what it is like for him at that time” (Tye, 1995, pp. 166-167)

In other words, fully understanding a wisdom tooth or third-molar pain requires grasping how it feels; its distinctive phenomenal character, or what it is like to undergo this kind of pain. That requires applying to the third-molar pain the “concept that is typically applied when people introspect that pain and pay attention to what it is like subjectively” (Tye, 2000, p. 24). This concept is a phenomenal concept. Without that concept, according to Tye, one is “prevented from possessing the kind of understanding of pain provided by introspection” (Tye, 2000, p.24). To take another example, Tye suggests that

in order to possess the phenomenal concept of red it is required that one have experienced red and that one have acquired the ability to tell, in the appropriate circumstances, which things are red, directly on the basis of one's experiences. On this view, a person born blind, who remains so, could not possess the phenomenal concept of red (Tye, 1995, p. 167).

So, what about the explanatory gap? As I pointed out, the explanatory gap between physical and phenomenal properties dominates current debates in philosophy of mind. Tye in the article “The explanatory gap as cognitive illusion” presents some arguments to determine how the explanatory gap may be faced. But instead of presenting a suggestion as to how the gap might be closed, he simply denies that there is an explanatory gap after all. Tye explicitly says that:

Since an explanatory gap exists only if there is something unexplained that needs explaining, and something needs explaining only if it can be explained (whether or not it lies within the power of human beings to explain it), there is again no gap (Tye, 2000, p. 33)

How does Tye arrive at this conclusion? He moves the focus of the problem to the way that different concepts apply to our phenomenal states, and to the objects in the world that require, according to Tye, “associated description citing characteristic effects or manifest features of the kind” (Tye, 2000, p. 37). Thus, phenomenal concepts are ‘perspectival’<sup>15</sup> and cannot be explained in terms of such “natural kind concepts” that are “rigid” (Tye, 2000, p. 37), and because, as Tye suggests, these “phenomenal concepts” do not have “any descriptive reference-fixers” (Tye, 2000, p. 37), so there is nothing to explain. So Tye concludes that there is no gap in the world between “the phenomenal and the physical (or functional) goings-on” (Tye, 2000, p.38). Hence, for Tye, there is only “old physical stuff that we conceptualize in different ways” (Tye, 1995, p. 182), and nothing more needs to be said.

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<sup>15</sup>For Tye, the functional role that the concept plays – that of picking out states in introspection - is what makes it perspectival (Tye, 2000, p. 27).



But what is the advance in Tye's account? In my view there is no advance; he just moves the gap from the realm of phenomenal character to the realm of phenomenal concepts. Tye just uses the phenomenal concept strategy in order to accommodate his representational explanation. In other words, as Gertler (2001) suggests, on the standard account of the explanatory gap, the fact that water is H<sub>2</sub>O is true, is accounted for by some "conceptual facts" and some "empirical facts", and "Tye denies that we should expect that for physical-phenomenal identities" (Gertler, 2001, p. 690). That is to say, according to Tye "the character of phenomenal concepts and the way they differ from third-person concepts conceptually guarantees that the question has no answer" (Tye 2000, p. 34). As Gertler points out, "What guarantees that the question has no answer is just that the phenomenal concepts are perspectival, while physical concepts are non-perspectival. This qualifies as a conceptual guarantee since the irreducibility of the perspectival to the non-perspectival is a conceptual fact" (Gertler, 2001, p. 690)

But then Tye moves the gap to the way that concepts may explain our phenomenal phenomena and our physical phenomena, hence, there is still a gap under Tye's view. The problem of the explanatory gap cannot be solved by making this distinction between concepts and by then appealing to the idea that one concept cannot be reduced to the other. To deny that there are such descriptions is to beg the question against the entire debate. Phenomenal concepts may be as Tye describes, of course, but his only argument for them being so is that if they are, then the explanatory gap is an illusion. Thus, Tye does not solve the problem of explanatory gap. He simply avoids looking at it. He looks at relations between concepts, rather than relations between physical processes and consciousness states, and he describes the concepts in a manner that suits

his theory. He simply does not address the crux of the problem, the problem which generates philosophical interest in consciousness in the first place.

So pending some stronger case, the gap remains, in my view, as an epistemological one, with potentially deeper metaphysical implications. Under Tye's point of view, there is nothing to be explained, the gap is just an illusion, but I will show that without a proper account of the explanatory gap the standard representationalist point of view fails to explain the phenomenal character of experience as a direct relation with the world through representation. It does not explain, in particular, how a hallucination may have a phenomenal experience in a direct relation with the world, or how it may co-vary with something not real.

## 2.6 The phenomenal character and the argument for transparency of experience: the hallucination problem

The transparency of experience plays a key role in the current debate about the phenomenal character of experience or qualia. Firstly, the transparency argument has been used by representationalists (Tye, 1995) to support their view that the phenomenal character of our experience can be explained in terms of its intentional or representational content: "experiences that are alike in their representational contents are alike in their phenomenal character" (Tye, 2000, p. 45). Secondly, within representationalism, the transparency argument is extended to hallucinations and other bodily sensations and then used to explain why hallucinations may not pose a problem to this theory of the phenomenal character of experience. I will argue against this position, and then, I will begin to build the argument against classical representationalism.

Michael Tye did not create this argument. It is an argument that can be traced back to G.E. Moore's article "Refutation of idealism". One of the key points that Moore makes is that:

..when we try to fix our attention upon consciousness and to see what, distinctly, it is, it seems to vanish: it seems as if we had before us a mere emptiness. When we introspect the sensation of blue, all we can see is the blue: the other element is as if it were diaphanous. (Moore, 1903, p. 450)

The argument presented by Moore inspired Harman to develop the idea that our experience is transparent in another way. According to Harman (1999), the argument from transparency may tell us what, by introspection, we get from the experience: and it is nothing else than the properties of the objects. This is what Harman claims:

When Eloise sees a tree before her, the colours she experiences are all experienced as features of the tree and its surroundings. None of them are experienced as intrinsic features of her experience. Nor does she experience any features of anything as intrinsic features of her experiences. And that is true of you too. There is nothing special about Eloise's visual experience. When you see a tree, you do not experience any features as intrinsic features of your experience. Look at a tree and try to turn your attention to intrinsic features of your visual experience. I predict you will find that the only features there to turn your attention to will be features of the presented tree... (Harman, 1999)

Tye goes one step further and develops this argument to support the nature of the relation between phenomenal character and representation. Tye's argument is as follows. In introspecting a visual experience of an object, Tye suggests that "your awareness of phenomenal character is not the direct awareness of a quality of your experience" (Tye, 1995, p. 47). Thus, via introspection "you are directly aware of a range of qualities that you experience as being qualities of surfaces at varying distances away... By being aware of the external qualities, you are aware of what it is like for you" (Tye, 1995, p. 47). In other words, what you experience will be determined by a direct contact with the object; for example, the redness of the apple, is just the physical red of the apple, a property that you experience directly as a result of the objective properties of the object, thus, the phenomenal character of experience is determined by the objective properties of the object. Thus, according to Harman and Tye, there is no other property of experience that we are aware of in our introspective observation. But how does this work in the case of hallucinations? The problem here is: how can consciousness always be in a direct relation with the world? How can the phenomenal character of experience be explained in the case of hallucinations or dreams, in representational terms? And, why should not a brain in a vat<sup>16</sup>, via introspection and phenomenal concepts, be in a brain state that could determine the phenomenal character of experience, without "tracking" objects of the environment?

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<sup>16</sup>As David Chalmers notes, clever scientists could arrange a brain such that it has:

...the same sort of inputs that a normal embodied brain receives...the brain is connected to a giant computer simulation of the world. The simulation determines which inputs the brain receives. When the brain produces outputs, these are fed back into the simulation. The internal state of the brain is just like that of a normal brain (Chalmers D. , 2005, p. 132)

## 2.7 The problem of causal co-variation as a direct connection of the world

One of the points of view supported by representationalism – in Tye’s account – is that the phenomenal properties of experience seem to co-vary with their intentional or representational properties. According to Tye:

What really matters, it appears, is correlation, or more accurately, causal co-variation, under optimal conditions:

S represents that P = df If optimal conditions obtain,

S is tokened in x if and only if P and because P...

When optimal conditions do not obtain, there is misrepresentation (Tye, 1995, p. 101).

However, Tye’s strong link between co-variation to external factors and phenomenology is undermined by scientific facts. Let us consider an example from research done in neuroscience concerning the case of smell and other “secondary qualities”. But first let us review the concept of “secondary qualities” in the light of representationalism and the causal co-variation theory.

If the representational program aims to put the secondary qualities in the physical world, why, in the first place, were such properties considered to be “mental” properties? The notion of secondary qualities can be traced back to at least Locke<sup>17</sup>; McGinn (1983) proposes a definition of such qualities:

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<sup>17</sup>Even to Democritus and the atomists.

...secondary qualities are defined as those whose instantiation in an object consist in a power or disposition of the object to produce sensory experiences in perceivers of a certain phenomenological character; whereas primary qualities are said not to consist in such dispositions to produce experiences (McGinn, 1983, p. 5)

But the real distinction was introduced by Galileo. Filip Buyse (2015) in the article “The Distinction between Primary Properties and Secondary Qualities in Galileo Galilei’s Natural Philosophy”, presents us with the view of Galileo about such qualities:

Now I say that whenever I conceive any material or corporeal substance, I immediately feel the need to think of it as bounded, and as having this or that shape; as being large or small in relation to other things, and in some specific place at any given time; as being in motion or at rest; as touching or not touching some other body; and as being one in number, or few, or many. From these conditions I cannot separate such a substance by any stretch of my imagination. But that it must be white or red, bitter or sweet, noisy or silent, and of sweet or foul odor, my mind does not feel compelled to bring in as a necessary accompaniment. Without the senses as our guides, reason or imagination unaided would probably never arrive at qualities like these. Hence I think that tastes, odors, colors, and so on are no more than mere names so far as the object in which we place them is concerned, and that they reside only in consciousness. Hence if the living creature were removed, all these qualities would be wiped away and annihilated. But since we have imposed upon them special names, distinct

from those of the other and real qualities mentioned previously, we wish to believe that they really exist as actually different from those (Buyse, 2015, p. 23)

In short, it can be said that secondary qualities only exist – according to the above passage – in the mind of an observer. Thus, they are qualities<sup>18</sup> that arise in the mind. And, importantly for this discussion, it has been suggested that bodies, shapes, and so on, do not have such secondary qualities. That is to say, what it is in the world is just primary qualities, and the secondary qualities just exist in our minds – as realized by brain states – thus, science can only study primary qualities. Therefore if the problem of consciousness or the explanatory gap, is how science can study secondary qualities in terms of primary qualities, the problem simply cannot be solved<sup>19</sup>. As Galileo himself suggests “I think that if one takes

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<sup>18</sup>See Nagel, 2013, p. 35

<sup>19</sup> The distinction between primary qualities and secondary qualities was introduced by Locke (1690); the former, according to Locke, are qualities that are part of the bodies, the physical bodies, like shape, motion, and so on. In the case of primary qualities, Locke claims that

Take a grain of wheat, divide it into two parts; each part has still solidity, extension, figure, and mobility: divide it again, and it retains still the same qualities; and so divide it on, till the parts become insensible; they must retain still each of them all those qualities. For division (which is all that a mill, or pestle, or any other body, does upon another, in reducing it to sensible parts) can never take away either solidity, extension, figure, or mobility from any body, but only makes two or more distinct separate masses of matter. (Locke II.8 §9)

And the latter; are qualities that act into us to give us the idea of colour, smell, texture and so on, such qualities do not exist in the object itself. Regarding this qualities, Locke claims that

Explain how water felt as cold by one hand may be warm to the other. Ideas being thus distinguished and understood, we may be able to give an account how the same water, at the same time, may produce the idea of cold by one hand and of heat by the other: whereas it is impossible that the same water, if those ideas were really in it, should at the same time be both hot and cold. (Locke II.8 §21)

This distinction suggests two paths. The first one provides the basis for science to understand and try to explain our perceptual process, for the primary qualities (motion, shape) have a fundamental role in scientific explanations of the external world. However, the secondary qualities do not so easily explain the world or our perception of it. Thus, in any modern account to explain our perception of the world, a more direct explanation in terms of primary qualities was favoured, hence representationalism and the argument of transparency. However, the distinction between these qualities needs to again be taken more seriously. I shall argue that it is a mistake to try to explain the secondary qualities in terms of such primary qualities (Tye,

away ears, tongues, and noses, there indeed remain the shapes, numbers, and motions, but not the odors, tastes, or sounds; outside the living animal these are nothing but names” (Galile, 2008, p. 185)

Regarding smell – and other “secondary qualities” – research done in neuroscience provides us with some important findings. As Pautz (2014) suggests “...neuroscience has revealed that experiences are much better correlated with neural firing patterns in the brain” (Pautz, 2014, p. 242), and he presents some empirical research that in the case of smell may help us understand the importance of such empirical evidence against the position of representationalism.

According to Cowart and Rawson:

Available evidence indicates that numerous chemical and molecular features (e.g., molecular weight, molecular mass and shape, polarity, resonance structure, types of bonds and sidegroups) can all influence the odorous characteristics of a chemical. However, no systematic description of how these characteristics relate to the particular qualities of different has been developed found in many cases. In other words, chemicals that bear little resemblance structurally can smell the same, and chemicals that are nearly identical structurally can elicit very different perceptual qualities. (Cowart and Rawson, 2001, p. 568)

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Drestke), or reductively explain it (Smart, Place) or to simply remove secondary qualities (Dennett, Churchland). Now, some philosophers, like McGinn (1983, 1996), may support the idea that there is indeed a separation between primary and secondary qualities, the latter to be explained in terms of qualia, but they also hold that the phenomenal character of experience will not be explained in the scientific and relevant terms, hence, a dualism view will still survive. However, if this distinction is understood in the correct way, it will be understood as of a vital importance to the discussion and understanding of our mind. I will return to this point in chapter 5.



But according to tracking-representationalism, and the argument of transparency, the chemical properties of the objects presented by our experiences are the ones that determine not just the phenomenal character, but also objectively what the smell is about. But can the idea of transparency explain what the smell is about? Only via a brain state is it possible, that is to say, only via a brain state, is a phenomenal experience realized – for the identification of the odour comes about via intentionality. Therefore, causal co-variation is not a reliable argument to ultimately determine how the phenomenology may be determined by the representation of external factors. On the contrary, it seems that phenomenology is not externally based. The brain itself has a very important role in the nature of phenomenal content and not only the features represented externally. Perhaps it is secondary qualities that determine, via intentionality, the primary qualities. This will be my eventual conclusion.

### 2.7.1 The phenomenal content of hallucination and the causal co-variation

As previously pointed out, according to Tye, what really matters to phenomenal character is the “representation” of general “features” or properties through “causal co-variation” if “optimal conditions obtain” (Tye, 1995, p. 105). Thus, according to Tye, our conscious states are representational states; they are brain states representing external properties. So in introspection, we are aware of states that represent the external world, and our phenomenal concepts (of colours, tastes, etc.) are concepts that we apply to understand what it is like to be in those states. The position of Tye relies upon the possibility of getting into real contact with the world, a direct connection that allows phenomenal experience be

explained via representational properties, and introspected “via the appropriate concepts” (Tye, 1995, p. 166). But what happens in the case of hallucination where there is not a real object to track? What is the causal co-variation link? I claim that this is a challenge for representationalism that cannot be met. For example, if I am in state that represents the property of seeing an apple, it would seem that such a state must causally co-vary with the apple, for it is claimed that the phenomenal aspects are realized by the states that causally co-vary with the physical objective properties that they represent. But what are the physical properties represented by any given hallucination?

According to Tye (2000), the only objects of which you are aware are the external ones making up the scene before your eyes (Tye, 2000, p. 47), because as was pointed out before, we are not directly aware of any qualities of experience – the experience is transparent. In other words, it is by introspection that we can be aware of the phenomenal character of visual experiences, and by being aware of external qualities we are also aware of what it is like. For Tye the phenomenal character itself is not a quality of the experience to which there is direct access (Tye, 2000, p. 47). Let us here remember Harman’s argument: “Look at a tree and try to turn your attention to intrinsic features of your visual experience. I predict you will find that the only features there to turn your attention to will be features of the presented tree” (Harman, 1999, 251).

Thus, the argument of transparency seems well-suited to Tye, and he uses it as a way to explain in part why it is unnecessary to have a real object in order to have a phenomenal experience. According to Tye the visual experience need not be veridical, and could be a complete illusion. “If the tomato does not exist, still you are directly aware of Q; and if some other quality replaces Q, the phenomenal character of your experience changes” (Tye, 2000, p.48) In other words, if you are

looking at a real red apple in good light, and then you hallucinate a second, identical tomato, how you will determine the redness of the real apple and the redness of the hallucinatory apple? Is there is any difference? How, in both cases, is the experience and representation determined? The representationalist cannot settle this question, the only option is to determine that at the end even the real apple and the hallucinatory apple are just realized by a brain state, and that basically what matters here is the introspection we apply to the phenomenal character. But what about the causal co-variation? How exactly does a hallucination co-vary to make a representation accurate and determine the phenomenal content? Ultimately, in a hallucination there is not any real object presented. According to Tye there are two options to fully explain the hallucination case:

- 1) Misrepresentation: this occurs when no optimal conditions are met. What are optimal conditions? According to Crane (1995), for example, “errors result from the conditions failing to be ideal in some way: bad light, distance, impairment of the sense organs, etc. (Ideal conditions are sometimes called ‘normal’ conditions.)” (Crane, 1995, p. 181), thus, according to Crane’s explanation of this position (which he rejects), misrepresentation requires an object: X represents Y if and only if X is a reliable indicator of Y in ideal conditions (Crane, 1995, p. 181) .
- 2) There is no object at all. For Tye, this is not a problem: whether or not you have a left leg, for example, you can feel a pain in your left leg; in both cases the phenomenal character of your experience can be exactly the same. Hence, according to Tye “...the existence of that particular leg is not required for the given phenomenal character. What is crucial to

phenomenal character is the representation of general feature or properties” (Tye, 1995, p.138-139).

But according to representationalism the qualities we are aware of in perception are real properties of external objects. The circle you experience exists in the external world, and blueness and roundness are properties of this circle – of its shape. In hallucination, however, we are also aware of sensory qualities, but there need not be an external object with such qualities. If you have the hallucination of a blue circle, there need not be anything blue and circular before you. Tye thinks this does not matter, because you can still be in a brain state that typically co-varies with the properties blue and circular; and this brain state will realise the phenomenology. But in that case, it is hard to see how the co-variation account makes any difference to the metaphysics of the situation. For so long as the brain state exists, there will be the appropriate phenomenology. The fact that the brain state typically performs a certain function is not essential to what it is. The same type of brain state could exist without performing that function, and indeed does in the case of hallucination. And it is not hard to imagine a world in which the same type of brain state exists, even though that brain state type has never performed the function of representing external features.

So it looks like phenomenal objects cannot be external world objects after all. Let us go further. It looks as though the problem started with Tye’s original point of view if phenomenal qualities are realized by objective physical properties (Tye, 1995, p. 57): it is not clear how a brain state will represent the phenomenology of a non-existent object. In other words, even if we introspect the properties represented, there is ultimately no way to determine how accurate or not the representation is – is it real or not? Accordingly, the causal co-variation in optimal

conditions that ensures that the brain state tracks features in the environment may not determine the correct phenomenology. Therefore, under Tye's view, it seems that representation and causal co-variation are irrelevant. This is, I claim, where representationalism fails: in the case of hallucinations and dreams, both are indeed the result of an internal process of the brain that does not depend upon an external feature of the environment. In other words, we can argue that the content of phenomenal experience is narrow, i.e. internally realized. However, Michael Tye, like Dretske, develops arguments to demonstrate that the narrow content of phenomenal experience is not possible, and then he explains why after all, a hallucination if it occurs is just a representational content of some sort of non-existent intentional object, and ultimately must be a matter of misrepresentation. We shall now look at these arguments, and then my objections and conclusion as to why tracking representationalism fails.

### 2.7.2 The Swampman brain in a vat: the problem of phenomenal consciousness as a direct connection with the external world

Is it possible that any other creature or device rather than "normal humans" could be capable of experiences?<sup>20</sup> Is the experience possible only through an external relation with the world? According to Tye, when we consider a brain state in isolation, like a brain in a vat, it is bound not to seem as though we are considering consciousness<sup>21</sup> because basically, according to Tye "The brain in a vat has inaccurate perceptual experiences – things are not as they seem –

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<sup>20</sup>Other animals are able to have conscious experiences, and if so they might be able to have representations of the affairs of the world, even though they do not have a language as humans do.

<sup>21</sup>According to modern representationalists like Harman (1999) perception is representational in the sense that it is intentional, not in the sense that it is mediated by "internal pictures."

because the brain is not in optimal perceptual conditions and the relevant brain-states are not tracking those features they would track, were optimal conditions to obtain” (Tye, 2000, p. 64). This is because conscious states are representational states; they are brain states representing external properties. So in introspection, we are aware of states that represent the external world, and our phenomenal concepts (of colours, tastes, etc.) are concepts of what it is like to be in those states; those concepts are perspectival. In that sense Tye stresses the point of view that the phenomenal experience cannot be narrow or internal; hence, for Tye phenomenology is not “metaphysically fixed by what’s going on physically in the brain” (Tye. 1995, p. 155). However, I will show that the experience after all is narrow and intentionality may not be what determines the nature of phenomenal experience. In other words, it is not true that the only source of experience is the external world, at least not in the sense that representationalism claims. This presents an obvious challenge to representationalism. For if consciousness is really involved in intentionality, and is not just an accidental medium, then the externalist view might turn out to be redundant – since the basic representative work is really done by consciousness. To put this in another way, if my claim is correct, the causal co-variation theory may be irrelevant, and representationalism – at least in its classic formulation – would be an inaccurate way of explaining the relation between phenomenal consciousness and intentionality. Let us to start explore this claim.

Within philosophy, it is widely accepted that thought experiments are both feasible and useful. One such experiment was introduced by Donald Davidson in his 1987 paper ‘Knowing One’s Own Mind’; he introduced the idea of the Swampman; a creature created by the chemical reaction produced by a lightning bolt hitting a log in a swamp.

Suppose lightning strikes a dead tree in a swamp; I am standing nearby. My body reduced to its elements, while entirely by coincidence (and out of different molecules) the tree is turned into my physical replica. My replica, the Swampman, moves exactly as I did; according to its nature it departs the swamp, encounters and seems to recognize my friends, and appears to return their greetings in English. It moves into my house and seems to write articles on radical interpretation. No one can tell the difference. (Davidson, 1987, pp. 443-444)

So the question is: is this creature able to experience and represent the world? Perhaps the Swampman lacks the linguistic abilities to determine the meaning of any concept. However, Michael Tye claims that the Swampman's brain states can still track the features of the environment, and therefore the Swampman is able to have conscious experience (Tye, 1995, p 155). This is because, according to Tye, "representational states are experiences" if they are "poised to affect the beliefs (and other intentional states) of the system they are within" (Tye, 1995, p.137-138), and also there is a causal connection. But this may lead us to think that the externalist theory of intentionality is redundant. Because where are the sources of such experiences and representations in the case of the Swampman? For if the decisive factor is the mediation between sensory modules and cognitive processes, what difference does it make whether the mediating item has an externalist content or not? The Swampman and the brain in a vat could both be phenomenally conscious on this criterion, and if that were the case, then the direct relation of phenomenal consciousness with the world through causal co-variation seems unnecessary, together with the whole representationalist enterprise. For if representational content becomes conscious by becoming a part of a cognitive

system (Tye, 1995, p. 137), and as Tye suggests “experience and feelings arise at the level of the outputs from the sensory modules and the inputs to a cognitive system. It is here that phenomenal content is found” (Tye, 1995, p. 137) and if Swampman can have these representational states, then – for Tye – he is conscious. So Tye’s reason for attributing intentional states to Swampman can only be that he has the brain states, or a suitable brain to track features in the environment. Let us remember that according to representationalism, all that matters are tracking relations. Tye claims that:

...the states in his head certainly track various external environmental states, just as ours do... given that there are no distorting mirrors, no special peculiarities in his environment, his behavior is entirely appropriate to the states that are tracked... So it is natural to suppose that, for a being of his sort, without any evolutionary history to weigh, optimal conditions obtain and hence that there is sensory representation of those external states (Tye, 1995, p. 154-155)

But let’s now go further and say that Swampman is suffering a fever accompanied by hallucinations of a Unicorn. He has no previous concept of a Unicorn, so how will Swampman be able to track the features of the Unicorn and how can those features causally co-vary so as to let Swampman be in a brain state that realizes the phenomenal character of the experience of such a creature? There is of course no Unicorn present for his brain state to co-vary with. So for Tye’s externalist representationalism, it seems that in this case he ought to deny that Swampman is conscious of the unicorn; despite the fact that a normal subject that is physically identical to Swampman in this circumstance would have a conscious



hallucination. However, what Tye says about brain in vat scenarios suggests that he does not think this. Let us remember, Tye claims that the brain in a vat has basically “inaccurate perceptual experiences” because “brain states are not tracking in optimal conditions” (Tye, 2000, p. 64). However things do still ‘seem’ a certain way to the brain in a vat; thus, Tye does not deny that it is conscious. Rather he claims that a brain in vat fails to have “accurate experiences”, and things are not as they appear phenomenally in the brain (Tye, 2000, p. 64). So under this claim, the representational states do not have their ordinary contents. In other words, according to Tye, the brain states of a brain in a vat are not directly “tracking features” of the environment. (Tye, 2000, p. 64).

However, could it be the case that a brain in a vat, instead of representing the red surface of a tomato in a direct connection with the world, is actually representing a computer input. The brain can still represent the computer input as red, just as it could represent a tomato as red. So the same ‘what it is like’ aspects of phenomenal states could be realised by the brain in a normal person’s head (looking at a tomato) and a brain in a vat. This is because we know what the experience is like by introspection and by applying the phenomenal concept *red* (Tye, 1995, p.167); and the brain in a vat can do this too. So since Tye says it could be the same for us and the brain in a vat, the same phenomenal concept *red* must be applicable to my brain state (which realises a representation of the tomato as red) and the brain in a vat’s brain state (which realises a representation of the computer input as red, i.e. the brain state realises a representation state which represents the computer input as being red). But in that case, it seems that the part of the external world which the brain state is co-varying with (and hence representing) is irrelevant to the phenomenal quality of the experience. For in one

case it is co-varying with a tomato, and in the other, it is co-varying with a computer input. And the tomato and the computer are not physically alike.

This suggests that the reason Tye attributes consciousness to Swampman and the brain in a vat alike, is that they both have the appropriate brain states. And so since the same would be true of a hallucinating Swampman, it seems that he too must be conscious. But there is no externalist representationalist story that can possibly be told about the hallucinating Swampman: he has just suddenly appeared, in a certain brain state, and that brain state is not tracking anything in the external world. In that way all that seems to matter to Tye, when it comes down to it, is the brain state.

Tye might respond that in the case of the brain in a vat, the computer input would have to have the same effect on the brain as the tomato, and hence they are physically alike in a sense. This could allow him to assert the importance of external representation, after all the brain in a vat is conscious because it is representing the computer input, and has the same experience as a normal subject because the computer input has the same physical effect as the tomato. But what happens in the case of hallucination? Tye argues that “[in the case of hallucination] the phenomenal character of your visual experience is not a quality or cluster of qualities of your experience to which you have direct access” (Tye, 2000, p. 48) so a computer input, or hallucination, and the real tomato must necessarily have the same phenomenal content.

This does not fit easily with the transparency intuition, however, for how can it be that all you are aware of is the external object, when you can have exactly the same awareness of two entirely different external objects (the tomato and the computer input)? Tye would have to say that all you are aware of is the physical input to your visual system. But then in the case of the hallucinating Swampman,

there is no physical input to the visual system, or at least none that is relevant to the character of the hallucination. Suppose now that a swamp brain in a vat suddenly comes into existence, and suppose also that it is not at that moment receiving any input from the computer, but is nevertheless in a physically identical state to the brain of a normal subject having a hallucination. If representation mattered to Tye's account of consciousness (Tye, 1995, p. 153), then he would have to say that it is not conscious, since it is not representing anything. But since physical identity was enough to persuade him that Swampman and a normal brain in a vat are conscious, it is very hard to see why we should not say that the hallucinating swamp-brain also is. Thus, if the brain state realises a conscious experience, then it must do so whenever it exists. This suggests that the representational aspect of Michael Tye's theory is irrelevant. Only the brain state matters to the phenomenology; and the fact that we can apply a phenomenal concept to it in introspection. For example, if the computer inputs are at the level of the sensory outputs and inputs of a cognitive system, and this is where the phenomenal content is found (Tye, 1995, p. 137), then independently of where the representation comes from, the brain state will exist and then will realize a phenomenal character. Why? As I pointed out before, Tye's same theory has the answer: for if the decisive factor is the mediation between the sensory modules and the cognitive processes, what difference does it make whether the mediating item exists or not? But this has a deeper implication: consciousness would be in charge not only of determining the accuracy of representation but of giving sense and meaning to the representation itself. If a creature lacks consciousness, I claim, it will not be able to have accurate representations.

But, why should the phenomenal concept of red be applicable to that kind of brain state (and not another)? Tye claims that his representational account shows that

the explanatory gap problem is an illusion, but we have shown the representational element of his theory is irrelevant. Without an answer to the explanatory gap problem, this seems arbitrary; this is because all that matters to the phenomenal nature of the experience is the brain state, and so an explanation of how the brain states produces the phenomenal experience is required – in other words, the mechanism that produces the phenomenal experience. For that reason, the gap is not just a matter of phenomenal concepts, as Tye claims. On the contrary, Tye suggests that “the gap does concern the production of perspectively subjective states from non-perspectival ones” (Tye, 1995, p. 181). Only with an account of intentionality such as Tye’s, does the intentional content seem to make no difference to the phenomenology. In one case, the intentional content is the surface of an apple, and in the other, it is a computer input. But the only reason these representational states are phenomenally the same, is that these two contents determine the same brain state. So it is the brain state, rather than the intentional content, which determines the phenomenology. Therefore it seems that the representationalist theory does not succeed in explaining either the relation between phenomenal consciousness and intentionality, or the nature of the phenomenal character itself. The hard problem of consciousness remains a hard problem.

## 2.8 Concluding remarks

Only by starting with an account of consciousness can we determine intentional content and how accurate representation is. For when we know that we have a red experience, we can ask the question of what kind of things a red experience can represent. The answer might be either an apple or a computer input, if both have the same effect on your brain. Tye denies that phenomenal content is

narrow, but I have tried to show that his reaction to the Swampman and brain in a vat cases undermines this position, and that by developing these scenarios, we can see that phenomenal content must be narrow. For Swampman's brain states can realise entirely hallucinatory states – he could just start with that brain state; and given that he would be unable to distinguish between a real and an unreal object, it is hard to see how external representation can be relevant here. It cannot determine what he is conscious of. Rather, it seems that the character of his consciousness determines intentional content.

The only way to determine the accuracy of a representation seems to be to start with phenomenology, with consciousness rather than intentionality, since the phenomenal experience is what co-varies with brain states, and not the external objects with the brain states – the secondary qualities must be realized then by a brain state. Therefore tracking representationalism provides an incorrect theory of phenomenal character and an incorrect approach as to how to handle “secondary qualities”. These qualities are not then merely the properties of objects as Tye believes (Tye, 1995, p. 150). But do the brain states still represent something? Certainly brain states may still represent either external properties or computer inputs (except in the case of the hallucinating brain in a vat) but not in the sense described by representationalism. And if phenomenal experience co-varies only with a brain state, we cannot assume that the representational content will determine the phenomenal experience. But there is still a relation in my position between intentionality and phenomenal character.

We have shown that the same phenomenal aspects may be produced by a computer input or direct perception, but that it is not representation but rather the brain state that produces the phenomenal experience which is the crucial factor.

Now then, the representational theory sounds totally irrelevant, but in any new account, we still require a convincing account of the explanatory gap, and how consciousness may determine the nature of intentionality. How do phenomenal aspects of consciousness determine what is represented in the external world? Does my account represent some kind of setback in the explanation of phenomenal experience? Not really. Representationalism argues that phenomenal content is ultimately fixed by what goes on physically outside the head independently of what happens in the brain; by contrast, I shall argue that phenomenal content is metaphysically fixed by what is going on physically inside the brain, albeit typically with some relation with the external world.

We still need to fully account for intentionality in terms of phenomenal consciousness, but this chapter has advanced the argument in that it has shown that phenomenal experiences are not representational facts, nor can they be reduced to representational facts. Moreover, we have shown that phenomenal aspects of a computer input and a direct representation can be realized by the same brain state. What is now required is to find a way to present consciousness as the source of original intentionality. But before we do this, let us explore how consciousness can be explained in term of a relevant physical ontology. This task will be taken up as part of the next chapter, where I will develop the arguments to support a non-reductive materialist account of consciousness.

## Chapter 3

### Non Reductive Physicalism

“‘And that’, he argued, ‘means that somewhere in them is intelligence. It can’t be seated in a brain because dissection shows nothing like a brain –but that doesn’t prove there isn’t something that does a brain’s job”

(Wyndham, 1951/2008, p. 47)

#### 3.1 Introduction

In the previous chapter I pointed out the problems with a phenomenal explanation in terms of a representational view; this chapter will explain how consciousness can be understood in terms of a physicalist ontology. Such physical approaches reply to a dualist position that naturally arises as soon we try to explain consciousness. This chapter will explore such problems and the motivations to support physicalist ontology. It will be more explicative than critical; but it will establish the basis of a non-reductive view.

If the mind is the result of a previous physical history, what is this physical history and how can it be understood? In other words, what is the physical explanation of the mind in terms of the brain? The question can be answered in various ways, but let us focus on two approaches based on a physicalist position. Firstly, taking a reductive approach, it has been argued that by understanding the brain processes one would automatically understand what the mind is (Place, 1956, Smart, 1959). Secondly, taking a non-reductive physicalist approach, it has been argued that although the mind is dependent upon the properties of the brain, the mind cannot be reduced to those properties (Putnam, 1967, Davidson, 1970,

Fodor, 1974). Non-reductive physicalism has largely been developed in response to the problems faced by the reductive physicalism of Place (1956) and Smart (1959).

This chapter will be divided into four sections. The first one will explore the problems with dualism in the Cartesian version (1644) and in the version of P.F. Strawson (1959), property dualism. The second section will explore the replies, mostly the identity theory as proposed by Place (1956) and Smart (1959), alongside with the problems that such reductive accounts have. In the face of such problems, the third section will explore an alternative based on the works of Putnam (1967) and Fodor (1974) that are at the root of non-reductive physicalism. This section will also discuss the works of Smart in light of the positions offered by Lewis (1982) and Armstrong (1968). The fourth section will explore the implication of physicalism in the overall discussion of the consciousness hard problem. The position of Van Gulick (1989), a very optimistic position, will be explored and will be contrasted with the position of McGinn (1989), a very pessimistic position.



### 3.2 Descartes: Substance dualism.

When Hamlet took Yorick's skull in his hands, he somehow associated that skull<sup>22</sup> with Yorick's person. Likewise many people visit cemeteries and talk to the bodies of their entombed love ones; but to whom are they talking? Do they talk just to a body, to a mind or a soul? Does the mind still exist after the physical ceases to exist? One set of answers is explored by René Descartes; he suggests that mind and body have different characteristics<sup>23</sup>: a body is a "corporeal substance" with "extension"; and the mind is a "thinking substance", and its nature is "thought" (Descartes, 1985, p. 43). The concept of substance is crucial to Descartes' separation; he maintains that a "[substance] is a thing that exists in such a way that it does not depend on anything else for its existence" (Descartes, 1985, p.44), and as a result, he argued that since the mind does not have any of the essential attributes of the body, and the body does not have any of the essential attributes of the mind (Descartes, 1985, p.157), these are the attributes of distinct types of substance, each capable of independent existence.

But how did Descartes arrive at this view? Firstly, Descartes attempted to doubt everything. He speculated that everything might be an "illusion produced by a demon" (Descartes, 1985, p.15); but he initially reasoned that if that were the case he could not exist, because he has a physical body that is known to his thoughts. However Descartes believed that this 'thinking' process (from his own, first-person perspective) was so fundamental that he could be sure of his own existence only by the fact that he thinks. In his words: "I am, I exist, is necessarily true whenever it is put forward by me or conceived in my mind" (Descartes, 1985, p.17).

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<sup>22</sup>Hamlet, Act. 5, Scene 1

<sup>23</sup> The idea is not new in Descartes, Plato endorses a dualist position; likewise many religious beliefs subscribe to the separation of body and 'soul'

According to Descartes even if the physical could be conceived as an illusion, or if the physical ceased to exist, thought would still exist, and he concluded that “I am distinct from the body and can exist without it” (Descartes, 1985, p.54). Descartes argues that “the fact that I can clearly and distinctly understand one thing apart from another is enough to make me certain that the two things are distinct, since they are capable of being separated, at least by God” (Descartes, 1985, p.54). This is a conceivability argument, of a kind which remains influential in philosophy mind. In this case, the argument is that if something can be conceived (clearly and distinctly), then its existence is possible. Nonetheless, this line of argumentation is obviously problematic. If something can be conceived, it does not follow that it is physically possible. To determine physical possibility we may require empirical data. It may show that it is logically possible, but whether that is enough for metaphysical possibility is a point of controversy.<sup>24</sup> Descartes also relies on a divisibility argument. He argues that although “corporeal bodies” can be separated or cut, the same does not apply to thought (Descartes, 1985, p.59). In other words, Descartes maintains that “there is a great difference between the mind

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<sup>24</sup>I can conceive that the Cubs is the best baseball team ever, and based on this I could imagine the possibility that they won the Autumn Classic, and yet, from this conceivability it cannot be inferred that that will be the case. Thus, conceivability does not necessarily entail a real possibility. I cannot infer how things in the world are on basis of such an inference. In the case of Descartes, he assumes that due to the fact that I can conceive clearly and distinctly such and such scenario, I obtain a metaphysical possibility (i.e. mind and body are different). In recent times, David Chalmers makes use of such conceivability arguments to support his views about consciousness. However, this move is not without problems. As Tamar Szabo Gendler and John Hawthorne assert “In particular, each employs what is sometimes called a conceivability-possibility (or inconceivability-impossibility) move: from the fact that we are (or are not) able to depict to ourselves a scenario in which thus-and-such obtains, we take ourselves to have learned something about whether thus-and-such (or could not) obtain” (Tamar Szabo Gendler and John Hawthorne (eds.), 2004, p. 5). Conceivability-possibility arguments aim to say something about the world, about the actual world and about a possible world,. For instance, whether it is conceivable that a creature physically like us might lack consciousness? And, if so, what are the metaphysical implications? However, the form and use of such arguments is itself a subject of debate. Gendler and Hawthorne ask, “How, if at all, might conceivability-possibility reasoning be employed in particular cases to establish claims about the actual world?” (Tamar Szabo Gendler and John Hawthorne (eds.), 2004, p. 5). I will return to these problems when I explore the view of Chalmers about the nature of consciousness’ hard problem.

and the body, inasmuch as the body is by its very nature always divisible, while the mind is utterly indivisible” (Descartes, 1985, p. 59).

### 3.2.1 The problem of interaction between substances

According to Descartes this implies that the mind is a different substance than the body (Descartes, 1985, p.33). Unsurprisingly, one of the most controversial issues in the Cartesian view of mind and body is the question of how the two substances interact (strictly speaking, Descartes thinks the body is part of a larger physical substance, but this will not affect my point). In his book *The Passions of the Soul* Descartes returned to the problem; he suggests that there is a gland in the middle of the brain in charge of the interaction; he maintains that “from there [the pineal gland] it radiates through the rest of the body by means of the animal spirits” (Descartes, 1649 p.341). However, the pineal gland is itself physical; and, as Gassendi pointed out: “If it is a physical point, the difficulty still stands, since such a point does not wholly lack of parts. If is a mathematical point, then such a point, as you are aware, is purely imaginary” (Descartes, 1985, p.236). So, the question is, how can a physical part of the body be the seat of something non-physical? Indeed, how is it that this non-physical substance moves a physical body?

Descartes, by the use of efficient causes, developed new explanations of the movement of corporeal bodies. He suggested that the universe is a “clockwork mechanism” (Gerald Holton and Stephen G. Brush , 2001, p. 210). Thus, according to Descartes to keep the mechanism working (the body is itself a machine in Cartesian terms), from the beginning of the universe the “amount of motion” needs to be constant (Descartes, 1985, p.33). However, Descartes suggests that this amount of motion is “the product of its speed and its size” (Descartes, 1985, p.33), but the conception of speed used by Descartes is a scalar rather than a vector like velocity (as used today (Gerald Holton and Stephen G. Brush , 2001, p. 210). This allowed Descartes to advance an

explanation of how both substances interact. He suggests that "...the mind does not directly move the external limbs, but simply controls the animal spirits which flow from the heart via the brain into the muscles, and sets up certain motions in them..." (Descartes, 1985, p. 161). In other words, Descartes seems to suggest that the soul can change the direction of the body. However, such change in direction is one of the problems of interaction. As Dennett explains: "...any change in the trajectory of any physical entity is an acceleration requiring the expenditure of energy" (Dennett, 1991, p. 35); thus, by considering the momentum as the product of speed rather than velocity, the Cartesian explanation violates the laws of physics, for "...where is this energy to come from?" (Dennett, 1991, p.35). The energy to move a physical body cannot come from a non-physical substance, for what is required to move a physical body is always physical energy. For these reasons, it is generally now agreed that Descartes could not explain satisfactorily how the body can be affected by a non-physical substance.

### 3.3 Strawson and property dualism

In a football match there are many different actions that a player engages in, such as passing the ball to another member of the team, (losing the ball isn't obviously an action – not deliberate!), or scoring a goal. Descartes would say that the player is, essentially, a mind, but it is hard to say that there are 11 non-physical substances in a football team, playing a physical sport. Nonetheless, a football player must think first about what to do with the ball, and accordingly transfer the required energy from the legs to the ball to complete the move. How can we thus associate a mental state with a bodily state? According to Strawson when we talk about ourselves – or even others – we must understand the ordinary use of language (Strawson, 1991a, p.104), for instance: that the player is smart, fast, has a wonderful right leg, saw the goalkeeper out of his place etc. In this way, Strawson suggests that in principle we can describe and ascribe both “physical characteristics” and “states of consciousness” to others and ourselves (Strawson, 1991a, p.112). Strawson maintains that a ‘person’ necessarily has two properties, mental properties and physical properties, and properties must depend upon something. So “the concept of a mind or consciousness is dependent on the concept of a living person” (Strawson, 1991b, p.59).

Strawson argues that although, from ‘commonsense’ we may infer that all the objects have properties, shape, colour, etc., although not all objects have mental properties. We can apply both physical and mental properties to ourselves and others, but only if we define the concept of “person as primitive” (Strawson, 1991a, p108). In other words, the concept of person that Strawson has in mind is not a concept that can be analysed in terms of other concepts:

What I mean by a concept of person is the concept of a type of entity such that both predicates ascribing states of consciousness and predicates ascribing corporeal characteristics, a physical situation, etc., are equally applicable to a single individual of that single type (Strawson, 1991a, p. 108).

Contrary to Descartes, Strawson argues that it is not possible to conceive of a mind in isolation, because mental and the physical properties cannot exist separately – there is a dependency on each other. Likewise, according to Strawson “having red hair”, or “thinking I have a beautiful red hair” are properties of persons. You cannot separate the ‘redness’ of the hair, or the ‘thinking of redness’ and treat them in isolation because the two properties depends upon the concept of person. But how does Strawson conceive of the relation between these properties?

Strawson proposes that we can ascribe mental properties to another person or to ourselves in terms of behaviour (Strawson, 1991a, p.112). Moreover, Strawson maintains that “...we can see each other (and ourselves) as persons, if we think first of the fact that we act, and act on each other, and act in accordance with a common human nature” (Strawson, 1991a, p.113). Nonetheless, against Strawson, it is still not clear how mental and physical properties interact – how a mental property may cause the body to move. Strawson prefers a more common-sense explanation; according to Strawson “each history (of the mental and of the physical) have their own terms” (Strawson, 1985, p.46), and Strawson suggests that the mental or personal history can be accounted by what is “sometimes called, with apparently pejorative intent, ‘folk psychology’” (Strawson, 1985, p.46). However, Strawson does not explain how a mental state produces bodily

movements. Moreover he rejects the physicalist explanation proposed – for example – by the identity theory, in part because he considers it to be dogmatic: “What makes this remark [“from the exclusively physiobiological point of view”] metaphysically innocuous or noncommittal is the governing rubric, ‘from the exclusively physiobiological point of view’” (Strawson, 1985, p. 50), and in part because he is firmly convinced that a more common-sense view may be enough to explain what he calls “personal history” (Strawson, 1985, p. 51). However, by rejecting this physicalist framework, Strawson cannot explain how the mental and the physical interact, and his metaphysical explanation of a more common-sensical view does not allow for such an explanation. For these reasons, I have to disagree with Strawson. Some scientific information is necessary in order to know how the world is, and as I shall argue shortly, arguments like the completeness of physics indicate the physical history behind mental states. However, Strawson is uninterested in this history, for he remains committed to common-sense explanations and hence committed to a form of dualism: “the progress of philosophy, at least is dialectical: we return to old insights in new and, we hope, improved forms” (Strawson, 1991b, p.62). But he does not overcome the difficulties that obstructed Descartes.

Dualism is perhaps the most obvious solution to the mind-body problem. However, whether the mind (according to Descartes) is conceived as a substance, or (according to Strawson) as a property, the problem remains of how something that is not part of the physical world interacts with the physical world. As living beings we experience such interaction constantly. Our beliefs, decisions, and experiences cause the body to move, and when the body is damaged we may feel pain and look for some relief. With the separation of substances or properties



comes the problem of interaction, and this problem remains in any form of dualism. If the problem of interaction cannot be solved, this may suggest that something is not right with dualism, and that it is necessary to explore an alternative, physicalism.

### 3.4 The alternative: physicalism

What reasons do we have to believe that everything in the natural world is, in some sense, made from physical things? And what do we mean by physicalism? Let us answer the second question, and thus prepare the way to answer the first question. Papineau (1993) says that physicalism is “the thesis that all natural phenomena are, in a sense to be made precise, physical” (Papineau, 1993, p. 1). For instance, natural phenomena include chemical processes such as fruit oxidation or a physical process like the boiling point of water. Likewise biological processes are plausibly thought of as constituted by chemical and physical processes. Hence, it can be suggested that in principle all natural phenomena are best described in terms of physical processes, and this gives us our first idea of physicalism. However this definition is not satisfactory because it is too broad. It might not be right to say that all natural phenomena can be described in terms of physical processes. In the case of pain, for example, it can be said that there is a neural event that produces the experience of pain, but, is pain itself the same as a physical event or process in the brain? Or is pain an instantiated property that may depend upon other properties in the brain? The first half of this question was debated in the late 1950s by philosophers like Place (1956) and Smart (1959), and will be discussed in detail shortly.

### 3.4.1 The completeness of physics

As compared to dualism, physicalism is not an intuitively inviting position. Nonetheless, the completeness of physics may give us a strong reason to defend a physicalist picture of the natural world. The idea, known as ‘the completeness of physics’, is that “[a]ll physical effects are fully determined by law by prior physical occurrences” (Papineau, 2001, p. 8). This immediately seems to undermine Descartes’ account of interaction between substances (Papineau, 1993, p. 32). Thus, one of the consequences of the completeness of physics is that it does not leave “room” for dualist intuitions (Papineau, 2001, p. 8). In other words, Papineau suggests that “anything that has a physical effect must itself be physical” (Papineau, 2001, p. 8). For that reason, the completeness of physics may explain why dualism is just an intuition and why the mind is determined by the prior physical history of the brain. But, how can the mental be understood in terms of this physicalist framework? I shall not attempt to explain this yet; but, as was suggested before, it might be better to talk about physicalism in terms of properties. Here I agree with Stoljar: “... [physicalism] is the thesis that every instantiated property is either a physical property or else is necessitated by some instantiated physical property” (Stoljar, 2010, p. 39) This definition of physicalism might better explain the mental. Why? Because there are a lot of physical properties at the level of neurons, such as the nature of the cellular membrane, the properties of the synapsis, and all those properties which may generate the different brain states that finally allows the realization of a ‘mental event’. Accordingly, mental events may be better explained in terms of the brain’s properties.

Strawson is uninterested in this relationship, and Descartes fails to explain it properly. Admittedly Strawson claims that a mental property may depend upon a physical property, however even if we accept Strawson's view that he can account for a dependency between the mental and physical properties, the fact remains that there are two different properties of a person, and these two properties do not share the same ontology. However, according to the completeness of physics, the mind must be physical if it is to have physical effects, hence the mind must conform to physicalist ontology, or, as Papineau maintains, "the mental is ontologically inseparable from the physical" (Papineau, 1993, p. 23). This is an important implication of the completeness of physics: there is only one source of mental activity. In other words, against Descartes, mentality cannot exist without a physical base; and, against Strawson, the mental can only be explained in terms of its physical history. Nonetheless, the idea that the mind conforms to a physical ontology generates some problems. Some are inherent to a physicalist picture, others are objections from dualists. Let us now consider some of these problems.

### 3.4.2 The problem of epiphenomenalism

It is sometimes claimed that a physicalist picture of the mind entails an epiphenomenalist view; Thomas Huxley gives an introduction to this idea in his book, *On the Hypothesis that Animals are Automata* (2002):

It may be assumed, then, that molecular changes in the brain are the causes of all the states of consciousness of brutes. Is there any evidence that these states of consciousness, may, conversely, cause those molecular changes which give rise to muscular motion? I see no such evidence (Huxley, 2002, p. 24)

In other words, under this view, even if the mind is the result of brain activity, once the mind appears it is just inactive, with no effects on the physical universe whatsoever – our beliefs, desires, emotions, feelings or mood or experience do not have any effect on our bodies.

For several reasons this epiphenomenalist view seems implausible. Firstly, it might be claimed that it is a kind of dualist position; under this view, the mental and the physical are two different things (Jaworski, 2011, p. 8) and consequently this view tries to answer the problem of interaction in just one way: from the physical to the mental. Secondly, every day we experience beliefs and desires, and our body reacts to them: if there is some pain we may feel uncomfortable and then we may look for some medicine. Likewise, decision, beliefs and experiences all have effects on the body. Papineau suggests that “Every mental event causes some physical effects” (Papineau, 1993, p. 22), and there is also evidence that

meditation techniques affect the body (Lazar, S. W. et al. , 2005) – the fact that mental activity can cause physical events in the brain is further evidence that the mind has an effect upon the physical. Therefore epiphenomenalism seems implausible. An example of what could happen if epiphenomenalism were true is provided by the character Dr. Strangelove in Kubrick's film of the same name. Dr. Strangelove cannot control his hand, his body seems not to respond to his mind – it behaves randomly, without any mental control. The ephiphenomenalist view will only be raised again in order to clarify other issues.

Even though the completeness of physics provides strong support for physicalism, this does not necessarily mean that the mental can be reduced to the physical, as per the identity theorists' claim that mental properties are just physical properties. For instance, the idea of supervenience can give us an account in terms of relations of dependence, and could be of use as another argument to support a physicalist view. Davidson (2002) maintains that: "...mental characteristics are in some sense dependent, or supervenient, on physical characteristics" (p. 119). He makes the significant remark that "Dependence or supervenience of this kind does not entail reducibility" (Davidson, 2002, p.119). Many have thought that reduction is one of the key points that define physicalism. However, if the criterion for physicality is reducibility, how can it be that the mental, although physical, cannot be reduced to physics? If a mental event is identical with a brain event, then reduction could be a valid methodological approach. Place (1956) and Smart (1959), for instance, argue that conscious states are states of the brain. However, Putnam (1967), Davidson (1970) and Fodor (1974) present strong arguments against such a view. The next section will further discuss the problems of reductionism that encourage non-reductive physicalism.

### 3.5 The Reductive View: The Place-Smart Identity Theory

To say that the Mona Lisa is La Gioconda, it is enough to simply discover what 'the Mona Lisa' refers to and what 'La Gioconda' refers to, and then it will be found that they refer to the same famous painting by Leonardo da Vinci, located in the Louvre since 1797. Hence, for an identity to be established between two objects, events, properties or persons we must know what properties they have and whether they are the same. However, to determine this, it is essential to know more about the world. Not all identity statements can be grasped simply by analysing the concepts to which they refer. For instance, to know that water is  $H_2O$  what is required is some form of empirical research. After which, by knowing the intrinsic properties of water, and with clarification of the concepts that are commonly used to refer to water, such an identification can be made, but only a posteriori.

The completeness of physics is strongly suggestive of the physical nature of the mind, because if the prior history of physical properties and events in the brain is complete, there is simply no room for interaction to occur with anything non-physical. If it must be established that mental states are associated with brain states, a simple option to explore is to say that they are the same. Nonetheless, the claim that pain is a brain state is not obvious. It is not something that can be known a priori, but it might be argued that the concept of pain and the concept of a brain state have, as a matter of a posteriori fact, the same referent.

This identification is one of the starting points that allows Place (1956) and Smart (1959) to argue that the mind can be understood physically. Inspired by Place (1956) and Smart (1959) the kind of materialism that dominated philosophy of



mind in the 1960s aimed to explain in bare physical terms the 'putative' properties of the mind i.e. phenomenal experience. In other words, Smart and Place's physicalism expected to remove any trace of phenomenology, and by doing this, they defended the view that our experience of the world is given only in terms of "actual physical properties of the concrete physical objects" not in terms of "phenomenal properties" (Place, 1970, p. 50). Place and Smart were against using any "phenomenal-property" or any "indirect" account to explain our experience or perception of the world (Place, 1956, p.50). Of course this was a direct attack on theories of perception that advocated a kind of sense-data based explanation (Russell, 1912, Moore, 1953, and later Jackson, 1977) – theories that argue that we experience not the direct properties of the objects, but rather some kind of "mental images," "ideas," "impressions," "appearances," or "percepts" (Huemer, 2011). It is unsurprising that for the materialism that dominated philosophy of mind in the second part of the 20th Century this concept of "mental images" was unacceptable. It was argued that any materialist explanation of the mind should eliminate any 'questionable property' that cannot be satisfactorily explained in terms of contemporary science. It was expected that there would be an eventual scientific identification of consciousness with brain states (in identity terms). However, I will not argue in favour of any 'inner object'. Indeed, I will show, by the non-reductive physicalism approach, that the phenomenal character of experience is not an inner object.

According to Smart "there does seem to be, so far as science is concerned, nothing in the world but increasingly complex arrangements of physical constituents" (Smart, 1959, p.53). Place claims that "Consciousness is a process in the brain" (Place, 1956, p.42). This claim is to be understood as an empirical

scientific hypothesis. But, what are we to take “consciousness” to mean and what are we to take “process in the brain” to mean? Smart claimed that “experience and brain process” do not mean the same “only that they may refer to the same thing” (Smart, 1959, p.62). Consequently, Place and Smart ask how “experience” is to be understood, and then how it is related to a brain process. Place suggests that it is unnecessary to know about “brain processes” in order to talk about my “sensations” (Place, 1956, p.43). In other words, I can say that I am in pain without knowing anything about my brain processes. Smart draws an analogy with lightning: a person “can talk about lightning though he knows nothing of electricity” (Smart, 1959, p.58). This is simply because the concepts are different, with the ordinary, observational concept providing no insight into the scientific nature of lightning. However, lightning has been “described scientifically as an electrical discharge to the earth from a cloud of ionised water molecules” (Smart, 1959, p.57). In other words, an observable phenomena could be explained by empirical research, and then could be determined to refer to the same thing (lightning is electrical discharge). Smart argues that the intrinsic nature of what a sensation is need not be known in order to grasp the observed concept of that sensation, and that our reports of our experiences are, according to Smart “topic neutral” (Smart, 1959, p.60). The verbal report of our sensations could be the report of something physical or something non-physical. We do not need to know which in order to make such reports. What we do need to know is that when we report an experience, we are reporting something that happens in a given situation. That is to say, we know the extrinsic properties of sensations. According to Place: “we are saying that we are having the sort of experience which we normally have when, and which we have learned to describe as, looking at a green patch of light” (Place, 1956, p.50). In other words, both Place and Smart suggest that the

experience of a given sensation is something that happens or plays a specific role (for example, what happen when we see a red traffic light) rather than has 'phenomenal properties'. Place argues that "phenomenal properties" are "properties of external objects" (Place, 1956, p.50). Similarly, Smart suggests that "trees and wallpaper can be green, but not the experience of seeing or imagining a tree or wallpaper" (Smart, 1959, p.62). Thus, experiences in this physicalist account are understood according to their role: "something going on which is like what is going on when. . ." (Smart, 1959, p.60) Having defined the role of the experience, what is required is to determine what plays this role; for to know what plays this role is to know the intrinsic properties of what we are referring with that "something going on when..."; but a question to ask, is, how are such intrinsic properties to be determined? Only by empirical means.

Let us remember the case of water. Only by empirical research can it be determined that water is  $H_2O$ , but we already know the extrinsic properties of water; then science determines that there is one unique property that plays the role of water. Likewise, knowing what 'consciousness' is, in the terms proposed by Place and Smart, is a matter of empirical research to determine what plays the role of 'experience', and science will tell us what plays that role: a brain process. Thus, with this empirical information it can be said that an experience is identical with a brain process. In other words, by eliminating the phenomenal properties of experience and by considering the experience as "something that is going on when...", the path is cleared for Place and Smart: their theory implies that empirical research will show – for example – that C-Fibers firing, for instance, is the property that plays the role of pain. For that reason Place and Smart suggest that such

identity between sensations and a process in the brain is an empirical scientific hypothesis.

However, it remains open to debate as to whether all the main conceptions used within a scientific hypothesis can be defined without begging metaphysical questions. For Place, the Identity Theory is a straightforward scientific hypothesis. Smart suggested that we must in addition appeal to methodological considerations of “simplicity”; that which is in principle empirical provable should be chosen over other explanations (Smart, 1959, p.53). Nonetheless, the Identity Theory is obviously highly reductionist, and the resultant account of the mind depends heavily on the current vocabulary and methodologies of science.

### 3.6 The non-reductive view: Multiple realizability and Special Sciences

When I see my dog running around, I have no doubt that he has a lot of experiences: he reacts to strange people, if he experiences pain, he reacts in some ways that shows that something is not right. This leads us to a question: does a given mental state necessarily relate to the same brain state? Does a human, a dog, an octopus or alien, when in pain, have the same brain state? The identity theory proposed by Place and Smart claims that pain is identical to C-Fibers firing, but C-Fibers firing may not play the role of pain in other creatures if they have different brains. Putnam (1967) advanced a series of arguments in support of the view that mentality is multiple realizable and not reducible to a unique brain state. Fodor, echoing Putnam's view, argued in favour of the autonomy of special sciences (like psychology). According to Fodor, mentality is physical but cannot be described with "the taxonomies of physics" (Fodor, 1974, p. 134). Those views are the core of non-reductive physicalism.

#### 3.6.1 The Multiple realizability view

The idea that a mental state is identical with a brain state seems to impose too much restriction in the way that mentality may be understood in physical terms. The claim that pain is C-Fibers firing may be problematic even in members of the same species. For instance, there are people who may find pleasure in pain, other people may over-react to pain, etc., hence, the view that pain is identical with C-Fibers firing seems to be unlikely. Hilary Putnam (1967) was aware of the problems of the Identity Theory, and, inspired by the computational ideas of Alan Turing, proposed an alternative theory to explain the relationship between mind and the brain. To start with, Putnam believes that a Turing Machine can be used

as “model of an organism” (Putnam, 1967, p. 433). Putnam argues that mental states can be explained in terms of the computer states of a machine, and this machine can be “physically” implemented or “realized” in an “infinite number of ways” (Putnam, 1960, p. 371). In other words, rather than identifying mental states with brain states, Putnam identifies mental states with “machine states” in a more abstract way. Putnam suggests that what determines the behaviour of a given system is a set of instructions, and to know these instructions “does not involve knowing the physical realization...e.g. physical-chemical states of the brain” (Putnam, 1967, p. 433). According to Putnam, identification in the terms of the Identity Theory is impossible. From this it follows that sensations cannot be identified with processes of the brain. In this way, Putnam rejects the core of Smart’s and Place’s Identity Theory. He argues that “...pain is not a brain state, in the sense of a physical-chemical state of the brain (or even the whole nervous system), but another kind of state entirely” (Putnam, 1967, p. 433).

This needs to be understood in two ways: firstly, Putnam does not deny that there is an intimate relation of the mental with a physical base; what he denies is that to know the physical base or its properties is crucial to determining what a ‘mental states’ is. We can only infer that such states are physically realized by certain “physical and chemical properties” (Putnam, 1975, p. xiii), or other properties in other organisms. And secondly, if this concept of a state being “physically realized” in multiple ways is correct<sup>25</sup>, then consciousness or any mental event

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<sup>25</sup> Indeed, the multiple realisability thesis has been the cornerstone of functionalism and in some way of non-reductive physicalism. What are the main criticisms of multiple realization? As John Bickle claims:

Defending a claimed multiple realization involves two steps. Proponents must show (i) that the physical states (of the realizers) are type distinct, and (ii) that the functional properties are type identical. Challenges to claimed multiple realizations can attack either step and, most importantly, the step challenged can differ from case to case (Bickle, 2016).

cannot be restricted to a single brain state. In other words, different properties of different brains – or even the same brains – can realize the same mental events. According to Putnam: “...if we can find even one psychological predicate which can clearly be applied to both a mammal and an octopus (say 'hungry'), but whose physical-chemical 'correlate' is different in the two cases, the brain-state theory has collapsed” (Putnam, 1967, p. 437). This is the main idea of a non-reductive physicalism. We can infer that mental properties are multiply realized by physical and chemical properties – or other properties – but such mental properties cannot be identical and cannot be reduced to these physical properties. Putnam thus suggests that there is not any particular brain state (Putnam, 1967, p. 433) that plays the role of a particular sensation as the Identity Theory claims. He argues

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In other words, if we take the example of a crow's brain and a human brain's, there are differences in the realizer: the former has something called a nidopallium and the latter has a prefrontal cortex, and they are supposed to have the same function (i.e. executive decisions). This may support i) and ii), and thus support the idea of multiple realizability. However, an objector might argue that even if there are different brain architectures, we cannot assume that they have the same functional properties. This is a criticism of ii). As Bickle (2016) points out, in comparing the eye of an octopus and the eye of a primate, “[t]heir functions may be similar, but similarity isn't identity and multiple realization requires the latter” (Bickle, 2016). In other words, what it is required to support the multiple realizability thesis is to show that the functional state is always the same, even if the brain architecture is different, and this does not seem always to be the case. As Bickle points out, “[i]n actual scientific practice, discovered physical (neural) differences typically incline psychologists to seek out functional differences” (Bickle, 2016). In other words, what seems to be suggested by neuroscientific studies (Bechtel and Mundale, 1999) is that differences in brain states will lead to differences in psychological states. It is worth asking what arguments on scientific grounds do we have to hold the idea of multiple realizability? Science cannot deny that other creatures may feel pain, may dream and so on. However, empirical research must show not only the relation between a physical structure and its function; what it is required is the correct framework that avoids presupposing a reductive explanation of the mind, and this is the value of the multiple realizability thesis. I try to reconcile a functionalist view (non-reductive view) with an identity theory to attain a physicalist explanation of the mind. This is a promising path for science and philosophy to take, and this is why I took for granted the Putnam and Fodor thesis. Admittedly, the relation between a brain structure and its function is something that requires more empirical research. However, as Van Gulick (1988) points out, the simplicity of this multiple realizability view – as a form of non-reductive physicalism – is attractive and has a greater explicative power than other accounts. Therefore, even though there remain problems within a multiple realizability thesis, such claims do not undermine non-reductive physicalism. By contrast, if a functional property does not match a given physical structure, this may cast doubt on a reductive view. In summary, a non-reductive view and a multiple realizability thesis are the most viable options, if the task is to explain the nature of the mind.

that as multiply realizable, “a functional state is invariantly 'correlated' with pain, species-independently...” (Putnam, 1967, p.439)

The problem is that Putnam defines his position as part of a more abstract view of mental states. However he favours the view that mental states are physically realized by the physical properties of the brain, and by the completeness of physics it is not right to conceive mental states in terms of “abstract properties” (Putnam, 1975, p. xiii). They must be physical! This is a problem for Putnam, because if he assumes that mental states are physical states he needs to find a way to define those “functional states” as physical states; I shall return to this discussion shortly. Putnam’s debate about the nature of psychological predicates and its multiple realization has influenced another physicalist approach set forth by Fodor, in a discussion of special sciences.

### 3.6.2 Fodor and the autonomy of special sciences

The position of Place and Smart is not just the identification of a mental state with a brain state; the Identity Theory also suggests a methodological scientific approach that explains mental states: if I am in pain, the explanation of the introspective report of my pain must be done in terms of the correlated “brain process” (Place, 1956, p. 42). That is to say, my experience should be explained and reduced in terms of a given scientific vocabulary that will explain a set of physical properties. However, given the views of Putnam about multiple realization and the fact that pain might not be identical with C-fibers firing, could there be a physical law that would explain all pain? One might expect that psychology (a special science) would have laws derived from physics, “proper laws” in Fodor’s



words (Fodor, 1974, p. 126); and that those 'proper laws' would allow a reduction of the special sciences to physics, for, as Fodor suggests, "all true theories in the special sciences should reduce to physical theories in the long run" (Fodor, 1974, p. 126)

How would this work? A possible answer would involve bridge laws, laws that would create bridges between psychology and physics. According to Fodor, "[bridge laws] contain predicates of both the reduced and the reducing science" (Fodor, 1974, p. 126). Crucially, there is always a science to be the reduced, the 'subset', that ultimately is reducible to the other, to contemporary physics. However the idea that everything can be explained reductively by physics is, according to Fodor, not tenable:

if reductionism is true, then every natural kind is, or is co-extensive with, a physical natural kind. (Every natural kind is a physical natural kind if bridge laws express property identities, and every natural kind is co-extensive with a physical natural kind if bridge laws express event identities) (Fodor, 1974, p. 128)

In other words, Fodor, inspired by Putnam, argues that this view (reductionism) is misleading. "...there cannot be neurological natural kinds co-extensive with psychological natural kinds" (Fodor, 1974, p.130). That is to say, there cannot be such laws if one mental event is realized by a different kind of brain. In other words, if the mental cannot allow generalization and regularities in order to create a particular physical law, then a reductive explanation of special sciences (such as psychology) is not possible. Special sciences do not depend upon reductive generalizations because there are not one-to-one relations between "neurological"

properties and “psychological” properties (Fodor, 1974, p.130). Moreover, the latter are multiply realizable. Fodor concludes that:

The point of reduction is not primarily to find some natural kind predicate of physics co-extensive with each natural kind predicate of a reduced science. It is, rather, to explicate the physical mechanisms whereby events conform to the laws of the special sciences (Fodor, 1974, p. 131).

In other words, a special science cannot be reduced to the language of a unique science; there will be always a degree of autonomy, and sciences like psychology will always have their own set of theories and methodologies rather than waiting for the more fundamental truths of physics, as Place would have it. Thus, if psychology cannot be reduced to physics, it is not because psychology is not physical in an ontological sense, it is because the appropriate bridge laws will not allow a full explanation in physical terms. What Fodor rejects then, is a view of Special Sciences based on typephysicalism, “the doctrine, roughly, that every property mentioned in the laws of any science is a physical property” (Fodor, 1974, p.127). Nonetheless, according to Fodor everything is physical. He therefore advocates token physicalism, “the claim that all events the sciences talk about are physical events.” (Fodor, 1974, p.127) This is a core tenet of non-reductive physicalism. Furthermore, Fodor suggests, “..that any event which falls within the universe of discourse of a special science will also fall within the universe of a discourse of physics” (Fodor, 1974, p. 128). He also maintains that “it is not further required that the taxonomies which the special sciences employ must themselves reduce to the taxonomy of physics” (Fodor, 1974, p.134). Moreover, he argues that “the attempt to pair neurological structures with psychological functions is foredoomed” (Fodor, 1974, p.130). But this does not

mean that the special sciences cannot tell us about things about the world. It means that talk about my pain might help somebody to study my pain, but this does not necessarily entail the study of brain processes in terms of physics. Rather the pain can be studied through psychology because it can describe in more appropriate terms than physics what the mental state type is since it is an autonomous vocabulary and as such it is not required for it to be reducible, in detail, to physics.

Putnam and Fodor both give us arguments in support of non-reductive physicalism. Putnam claims that multiple realizability shows us that mental events can be realized by different brain states in different creatures at the same or different times; and Fodor give us an argument to show that mental events or psychological properties, even if they respond to a physical ontology, cannot be physically explained – the special sciences have their own taxonomies that are not part of the taxonomies of physics. With the support of Putnam and Fodor – among others – functionalism provides a robust philosophical justification of non-reductive physicalism.

### 3.7 Functionalism: reconciling an identity view with a multiple realization view

So far, the aim of the discussion has been to set up the path to understand the mind in physical terms, more particularly in a non-reductive way: it is via this path that I hope to explain intentionality in terms of consciousness. In Chapter 2 it was explained how phenomenal experience, rather than tracking the “representational properties” of external objects, tracks brain states. That is to say,, the realization of the experience will be given by the relevant brain state. However, the explanation of how consciousness depends upon brain states needs to be further clarified – in particular, with regard to the phenomenal character of experience. The reductionist view of Place and Smart did not provide an understanding of this phenomenal character. Indeed, they deliberately leave it out. They argue that the verbal reports of our experiences are neutral: “there is something going on when...” – that is, something that happens in a given situation and that we “learned to describe” (Place, 1956, p. 50). They try to identify what plays the roles of sensations, in the belief that by empirical means they will be identified with brain states. But this physicalist picture, which leaves out phenomenal properties, is of limited use for our purposes. Consciousness needs to be accommodated in such a way that the relevant relation is understood between phenomenal properties and the physical states of the brain. But how can this position be explored and defended? A very plausible way to understand the relation of consciousness and physical states of the brain could be through a functionalist view; however this functionalist view needs to be set up in terms of a physicalist framework.

#### **3.7.1 Putnam’s abstract functionalist view: the problem with physicalism**

Putnam (1967) proposed that mental states cannot be identical with brain states. Rather, he maintains that mental states are functional states. He suggests that, “[a]ccording to functionalism, the behaviour of, say, a computing machine is not explained by the physics and chemistry of the computing machine. It is explained by the Turing machine's program” (Putnam, 1974, p. xiii). That is to say, a mental state can be described in terms of states that play a function. Such states are related via inputs and outputs. In other words, Putnam suggests that mental states are determined by their function. For instance, Janet Levin maintains that, “what makes something a mental state of a particular type does not depend on its internal constitution, but rather on the way it functions, or the role it plays, in the system of which it is a part” (Levin, 2013). Putnam also maintains that the mental is not physical; it is just an “abstract property” (Putnam, 1975, p. xviii). He says that “I shall, in short, argue that pain is not a brain state” (Putnam, 1967, p. 433). This brings Putnam into conflict with physicalism. As he admits: “[i]n particular, the functional-state hypothesis is not incompatible with dualism!” (Putnam, 1967, p. 436)

Putnam’s view thus presents a problem for functionalism as a physicalist position. If functional states are realized by the physical-chemical properties of the brain, then by the completeness of the physics such states must be physical. However, that is precisely the inference that Putnam tries to avoid. A functional explanation of the mind in terms of brain states might allow for a form of identity theory. But if functional states must be realized by physical states how are we then to avoid the problems associated with the reduction of the identity theory? We can only conclude that the problem of consciousness cannot be successfully addressed in the terms of identity theory (as Smart and Place proposed) nor in terms of

Putnam's functionalism. Nonetheless, *if* a functionalist picture could be reconciled with physicalism, thereby explaining the relations of 'phenomenal properties' not just with physical states of the brain but with other mental properties, then functionalism might yet be a plausible physicalist option.

### 3.7.2 The Lewis-Armstrong causal role functionalism

Functionalism maintains that what defines a “mental state” is “the way it functions, or the role it plays, in the system of which it is a part” (Levin, 2013). It is not the ‘base’ that determines the function. Functionalism develops in part from Putnam’s views on multiple realization; that is what makes functionalism amenable with non-reductive physicalism. However, if the physical base it is not important, how are we able to determine the physical nature of functional states? This is the question that David Armstrong asks: “[h]ow is it possible that mental states should be physical states of the brain?” (Armstrong, 2002, p.82). Armstrong suggests that, “mental states” can be identified with “physical states of the brain” by defining what “mental concepts” are (Armstrong, 2002, p.82). In other words, he proposes a “[c]ausal analysis of mental concepts” (Armstrong, 2002, p. 82) as a departure point to determine what plays the role of a mental state. But how are these states to be understood? David Lewis suggests that it is “folk psychology that gives us the roles that characterize the mental states” (Schwarz, 2015, p. 504). In other words, we talk about a pain in the back, or the belief that Wynton Marsalis will play a show, or a fear of the dark, in ways that we normally do when we ascribe these experiences to other people. For example, if we saw somebody break his leg, we may understand what he means when he says that it hurts, and we are thereby able to understand his behaviour and his mental states. Consequently Lewis suggests that the role of such states can be explained by the folk psychology that “defines our mental vocabulary” (Schwarz, 2015, p. 504).

But how can folk psychology determine the role of mental states? According to Lewis, “psychology” may impose or at least can be used as a reference to “causal

explanations” (Schwarz, 2015, p. 504). In other words, Lewis and Armstrong do not argue that mental states can be directly identified with brain states. Rather, by defining mental states in terms of psychological “platitudes” (Lewis, 1972, p.92) or by folk psychology we understand firstly what plays the role of mental states. And all these platitudes can be analysed so as to explain how mental states are related and what plays their roles. According to Brandon-Mitchell:

...This definition can then be used to locate the physical items that play the role. The theory will then look like a long existentially quantified statement that says something like “There is one state, and another, and another . . . such that: X”, where X describes the casual relations that must obtain between things in order for them to count as the mental states in question’. Such a sentence is commonly called a Ramsey sentence, after Frank Ramsey. (Brandon-Mitchell, 2014, pp. 137-138)

In order to describe a mental state, this needs to be defined in terms of inputs, outputs and its relations of other mental states. Thus, if I see a palm peach on the table, then I have the belief that there is a palm peach on the table – this belief prompts me to take the palm peach and eat it with mayonnaise. So, by using folk psychology to define our common experiences, Lewis proposed the Ramsey analyses as a way to avoid explaining one mental state in terms of other mental states. By the use of existential quantifiers and the replacement of mental terms with variables, Lewis finds a way to determine what satisfies the given role: empirically it can be determined that what plays the relevant role of mental states is a brain state (Lewis, 1972, p. 88).



### 3.7.3 Identity theory as a functionalist view

A natural question is how this causal role functionalism can be generalized to other creatures and whether it can explain that different brain states in different creatures are able to give rise to mental states: how is this related to their functional roles. Lewis argues that, “[i]f the concept of pain is the concept of a state that occupies a certain causal role, then whatever state does occupy that role is pain” (Lewis, 1980, p. 230). So in normal humans the state of the role of pain may be identified with a given set of neurons firing, let us say C-Fibers firing; but, how about other creatures with different brains? A satisfactory answer to this question might make identity theory amenable with functionalism. According to Brandon-Mitchell:

In addition, the theory (functionalism) is one according to which mental states are multiply realizable. This last phrase is just more or less what Smart and others intended by ‘topic neutrality’. It is not part of the functional theory what kinds of entities play the causal roles specified. This is something that is to be investigated empirically and there is no a priori constraint on what these kinds of entities might be (Brandon-Mitchell, 2014, p. 138).

Smart later suggested that ultimately identity theory can be analysed as a functionalist theory (Smart, 2000); so the question of whether identity theory can be reconciled with functionalism and then defined as a physical account of the mental, could be established in terms of what realizes what. According to Putnam it is the psycho-chemical properties of the given brain that realize the functional states. On the other hand: “[f]or Lewis, Armstrong and Smart, the realizer is the mental state. The role just is the thing it does in virtue of which it gets to count as

a mental state” (Brandon-Mitchell, 2014, p. 139). Lewis (1980) posits the case of the man, the Martian and the madman. As compared to normal humans in pain, the madman has the same brain state with a different causal role, while the Martian has the same causal role with a different brain state. The solution that Lewis offers is to determine causal or functional roles for a population: “We may say that some state occupies a causal role for a population” (Lewis, 1980, p. 231). In other words, in particular humans, pain is identified with a particular brain state, whereas in a Martian it is associated with whatever physical state plays the role of pain. In this way, a functionalist account can explain, in principle, causal roles in terms of physical states. According to Lewis “[h]uman pain is the state that occupies the role of pain for humans. Martian pain is the state that occupies the same role for Martians” (Lewis, 1980, p. 231). In a more general way, Brandon-Michael puts forward a similar view: “in humans we might expect the causal roles to be played by neurobiological states, whereas when general Artificial Intelligence is developed, the roles in those entities might be played by something else: siliconaceous states of some sort.” (Brandon-Michael, 2014, p.138).

This guarantees a kind of multiple realizability in terms of the causal roles of a given population, whilst retaining a particular ‘physical realizer’, that allows for the identification of a functional state with a brain state; for instance, Lewis (1972) suggests that we could “infer that mental states M1, M2... are the neural states N1, N2...” (Lewis, 1972, p.91), but Lewis thinks that such causal roles may be “occupied by different neural (or other) states in different organisms” (Lewis, 1972, p.94). Here there is a clear advance from the views of Smart and Putnam. However, the views of Lewis-Armstrong suggest that functionalism can be defined as a physicalist position, avoiding the abstract views of Putnam or the strict

identity advocated by Place and Smart, because such functional states must be physical, but psychology as a special science has a degree of autonomy and cannot be explained with the “taxonomies” of physics (Fodor, 1974, p. 134).

### 3.7.4 Functionalism and the phenomenal character of experience

But how can the phenomenal character of experience be accommodated within this functional view? According to Lewis, “[w]hat is the phenomenal character of his state? If it feels to him like pain, then it is pain, whatever its causal role of physical nature. If not it isn’t. It’s that simple!” (Lewis, 1980, p. 233). In other words, Lewis suggests that a sensation and the feel of sensation are the same (Lewis, 1980, p. 233). He takes the view that the brain state realizes not just the causal role, but the experience. A further question is how such ‘phenomenal character’ is related to other mental states. According to Lewis: “the concept of pain or any other experience.... Of a state apt for being caused in certain ways by stimuli plus other mental states and apt for combining with certain other mental states of jointly cause certain behaviour” (Lewis, 1980, p.230). Where does this view leave the relation between consciousness and intentionality? I will not attempt to answer this question yet, but if folk psychology determines the role of the mental states, what exactly determines the content of such states, and how is the physical realization of such states to be understood? This will be explored in more detail as the thesis advances, but if it could be shown that functionalism is amenable with a position that may determine the intrinsic nature of the experience, and how this experience determines intentionality; if so, functionalism could be a path worth exploring. The idea would be to determine how the causal or functional role determines the way that intentionality is dependent upon consciousness.

The phenomenal character of experience in functionalism has been the source of many debates. For instance, Block argues that functionalism may assume “that systems that lack of mentality have mentality” (Block, 2007, p. 70). In other words, how can it be known that a robot or computer or other creature under a functionalist view is or is not full of mental activity? As a result of such puzzles, some have argued, with ‘absent qualia’ arguments, that qualia do not have a functional role. For instance, Block has proposed the “Chinese nation” thought experiment to support the view of the lack of phenomenal qualities in functional states (Block, 2007, pp. 70-73). The idea is that the entire population of China might be linked by radio devices and such a connection might emulate the neural connections of a normal human brain. Nonetheless, Block argues that the Chinese population would not show any phenomenal character.

But this argument may itself have some problems. For instance, if a system is equivalent functionally to a given creature, and since the “Chinese nation” is conceived as ‘functionally equivalent’ to that creature, then if functionalism is true, it is not the case that an exact duplicate may lack some features of the original. Block seems to beg the question. Robert Van Gulick suggests another line of argument against absent qualia in line with empirical research: “[t]he ultimate outcome of such theorizing remains an empirical question not open to an a priori answer” (Gulick, 1997, p. 441). In other words, this can only be answered as empirical research into consciousness progresses. However, it is at this stage of science impossible to say that empirical research is unlikely to bring about an explanation without remainder in purely reductive terms. Nevertheless, instead of a reductive methodology, a non-reductive framework that related multiple realization of mental states or causal roles could be the path to take. For, as

Chalmers maintains, “ it might be found that systems that duplicate our functional organization will be conscious even if they are made of silicon, constructed out of water-pipes, or instantiated in an entire population” (Chalmers, 1995, p. 327). So the argument of absent qualia can only be answered with empirical research and is not conclusive and cannot be a threat to functionalism or non-reductive physicalism.

Lewis and Armstrong believe that mental states can only be realised physically. According to Armstrong: “as I have asserted that we do have general scientific grounds to think that man is nothing but physical mechanism, we can go on to argue that the mental states are in fact nothing but physical states of the nervous central system” (Armstrong, 1980, p. 264). In contrast to Strawson (1985), who relies on a more common sense metaphysics to explain how mental properties can be understood (and to defend his dualist position), the functional views of Armstrong and Lewis are rooted in a scientific understanding of the mind and the belief that science will eventually fully reveal the nature of the mind. But, here we return to the question of whether it is possible to understand consciousness in terms of brain states, that is, in physical terms? The views of Armstrong-Lewis offer a plausible account to determine this, however, it is clear that science currently does not have the complete tools to fully understand consciousness, and this sometimes generates doubt as to whether consciousness can ever be finally explained. However, it seems to be clear that consciousness originates in the brain and its physical processes, and it is there that we must look to explain consciousness. But this claim is not without controversy.

### 3.8 The role of science in explaining consciousness

When I see my dog and my cat, I realize how differently they behave – I think the cat is somehow more mysterious – but do I know that they have inner states? Likewise, people have different behaviours. If they are at a football match they behave differently than in an art gallery. We suppose that they have different inner states, but how do we know this? There are different approaches to take to this question, but fundamentally the question is of how body and mind interact. We live in a physical world, and therefore to know something about the world requires some empirical work, in this sense, science has something to say, and it might be claimed that science could help to determine what mental states are. But how exactly can knowledge of the mind be a province of science? Smart (1959) and Place (1956) try to find a possible answer in physical terms, and Putnam (1967) in terms of functional and abstract properties. Some other approaches try to explain the mind in terms of properties outside the head (Tye, 1995), and yet other accounts are dualist.

So the question to be answered is where is the explanation of consciousness to be found? The evidence so far from neuroscience, biology, linguistic or evolutionary biology – among other empirical fields – suggests that consciousness is very intimately connected with the brain. However, science has not been able to show how consciousness comes into being, and if we rely on a reductive approach, the problem seems to be unsolvable, in other words, the idea is to explain the secondary qualities in terms of primary qualities. This has generated two contrasting views about whether or not consciousness can ever be fully

understood. This section analyses these two positions with the principal question of this thesis in mind: is consciousness the source of intentionality? Consciousness needs to be understood as part of the physical history of the brain, as part of the natural world, but to what extent we will be able to do so is debatable. On the one hand, Robert Van Gulick is optimistic about understanding consciousness in physical terms; he believes that empirical research may help to close the gap between the brain and the mental. On the other hand, Colin McGinn claims that the problem of consciousness escapes human understanding and that science – at least as currently conceived – will not reveal what consciousness is.



### 3.8.1 How consciousness became a problem that is hard to understand: Colin McGinn and our armadillo minds

It seems that even with the tools of science there is an 'apparent' lack of advance in our understanding of consciousness, and this has led to the idea that the problem is intractable. McGinn suggests that, "[t]he mystery persists. I think the time has come to admit candidly that we cannot resolve the mystery" (McGinn, 1989, p. 529). Nonetheless, he claims that "consciousness is a property of the brain" (McGinn, 1989/2002, p. 530) but he also suggests that we cannot know more than that. He famously asks, "how can technicolor phenomenology arise from soggy gray matter?" (McGinn, 1989/2002, p. 259). This seems to be the seminal question that every path of the discussion leads to. McGinn's own point of view is that we as humans are "cognitive closed" to ever understanding how consciousness can be physical (McGinn, 1989, p. 529). Can this view be justified? Let us firstly review McGinn's supporting arguments. In justifying "Cognitive Closure" (McGinn, 1989/2002, p.529), he asserts that "a mind M is cognitively closed with respect to a property P (or theory T) if and only if the concept-forming procedures at M's disposal cannot extend to a grasp of P (or an understanding of T)" (McGinn, 1989, p. 529). But what is it, this P property? Knowing this property, according to McGinn, is the path to understanding consciousness. However, McGinn does not think that we can know what this property is. Most of our knowledge of the world comes from the study of the objects that have "spatial properties" but since consciousness does not have "spatial properties" this places limitations upon its study. In McGinn's words:

... the senses are geared to representing a spatial world; they essentially present things in space with spatially defined properties. But it is precisely

such properties that seem inherently incapable of resolving the mind-body problem: we cannot link consciousness to the brain in virtue of spatial properties of the brain. There the brain is, an object of perception, laid out in space, containing spatially distributed processes; but consciousness defies explanation in such terms. (McGinn, 1989, p. 534)

In other words, the brain as a physical object has spatial properties, but consciousness does not, and this suggests to McGinn that no “physical study of the brain” can determine the nature of consciousness (McGinn, 1989, p. 535). In fact neither by “introspection” (by the direct access to our experiences), nor by “study of the brain for P” (McGinn, 1989, p. 532) will this be possible. McGinn suggests that the study of the brain will not help because, “the property of consciousness itself (or specific conscious states) is not an observable or perceptible property of the brain” (McGinn, 1989, p. 533). Therefore, consciousness will remain unknown to us, because there is a gap between “introspection” and “perception” and “we will never be able to find laws bridging the two domains” (Brooks, 2005, p. 413). However, when McGinn claims that P is unknowable, he is implicitly claiming to know something about P. McGinn could be right when he argues that “what is needed to be known by a monkey is not required to be known by a rat, or what it is required to be known by a human is not necessarily the same as what is required to be known by a monkey” (McGinn, 1989, p.530). Yet, this argument is not sufficient to show that a phenomenon like consciousness is cognitively closed to humans. As Dennett says, perhaps McGinn believes that other more intelligent creatures might be able to solve the problem: a “Martian” or inhabitants of the Andromeda Galaxy (Dennett, 1991, p. 10). Perhaps, but the important point, that seems to be denied by McGinn, is that it is impossible

to define a priori the future boundaries of our own future scientific knowledge. Thus, for example, the idea of how stars are formed or their composition was not known in the early nineteenth century, but now science has a framework to explain how stars like the sun may have been formed. The philosopher Auguste Comte claimed that, on principle we know that we will never have any scientific knowledge of the composition of the stars. In the words of Comte:

We see how we may determine their forms, their distances, their bulk, and their motions, but we can never know anything of their chemical or mineralogical structure, and, much less, that of organized beings living on their surface... we may in time ascertain the mean temperature of the heavenly bodies: but I regard this order of facts as for ever excluded from our recognition. (Comte, 1835, p. 116)

Clearly, Comte was wrong. This suggests that if we are cognitively closed to a given physical phenomenon it is not because our minds are unable to understand the world, but because the tools that we use – such as science – are limited to their current historical context. (Although in the case of “stellar chemical composition” the data to understand such composition was available almost a “century before Comte” (Hearnshaw, 2010, p. 90)). Scientific progress is in turn reliant on intelligence and ambition, but that does not imply that its scope can be limited a priori. That is one of the reasons that it is unfair to say that we are at the level of armadillos (McGinn’s famous example) or other creatures that are unable to grasp the 'subtleness' of the world, as McGinn thinks. As humans we can and do grasp the subtleness of the world. Hence our development of philosophy and science. We have also developed complex mathematical models, physical

explanations of the universe and models of DNA, but the study of the brain is relatively new, and science is still progressing. However, according to McGinn, even if the brain has a physical description, “we cannot link consciousness to the brain in virtue of spatial properties of the brain” (McGinn, 1989, p.534). In other words, McGinn suggests that even if everything has a prior physical history, this does not mean that we will be able to understand how the physical processes in the brain account for consciousness, because of the apparent lack of spatial properties for consciousness. In other words, a property P is supposed to be a property of the brain which explains its connection to consciousness. Perhaps McGinn is thinking in a dualist way, that is to say, consciousness is, according to McGinn, something we’re essentially introspectively aware of. And yet, McGinn thinks that what we’re introspectively aware of – consciousness – is physical, but given the distinctness of our perceptual and introspective conceptual capacities, we’re incapable of explaining the link. For that reason, McGinn is ultimately pessimistic. But only because of his dualist point of view. He believes that whatever empirical research is carried out consciousness will remain unknown to us. I disagree. In part because the outcome of this position is similar to the one defended by Tye (1995), when he claims that inside the head we will not find the phenomenal aspects of consciousness (Tye, 1995, p.163). If we cannot explain the link between the brain and consciousness, it is not because our minds will remain in principle forever closed to a given problem (this is the definition of ‘cognitive closure’), it is because the scientific tools that we use to approach the solution are still being developed. This is something that Dennett makes clear: “[i]n a backhanded way he (McGinn) has proven his case: armed only with the methods and concepts of traditional philosophy of mind, one cannot explain consciousness. But we’ve known that for a long time” (Dennett, 1991, p. 10). In

other words, that consciousness cannot yet be understood has nothing to do with the inherent limitations of the human mind.

### 3.8.2 Knowing what it is like: Van Gulick's optimistic point of view

From our common sense we may infer that any given creature with a brain suitable to interact with the world has a mental life, and therefore should have conscious experience. More precisely, according to Nagel, "...fundamentally an organism has conscious mental states if and only if there is something that it is like to be that organism, something it is like for the organism. We may call this the subjective character of experience" (Nagel, 1974, p. 219). He argues that this experience is difficult to understand from a physical point of view: "every subjective phenomenon is essentially connected with a single point of view, and it seems inevitable that an objective, physical theory will abandon that point of view" (Nagel, 1974, p. 220). This currently places a limitation on any physical explanation, because according to Nagel, any physicalist account of consciousness will require an adequate understanding of this "objective-subjective problem" (Nagel, 1974, p. 224-225). Nagel uses the example of a bat, as humans cannot get the genuine bat experience – from our minds the "resources are inadequate to the task" (Nagel, 1974, p.220). There is some common ground between Nagel and McGinn. Referring to McGinn's point of view, Van Gulick notes that, "we are all armadillos when it comes to understanding the link between the brain and phenomenal mentality" (Gulick, 2002, p. 563). However, science has advanced and everyday there are added new empirical facts to our understanding of the universe, including consciousness. It is worth emphasizing again, that by the completeness of physics, if consciousness depends on events in the brain, then, consciousness needs to be physical; and so a scientific explanation of it must be possible. A recent study at Western University by G. Buckingham finds that some blind people use echolocation "to interpret the echoes of self-generated

sounds to perceive the structure of objects in their environment” (Gavin Buckingham et al. , 2015, p. 237). I will return to this point in chapter 5. The study seems to suggest that some blind people, by emitting and detecting sounds, may have an accurate conscious experience of their surroundings. If so, it can be claimed that such ‘bat experience’ can be subjectively understood by using some features of the human brain that replace others parts that are physically damaged; this means that experience can be multiply realized by other brain areas if required. This is the kind of empirical research that expands our understanding of the physical aspects of consciousness.

But currently the question remains as to how neural activity and experience are linked. Admittedly pessimism persists, but this pessimism needs to be eradicated. Van Gulick (1993) suggest that empirical research can help us recognize consciousness from a physicalist point of view, knowing how the brain works, how the different brain structures interact and how the perception of colours, sounds, smells and so on are produced. All this will help us to grasp the phenomenal character of experience from a physicalist point of view. For instance, using the research on colour done by C.L. Harding (1988), Van Gulick suggests that “... the articulation of an organized structure among colour qualia provides the basis for establishing explanatory connections between them and their neural substrates, explaining higher-order-organization in terms of underlying structure” (Gulick, 2002, p. 564). In other words, studies of colour space<sup>26</sup> and the perception of

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<sup>26</sup> Dianna Rafman explains what could be understood as colour space:

“Models of colour space typically have a least these three desiderata (1) to isolate a set of fundamental magnitudes or dimensions (eg. hue, brightness and saturation, or ‘primary’ hues red, blue and yellow) in terms of which any humanly perceivable colour can be analysed and identified, (2) to assign to every colour a location in a geometrical space defined by those dimensions, and (3) to determine the physical stimulus values or ranges of values associated with each colour in the space and, thereby, to discover what relationships exist between physical stimulus properties and our perceptual responses to them” (Rafman, 2015, p. 681)

colour, and the organization of brain structures may suggest how the experience of colours can be explained, and it is unnecessary to leave out the 'phenomenal properties', as Smart and Place thought. Van Gulick argues that the functional aspects of colour perception can show the neural mechanism underlying colour experience: "the phenomenal colour space is revealed to have a complex organizational structure that allows us to establish explanatory rather than simply brute fact connections between it and underlying neural processes" (Van Gulick, 2002, p. 565). Likewise, Hans Flohr in the article "Sensations and brain process" suggests that "underlying physiological processes can be identified. It is assumed that neural assemblies instantiate mental representations" (Flohr, 1995, p. 157). I will not attempt to describe the technical details of such findings here, only to highlight them as examples of science advancing our understanding of the underlying physical mechanism that produces the relevant conscious experience. These empirical findings open up the prospect of an explanatory connection between mental phenomena and the way the brain realizes them. Some philosophers may not agree, and Tye suggests that "Properties like colour and shape are experienced by us as intrinsic properties of objects and surfaces. And, assuming that there is not some large-scale illusion, that is just what they are... colour is an objective, physical property of external things" (Tye, 2000, p. 167). This strategy works for Tye to explain the phenomenal character of experience from a physical perspective but located outside the head. However, the arguments of Chapter 2 and the views explored in this chapter suggest that the path to follow to explain such phenomenal character is not only in terms of external properties but in terms of the brain states. This is the internalistic view I favour. Hence, any advance at the empirical level to understand how the brain works and how experience is produced, will accommodate the nature of the perception of external



objects in terms of the physical intrinsic properties that realize such experiences. In this way the path to understand intentionality in terms of consciousness will be cleared. This is Van Gulick's basic point:

....the more one can articulate structure within the phenomenal realm, the greater the chances for physical explanations; without structure we have no place to attach our explanatory "hooks". There is indeed a residue that continues to escape explanations, but the more we can explain relationally about the phenomenal realm, the more the leftover residue shrinks toward zero, there is a long way from that. But we are not armadillos, and the comprehension of the phenomenal does not escape our cognitive abilities... (Gulick, 2002, p. 565)

However, although the whole picture of how the brain realizes phenomenal experience is still unclear, one thing needs to be emphasized: the mind and subjective experience must respond to a physical process. Non-reductive physicalism suggests that there is no reason why the correct interpretation of empirical data should not allow a full explanation of consciousness in physical terms, locating consciousness where it is: in the brain and realized by brain states.

In summary, it has been argued that functionalism can explain mental states in terms of physical states. Combining this view with the relevant empirical findings suggests a physicalist understanding of consciousness. Furthermore, as was pointed out before in Chapter 2, the phenomenal character of experience may be realized by a brain state. We are now in a position to discuss intentionality: how intentional content is related to internal experience, and how intentionality can be

explained in terms of consciousness. An understanding of intentionality is an essential part of any physicalist understanding of consciousness.

## Chapter 4

### The phenomenal character of intentionality

“Alice laughed. “There’s no use trying”, she said: “one can’t believe impossible things. I daresay you haven’t had much practice,” said the Queen. “When I was your age, I always did it for half-an-hour a day. Why, sometimes I’ve believed as many as six impossible things before breakfast.”

Lewis Carroll, *Alice in Wonderland*, “Through the looking-glass”, chapter 5, p 306,  
MacMillan, 2015

#### 4.1 Introduction

One of the main points of this research is to get a better picture of intentionality, and the role played by the phenomenal character of experience. However, attempts to understand intentionality or the phenomenal character of experience in isolation may not be successful. To develop a theory of intentionality it may be necessary to know how other aspects of mentality mediate in the formation of the intentional content. I am sympathetic to the view that it is the phenomenal character of experience that generates intentional content, and this is one of the key themes of this chapter. That is to say, I am sympathetic to an internalistic viewpoint, and this clearly contrasts with the representational-externalist theory of intentionality

## 4.2 The phenomenal connection to the world

It is my aim in this chapter to show how intentionality is determined by the phenomenal character of experience. To achieve this, I will start by arguing that phenomenal content is distinct from intentional content. I will first simply examine the nature of the experience. Then I will suggest a new way to connect experience and intentionality; this will be explained in detail starting in §4.2. One influential position on the relationship between intentionality and phenomenal character of experience is representationalism. Tye, for instance, suggests that “if optimal... conditions obtain, sensory states of the sort found in perception track the presence of certain external feature, they thereby represent those features” (Tye, 1995:105), and the “phenomenal content is the same as intentional content” (ibid.: 137). One of the aims of this approach is naturalize intentionality, and by doing so, to suggest a possible path to understanding consciousness physically. I will argue that this approach is mistaken. The representationalist view is right in the sense that there is a relation between experience and intentionality; but it is incorrect about the role played by the phenomenal character of the experience in this relationship.

I will argue in favour of an internalistic view. The first component of this view is:

- (1) Intentionality depends upon the phenomenal character of the experience, that in turn is realized by the relevant brain states

(1) is a point of divergence not only from the representationalist standpoint, but also, as I will argue shortly, from the ideas of Kriegel about intentionality (Kriegel, 2011). However, (1) needs to be understood in parts. Firstly, as was argued in previous chapters, phenomenal experience is realized by brain states, and it is this physical realization – analyzed through a non-reductive physicalism – that

may allow us to determine its nature. Secondly, by the extension of my earlier arguments, it will be suggested that phenomenal experience is not reliant on any external-representational facts. Thus, I will argue that the content of the phenomenal experience cannot be analyzed in terms of intentional content à la Tye (Tye, 1995, pp. 162-163). Rather, I will show that the content of experience is determined by the brain states that realize the experience, and such brain states may or may not be instantiated by the presence of an external stimulus. This means, also, contrary to representationalist views, that the phenomenal character of the experience must be located inside the head. At this point a critic might ask: what determines the content of the experience, and what are the objects of experience? I favour the view that we do not experience the objects directly, only via the phenomenal experience. That is to say, the phenomenal experience is produced by perceiving the objects in a certain way, and the awareness of the objects is a product of the awareness of the phenomenal experience – the former indirect, the latter direct. This is a form of indirect realism<sup>27</sup> or “representative theory of perception” (Maund, 2003, p. 6). And this is the path to clarify and refine (1). I will explore a possible set of objections to this view and I will try to reply accordingly. Such replies will help to build the view that intentionality depends upon consciousness.

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<sup>27</sup>This position of indirect realism is not new. It is found in the Buddhism tradition, for instance Moriyama suggests that “we perceive external objects indirectly through the mental forms (ākāra) that these objects throw into our minds, and this cognitive act is interpreted as self-awareness” (Moriyama, 2010, p. 262). In the western tradition, one of the advocates of indirect realism is John Locke; Locke defended the view that we do not perceive the world directly. According to Locke “Whatsoever the mind perceives in itself, or is the immediate object of perception, thought, or understanding, that I call idea; and the power to produce any idea in our mind, I call quality of the subject wherein that power is” (Locke, 1974, p. 24).

#### 4.2.1 The case of indirect realism

Let us suppose that you are in the supermarket doing your weekly shopping, and you look at a red tomato; let us also suppose that external conditions are optimal – no light problems, etc. – and you are not under the influence of drugs, or any other physiological abnormality. In this scenario, what are the relations between you and the object? Let me start with the case of vision, and then try to make a more general case. Neuroscience offers us a very attractive explanation of how vision works and of how images are formed in the retina and how the information is sent by the relevant structures in the retina to the brain (Purves et al. 2004, pp 229-282). It should be mentioned that the image in the retina appears inverted and it is by means of the relevant brain processes that we perceive the image in the apparent right position. In this respect, Bokkon et al. (2013) suggests that there is an “intrinsic biophysical virtual visual reality” (Bokkon et al., 2013, p. 4) This research strongly suggests that effectively what we perceive is the result of the neural process or brain states that generate not just “the visual perception and imagery” but also “pictures and scenes during REM dreams and visual hallucinations” (Bokkon et al. 2013, p. 4) and that what we perceive and what we are aware is generated by these neural processes. *This* is the phenomenal character of experience, in my view. Following this line of research, it can be suggested that such phenomenal aspects are necessarily instantiated by the brain state. In other words, it can be postulated that the perception that you have of the tomato in the supermarket is not directly, but rather indirectly produced by the physical properties of the tomato realized accordingly by a brain state. If you do the introspective observation, and if you use the relevant phenomenal concepts, it can be plausibly claimed that what you experience are the phenomenal properties

of the tomato. That is to say, the object of perception causes a brain state that realizes the phenomenal experience.

#### 4.2.2 The case of indirect realism: the representationalist objection

According to the representationalist view, in introspective observation, you will not find any relevant phenomenal property only the “observable physical surfaces” represented (Tye, 2000, p. 46). This view is founded on the argument that experience is transparent (ibid., p. 45), and has been championed by Harman (1990)<sup>28</sup>. According to Gold, “Harman defends an “intentional” theory of perception and this is a form of direct realism” (Gold, 2004, p. 133). Direct realism is the claim that “in perception we are directly confronted with the object itself” (Maund, 2003, p.8). Thus, according to the representationalist view, the red of the tomato – and colours in general – are “[o]bjective, physical features of objects and surfaces” (Tye, 1995, p.150). Hence, what we introspect – because of the transparency of the experience – are the properties of the object, rather than any “phenomenology” inside the head. Thus, according to representationalism, the intentional content is what plays the role of the phenomenal experience, by means of “tracking relations between brain states and the environmental states” (Kriegel, 2011, p.5). Consequently, it can be argued, that the representational view presents the phenomenal character of experience in physical terms (Tye, 1995, p. 163). Tye and other externalist-representationalists thus rethink the role of the phenomenal qualities of experience. However I would argue that this revision is mistaken, and is not a viable path to a naturalized intentionality or consciousness.

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<sup>28</sup>According to Harman, “the content of an experience” is the object itself (the physical object), not the “idea” of the object (Harman, 1990, p. 36).



The idea that effectively phenomenology is what the brain states track and thereby what they represent are only the features of the external objects is debatable. This is the case with blurry images<sup>29</sup>. I will use this example to determine that representationalism does not provide the best explanation of phenomenology. It relies on such examples to show that phenomenology could be an intrinsic property realized by the relevant brain states. Blurry images have been used before (Boghossian and Velleman, 1989, and Pace, 2007) to argue against representationalism, but I will explore a different tack. To start with, Bourget and Mendelovici point out that: “When you see blurry, you do not tend to think of your experience as presenting you with some blurry or fuzzy object. This makes it hard to see what intentional contents might characterize blurry vision” (David Bourget and Angela Mendelovici, 2014, p. 225). Let us take an example:

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<sup>29</sup> Let us imagine we are hallucinating a red apple. In this case it cannot be said that there is a real apple in front of us. In which case, from where does our mind get the content of this hallucination? My view is that any construction of the object is done by the internal processes of the brain. Hence, we are aware of the object only in an indirect way. We are aware of the phenomenal properties of the object, but in the case of a hallucinated apple, although the content of the phenomenal experience must be the same as the real one, the difference is that there is not any real apple in the external world. My claim is that both must have the same phenomenal content, if not, we could not possibly say that we are seeing an apple when there is no apple in front of us. Some theories of perception, in particular the adverbial theory of perception, claim that there is indeed a direct contact with the object and we perceive it in certain ways. Hence, according to this theory, if I am seeing something blue, but it is red, I cannot say that I am perceiving blue-ly and red-ly, which is to say that we see something red because our minds were prepared to see an external red object. So, in the case of the hallucinated red apple, according to Chisholm, “nothing is appearing” (Chisholm, 1957, p. 162) This is because it is not possible, according to adverbial theorists, to have an indirect perception (but only an adverbial modification). It follows, under this view, that external objects are the only ones that we can introspect. This assumption is problematic, because, under adverbialism, things just appear in certain ways through adverbial modification and then we could have a representation; however, as Uriah Kriegel points out, whereas “the criterion is formulated in the formal mode of speech... the phenomena themselves are certainly not linguistic” (Kriegel, 2014, p. 126). It is more plausible to claim that it is the relevant phenomenal properties that connect us with the object in question, whether it be a real apple or the hallucination of an apple.

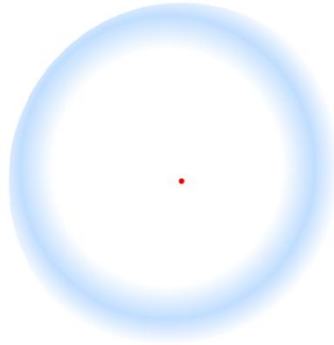


Figure 1 Troxler's Fading

(Susana Martinez-Conde, Stephen L. Macknik & David H. Hubel, 2004)

In fig. 1 if you look at the red spot you will notice how the blue circle suddenly disappears. Why is this? There are some explanations that relate the eyes' movement with visual perception, and try to show how, by the relationship between eye movements and the neural process, "the world became visible" to us (Susana Martinez-Conde, Stephen L. Macknik & David H. Hubel, 2004, pp. 238-238). Tye's answer is that "in these cases one simply loses information" (Tye, 2000, p. 80). But what exactly does Tye mean by this? Where is the lost information? Is it the object itself that has lost some of its properties or its information? Are our brain states unable to track all the features of the objects, or is Tye suggesting that this information is lost internally, in the head? Let us remember that Tye says that "phenomenology" is "outside the head" (Tye, 1995, p. 162). However, in the case of blurry images, in which Tye suggests that we lost information, the only possible answer to Tye is that this "information is lost" as a product of how brain states realize the phenomenology instantiated by the object. The phenomenology must be realized internally, hence, it can be claimed that the

phenomenal character is not the result of what the brain states represent – it does not vary in an unvarying relationship to the tracking of the environment.

Without an explanation of how phenomenology is internally realized Tye – and representationalism – simply cannot answer satisfactorily the problem posed by blurry images or even, more generally, how the phenomenology is realized. To explain this, Tye needs an account of the intrinsic nature of the phenomenal experience and needs to recognize that the experience does not constitutively – because it DOES depend causally - depend upon the intentional content, or external factors. In other words, Tye has to bite the bullet and admit a view that he explicitly rejects, namely that “the phenomenal content is ultimately metaphysically fixed by what goes on physically inside the brain...” (Tye, 1995, p. 155). It seems then that the best option is to embrace a non-reductive physicalism position which explains the metaphysics of phenomenology in terms of the realising brain state. Otherwise, any physicalist account is in danger of excluding the entire phenomenal experience, as reductive accounts explicitly do (e.g. Place, 1956, Smart, 1959, Dennett, 1991).

A further observation is relevant at this point; if the experience is not constitutively dependent upon objects of the world, how is it that the experience connects us with the external world? A critic might grant, for the sake of argument, that the experience is internal, but he might then ask, how is it connected to the external world? As I mentioned before (§4.1), the external world is part of the causal chain that causes the brain state, and this brain state realizes the experience. This does not necessarily require commitment to an inner object in the sense-data style. We are aware of the phenomenal experience and then indirectly of the external world (if there is any real object causing the relevant brain state – it might be a

hallucinatory experience or awareness of a merely apparent object, like a unicorn). Non-reductive physicalism need only claim that brain states realize the relevant phenomenal experience, and direct awareness of this experience is direct awareness of the brain states. It is a self-awareness these brain states have of themselves, albeit not of their microphysical properties, but rather of macrophysical properties which their microphysical properties realise. Moreover, there are empirical findings that generate some doubts about the idea of direct perception. For instance, John Smythies suggests that if some data is absent (some relevant external stimuli) of what the brain is supposed to see, the brain itself “fills the blanks with (hallucinatory) sensations” (Smythies, 2005, p. 18). This line of research strongly suggests that the experience is more the result of an internal process, a product of brain states. In other words, as Smythies and Ramachandran suggest: “The Representative Theory states that we do not see what actually is out there but what the brain computes is most probably out there” (J. R. Smythies and V. S. Ramachandran, 2008, p. 438), and that is what we are aware of and how we know the objects that we perceive. Understood in this way, experience can be thought to have a *femoral form*; like the femur that connects the pelvis to the knee. With the aid of the femur we walk, jump, run, and so on. Likewise, the phenomenal experience allows an interface between the brain states to the objects of perception, but it is by the femoral form of the phenomenal experience that we can interact with the external objects presented in perception, and grasp their apparent properties, like the red of the tomato, the taste of the coffee, the smell of the roses, and so on. This is what connects us with the world; and how we react or behave accordingly to the objects presented. This femoral form is at the basis of intentionality.

#### 4.2.4 The case of indirect realism: objection 3. Adverbialism: there are no intermediaries in the perception of objects.

In the previous discussion I defined the first part of my basic commitment: phenomenal experience is produced by the brain in perceiving objects in a certain way, the awareness of the objects is a product of the awareness of the phenomenal experience, and this experience is not the same as the intentional content. A critic might object that I will have to posit the existence of “questionable entities” in order to explain how we perceive and experience the objects. But I am not agreeing with the idea that there are mental images, or sense data; rather there are phenomenal properties that we are aware of in our perception of an object. And yet, even though phenomenal properties can be explained in terms of a non-reductive physicalist ontology, such properties are seen by some philosophers as highly problematic; some philosophers may think that these ‘entities’ lead to a scepticism. But this is irrelevant according to the view that I am defending – perhaps we are brains in vats, but since we have no positive reasons to think we are, this possibility can be dismissed.

For instance, Tye (2000) argues that only by “being aware of the external qualities we can be aware of what it is like” (Tye, 2000, p. 47). He suggests that the “phenomenal character itself is not the quality of your experience to which you have direct access” (Tye, 2000, p.47). In this way, Tye avoids commitment to ‘internal objects’ and then avoid problems with scepticism; but I argue that such worries are irrelevant in finding the most plausible picture of how experience works. It is a mistake to allow outdated, historical concerns about scepticism to influence our conception of mind. However, representationalism is not the only view that is sceptical about such intermediaries in experience.

The critic may propose a different way to “avoid intermediaries” in the perception of the object, an approach that suggests that we are not aware of the experience, rather there are only “ways of sensing and perceiving” (McGilvray, 2001, p. 258). In other words, under this position, there is not any ‘mental entity’ by which we see the objects of perception; this view was championed by Chisholm (1957). In his words:

[A]nd frequently the word “blue” is used to designate a kind or species of appearing; a thing which may, or may not, have the secondary quality blue is then to said to appear or to look blue. Many other adjectives are used, similiarly, to designate either a secondary quality, a microscopic structure, or a way of appearing, or of sensing (Chisholm, 1957, p. 127).

Chisholm suggests rather than generating a “mental image”, such qualities produce different ways of perceiving. This is the adverbialist view that there are no mental objects. In Chisholm’s words:

[O]f a man who has “spots before his eyes”, for example, we could say... that he senses “a spotty appearance”. But we need not add.... that the appearance is of anything; indeed, we could add in this instance that the appearance is not an appearance of anything. Or we can say... that the man sense[s] (is appeared to) “spottily” or “in a spotty manner”. But we need not add... that [what] he senses (is appeared to) “with respect to” any object. (Chisholm, 1957, p. 122)

According to Maund, since there are not “sensory qualities to serve as the “object of awareness” (Maund, 2003, p. 196), the adverbialist view will hold that there are

some physical features that appears 'red-ly' to you, if you are seeing a red tomato for example. Accordingly, Audi suggests that, "to perceive an object is for that object (in a certain way) to produce in one a sensory experience of it to cause one's experiencing it in a certain qualitative way" (Audi, 1998, p. 39). In this way, according to adverbialism, objects are seen directly; and this is what makes adverbialism compatible "with a direct realist view" (Audi, 1998, p. 39). I explore this objection because there has been an association between adverbialism and a theory of intentionality that has been proposed by Kriegel (Kriegel, 2011). However, I will argue that such view is not correct.

#### 4.2.5 The case of indirect realism: reply to objection 3. Adverbialism: there are not intermediaries in the perception of the objects. My response.

Firstly, let us explore the case of hallucination: in this instance, what kind of object causes the brain state whereby you are led to behave in a particular way? Let us suppose that you hallucinate a red tomato. That is to say, you experience the red colour, the round shape, and so on, but there is no tomato in front of you. How can the adverbialist explain this kind of experience? For certainly I have an experience of the object of the hallucination. I can see the colour, smell the odour and so on, but this should not be possible under the adverbialist view. The view that only by adverbial modifications via direct contact with the objects before us, which produce the relevant way of sensing and perceiving, seems to be undermined. For, without a relation act/object, the adverbial theory fails to account for how some experiences like the ones produced by hallucination or dreams are possible. Chisholm defends adverbialism as follows: "'S perceives X' means: x appears in some way to S" (Chisholm, 1957, p. 149), but in the case of

hallucination, Chisholm suggests that there is an “error or a type of deception” (Chilshom, 1957, p. 162). Nonetheless, in the case of these errors or deceptions, Chisholm asserts, that “nothing is appearing to him” because there is not a “proper stimulus” (Chisholm, 1957, p. 162). But what can be accounted as a ‘proper stimulus’? This kind of naïve physicalism was thought by Chisholm to be in line with the contemporary (1950s) scientific understanding of vision. According to Chisholm, ““S sees X” means that, as consequence of x being a proper visual stimulus of S, S senses in a way that is functionally dependent upon the stimulus energy produced in S by x” (Chisholm, 1957, p. 149)

It is clear that, in the adverbialist view, only with the proper stimulus of a direct object of perception is perception possible. According to Chisholm perception is via “hearing, smell, taste, and touch” (Chisholm, 1957, p. 149). However, this does not successfully account for hallucinations. Moreover, if nothing is present in the experience, then nothing is being perceived. As Audi suggests, “Hallucinatory experiences, on the adverbial view, are simply not cases of perceiving, at least not in a sense requiring that any object appears to one” (Audi, 1998, p. 41). Thus, hallucinations under adverbialism simply could not possibly be explained satisfactorily. Again, historical worries about scepticism prevent an accurate description of what we perceive.

Furthermore, adverbialism does not adequately explain even standard cases of perception; in other words, without any account of how phenomenology is internally realized by the brain states, neither adverbialism nor representationalism nor any account based on direct perception is completely satisfactory. There is a phenomenology, internally realized by brain states, caused in part by the objects of the physical world, or entirely by the brain in dreams or hallucinations. This experience is not a magical or a mysterious entity, but a result of brain states



working to produce our daily experiences. I will return to the discussion of adverbialism in the next section to discuss the possible objections to the view that I will defend, concerning how phenomenal experience is the source of all intentionality.

#### 4.2.6 Concluding remarks

I have tried to defend in this section the view that phenomenal experience is not constitutionally determined by a direct contact with the world; however, the object of the perception causes the relevant brain state that realizes phenomenal experience; and this is what we perceive. That is to say, we are indirectly aware of the objects of perception, but we are directly aware of the experience. At this point I have to reiterate that any worry about scepticism in my view is irrelevant. With baseless radical scepticism put aside, we can use empirical means to determine that the external objects are part of the causal chain that instantiate the relevant brain states; and the phenomenal form of the experience allows the interface between brain states with the 'objects' of perception, whether such objects are real or merely apparent. In both veridical and non-veridical cases, there is a phenomenology that is internally realized. This is what we are directly aware of. It has been shown that any explanation that does not take into account how brain states realize such a phenomenology cannot successfully account for the nature of the experience, and I will argue, cannot account for the nature of intentionality. This then leaves us with the problem of how to explain intentionality or the aboutness of the inner experience of the subject. In other words, if we perceive

the physical objects of the world indirectly, and if we are directly aware of the objects of the experience, how can such experience be about such physical and non-real objects? The answer is in part based on my idea of the phenomenal form of the experience, and how this is the source of intentionality. In the next section this will be explained. It will be explained in terms of what I call “the phenomenal structure of intentionality”, and how intentionality completes the link between the direct object of perception (the phenomenal experience) and the indirect object of perception (the physical objects).

#### 4.3 The phenomenal structure of intentionality

In the course of investigating explanations of phenomenal experience, it was found that some arguments offer a way to sever the phenomenal content from the representational content. Thus, the purpose of this section is to survey a new way to define the relation between the phenomenal character of the experience and intentionality. I will explore the idea that there is a role consciousness plays in intentionality that is fundamental, that is to say, that consciousness shapes intentionality. However, how intentionality depends upon consciousness is one point that some of the advocates of the ‘phenomenal intentionality’ program are relatively silent about. In particular, Kriegel (2011), the main advocate of this program, asserts that: “...whether the experiential is prior to intentionality or conversely...is something I wish to remain silent on” (Kriegel, 2011, p. 45). Even so, in my view there is something to say about it. Thus, I will take some steps away from the views of Kriegel on this subject. By explaining consciousness in terms of non-reductive physicalism, and in line with the view of intentionality that I

will advocate, I will argue that intentionality can be explained by the relevant phenomenal terms. However, it is also my view that both aspects are realized by a brain state. Thus a physicalist framework for intentionality is secure. However, I will argue, consciousness must be naturalized in any theory of intentionality. Thus, I am sympathetic to the view that the relation between consciousness and intentionality must be a central part of the so-called hard problem, as Tieson and Horgan have suggested (Horgan and Tienson, 2002, p. 530).

This scheme, according to my view, seems to capture the original spirit of what has been called the “phenomenal intentionality” program<sup>30</sup>(Kriegel, 2013, p. 1). However; from this “original spirit” I accept only some of its basic tenets. The views of intentionality that I will explore in this chapter are both destructive and constructive. They are destructive in that I will not explore intentionality in externalist representational terms; and they are constructive in that I will explore intentionality in terms of the phenomenal character of the experience. This will entail a new view of intentionality, and a new view on the hard problem of consciousness

#### 4.3.1 Intentionality: the original view

I start this part with a reminder of the original views of intentionality, and then will explain why a physicalist view of intentionality shows the most promise. As

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<sup>30</sup>As a research program, the views in the vicinity of the “phenomenal intentionality” cover many different positions, thus, it is not easy to find a common view other than the general idea of “consciousness first” (Pautz, 2013, p. 195). The other problem, it seems to me, is that the researchers use different words for similar or the same concepts. Kriegel, for example, prefers the term “experiential intentionality” to “phenomenal intentionality” (Kriegel, 2011, p. 45), because he thinks that “experiential” will offers less compromise with a phenomenal view. I will aim to use the current concepts in the clearest and simplest way possible. Thus I will aim to explain the core tenets of “phenomenal intentionality” via the “phenomenal structure of intentionality”. Nonetheless, I will also use the term “phenomenal intentionality” as required.

defined by Brentano (1874), intentionality<sup>31</sup> may be defined as "...reference to content, direction toward an object" (Brentano, 1995, p. 68), including objects that may or may not be real (Crane, 2009, p. 455). Whether real or unreal, the important point is that there must be an associated content; for instance, I can think about an apple; likewise, I can think about an object like a unicorn. But what is the nature of this idea of intentionality? In Brentano's view intentionality is a property of the mind: "[T]his intentional in-existence is characteristic exclusively of mental phenomena. No physical phenomenon exhibits anything like it" (Brentano, 1995, p. 68). It might be thought that the views of Brentano entail some of dualist intuition.<sup>32</sup> However, I will not attempt to discuss whether Brentano endorses a form of dualism or not, rather, the important point to discuss for our purposes is whether intentionality can be explained within a physicalist ontology. In my view any position of intentionality that entails a strict separation of the mental and the physical is a dead-end. However because externalist representationalism seems to me unsatisfactory as an approach to combining intentionality with physicalism, I will explore the alternative idea that intentionality, like consciousness, is realized

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<sup>31</sup>Brentano uses the words "intentional (or mental) inexistence of an object" (Brentano, 1995, p. 68). I will follow the advice of Tim Crane: "Let us understand the idea of intentionality as simply as possible – as being directed on something" (Crane, 1995, p. 32). As Dale Jacquette suggests, the most basic idea of intentionality in Brentano is that there is an "act of thought, and an intended object of thought" (Jacquette, 2004, p. 101), but the metaphysical nature of such objects is left unclear (Jacquette, 2004, p. 101). However, such objects seem to be part of, or belong to, a psychological state or psychological act, hence, according to Jacquette "objects of thought are actually contained within, as belonging to, the psychological acts by which they are intended. This is the so-called early immanence intentionality or intentional in-existence thesis In Brentano's Psychology"(Jacquette, 2004, p. 101). In other words the intentional-inexistence may refer to the way that the object (real or unreal) is presented in the relevant psychological act, and only via this psychological act is there an intentional-inexistence.

<sup>32</sup> For if, according to Brentano, intentionality is a criterion that defines what is mental and what is physical, then it could be suggested that such separation entails effectively some form of dualism. However, it cannot be said that Brentano and, for instance, Descartes have the same motivations to endorse a dualism. As Harney points out: "Descartes' "mental phenomena" are characterised relative to a theory of what is real - a metaphysical theory - and Brentano's "mental phenomena" are characterised relative to a description of the mode in which phenomena are given - a "descriptive psychology" (Harney, 1984, p. 20) This topic cannot be covered here in detail, but see Biagio G. Tasone(2012, p. 191-221), "Brentano's Dualism" in "From Psychology to Phenomenology, Franz Brentano's 'Psychology from an Empirical Standpoint' and Contemporary Philosophy of Mind"

by the relevant brain state – if a physicalist ontology, particularly via non-reductive physicalism, can be applied to consciousness, then this treatment of consciousness may also thereby be applied to intentionality. It seems to me that this is a more profitable and a more humble approach to intentionality, rather than positing the relevant content of intentionality – for example – in external objects, determined by tracking relations (as advocated by Tye).

#### 4.3.2 Intentional states: basically brain states.

Based on my earlier arguments (Chapter 3), it can be claimed that there is no property of the mind that cannot be physically realized by the relevant brain states. The basis of this conviction is, as Papineau suggests, that “anything that has a physical effect must itself be physical” (Papineau, 2001, p. 8). Thus, intentional states must be physical in the sense claimed in this research: all properties of the mind are realized by a brain state, and yet cannot be reduced to its physical-chemical properties; nonetheless they are causally efficacious.<sup>33</sup> For instance, given an intentional mental state like the belief that it is very warm in Costa Rica, I would not say that the content of such a belief is identical with the events in the brain. Rather what I am defending is the view that there are events in the brain that realize the intentional state. Furthermore, I will argue that the intentional state is shaped by the phenomenal character of the experience, as a result of a chain of circumstances that may or may not start with the presence of a given object, situation or event.

Let us say that if there is an object that impacts upon our sensory states, our brain states will react to that input. They will realize a phenomenology. More specifically, the belief that, for example, there are apples in the supermarket is a belief that is realized by the way the brain states – those that realize the relevant phenomenology – are related to the objects ‘supermarket’ and ‘apples’. In other words, as was claimed in the previous section (§4.1) we can assume that in the same way that the brain fills in the missing information of the events of the world

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<sup>33</sup>And as discussed in Chapter 3, such properties are causally efficient by virtue of their physical nature. Such properties can causally affect the body, so epiphenomenalism, as was discussed, is not a worry.

(Smythies, 2005), the brain will predict what can be found in the external world<sup>34</sup>, and this prediction in my view is a representation, that will be based on the phenomenal character of experience. Why? Well, because as I have claimed, if we are not in direct contact with the objects, but only the awareness of our experience, then, we can predict, via this awareness realized by the brain state that also realizes the intentional state, what objects are to be found in the external world. Hence we can represent the world via phenomenal aspects.

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<sup>34</sup>There are two scientific findings that help to support this view: "Expectation and Attention in Hierarchical Auditory Prediction" by Srivas Chennuet. al, (2013) and "Baseline brain activity fluctuations predict somatosensory perception in humans" by M. Boly et al. (2007) Both suggest that our brain makes predictions based on previous experience of what can be found or what can be expected in the world. For instance, Boly M et al. suggests that "...baseline brain-activity fluctuations may profoundly modify our conscious perception of the external world"(M. Boly et al., 2007, p. 12187)

#### 4.4 The Phenomenal structure of intentionality

Jocelyn Duffy from the Carnegie Mellon University explains in a press release (2016), based on a research done by Diego E. Pafundo et al.,<sup>35</sup> that with regard to the neural bases of visual illusions: “some of the information coming from the visual cortex is not a direct response to a visual stimuli, but is a response to how the stimuli was perceived by higher cortical areas” (Duffy, 2016). In other words, this research suggests that some of the ‘mental content’ realized by the brain states cannot be given by the ‘objective properties’ of the physical objects that exist in the external world. This finding provides good evidence for my previous claim (§4.2) about how we are aware of the objects of the world: by the phenomenal experience realized by the relevant brain state. But, how does this determine intentionality? The simple answer is that once the brain state has determined the phenomenology appropriate to experiencing an apple, for instance, then that phenomenology is intentionally directed upon an apple. If an apple affects the brain state appropriately, then we may say that the brain state represents the apple. If it does not – perhaps there is no apple – then we will not say this. But nevertheless the intentionality – the directedness – is a mental phenomenon. It is part of the experience, an experience realised by a brain state. Intentionality is not a matter of the relationship between the brain state and the apple (if there is one), but rather a feature of the mental phenomenon which may or may not indicate the relationship between the brain state and the apple. This relationship may be representational but intentionality is not representation, intentionality responds to a phenomenal structure. Brian Loar (2003) suggests an

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<sup>35</sup>“Top-Down-Mediated Facilitation in the Visual Cortex Is Gated by Subcortical Neuromodulation” by Diego E. Pafundo, Mark A. Nicholas, Ruilin Zhang, and Sandra J. Kuhlman in *Journal of Neuroscience*. Published online March 9 2016 doi:10.1523/JNEUROSCI.2909-15.2016.



interesting line of research which supports this. Loar, as previously suggested, gives the example of some “similar yellow lemons” presented to your visual field, but there are also some cables connected to your brain, and after the experiment, you are told that some lemons were not real just hallucinatory: “the hallucinatory lemons were product of the wires connected to your brain” (Loar, 2003, p. 239). Now, the point is, according to Loar, that in both experiences, the real lemon and the hallucinatory lemon, are presented visually in the same way. Both experiences generate the same phenomenal experience, for example, the phenomenal yellow is the same in the case of both the real lemon and the hallucinatory lemon, hence, there is no difference between the content generated or realized by the brain state of real lemons and the ones that are not real. But if what we are aware of is an internally realized phenomenology, then intentionality as explained in representational terms is incorrect, for the aboutness is determined by the phenomenal properties realized by the brain states. The preferable option is to explain intentionality in phenomenal terms. Loar, explicitly says that:

This presents itself as sameness in an intentional feature... This is a non-relational phenomenal feature, by which I mean something rather strong: we are aware of internally determined phenomenal features of visual experience, of their manifold felt aspects, and among those features -- though not separable in imagination -- is the directedness just mentioned.  
(Loar B. , 2003, p. 239)

It seems to me that Loar here offers a plausible view to determine the phenomenal basis of intentionality. The perception of the things through their phenomenal properties shapes intentional content. Loar suggests that intentionality is “a matter of how one’s perceptions and thoughts represent things if they succeed, rather

than of what is thereby represented” (Loar, 2003, p. 240). I agree: intentionality is not just a brute fact of representation. Rather, intentionality is the means by which the phenomenal character of experience primes us for the possibility of representation. Loar suggests that “An intentional ‘how a perception presents-things’ cannot easily be avoided” (Loar, 2003, p.241). This is a factor that is not taken into account by either the argument of transparency (Harman, 1990) or externalist representationalism (Tye, 1995, 2000, Dretske, 1998), or (Dennett, 1991, 2001).

#### 4.4.1 The role of phenomenal experience: the boundaries of representation

Kriegel (2002) argues that: “The experience represents only the way things appear to be ... It is only the content of beliefs that concern the way things really are” (Kriegel, 2002, p. 188).<sup>36</sup> However, in my view a belief – as an intentional state – is not enough to determine what really exists. That is to say, beliefs like any representational states require more to establish the boundaries of what we represent. I will argue that these boundaries are determined by phenomenal experience. Horgan and Tienson suggest something similar. They argue that the phenomenology sets up “ground presuppositions” (Terence Horgan and John Tienson, 2002, p. 528), and these “presuppositions” are satisfied if there is any object with properties that fulfil those presuppositions:

If there is an actual entity satisfying that presupposition... then one’s thoughts that are intentionally directed toward such a putative entity will refer to the actual entity in question; and so the properties of the satisfied will determine whether the beliefs about it are true or false, where hopes and desires about it are satisfied and so forth. Thus, wide truth conditions for those beliefs are determined by phenomenal intentionality plus the actual satisfiers of the relevant presuppositions (Horgan and Tieson, 2002, p. 528)

I agree with this position; my beliefs about the objects that I perceive will be determined by phenomenal properties. Such properties may determine whether or not the representation is accurate – remember the femoral form of the experience (§4.1.5). Such a form enables experience to connect us with the world, and such a

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<sup>36</sup>Though I disagree with Kriegel, his view may offer an important advance to understanding a possible relation between the experience and intentionality. Nonetheless, Kriegel seems to go too far in endorsing representational views: “Phenomenal character is thus a species of representational content” (Kriegel, 2002, p. 181).

form may define the boundaries of what we represent. However, this view needs to be explored further. A critic might dispute the idea that phenomenal experience shapes intentionality. For instance, an externalist representationalist argues that if optimal conditions are met, then the representational content is determined by the physical properties of the objects, and because such content carries information about the external physical objects, then, by tracking relations between brain states and the environment, the intentional content and therefore phenomenal content are explained. However, as has been argued, this is implausible.

As an alternative I will explore further the view that the aboutness is shaped by the phenomenal. For example, if you already have the experience of the object, that is to say, its qualities like taste, texture, colour, smell and so on, you can easily represent the object in the correct way. For instance, if you have the experience of an apple, you can represent correctly an apple and not misrepresent it as a pomegranate. If so, then your belief about apples, and hence the representation, will be accurate. But such representation begins in the mental directedness, or intentionality, by which experience tells us what we seem to be representing. In other words, the experience will help you to have the correct representation and this will in turn determine your behaviour. In this sense, phenomenal qualities cannot be divorced from subjective character as Kriegel suggests<sup>37</sup> (Kriegel, 2011, p. 86). Now, how can experience play such role? The

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<sup>37</sup>Again, as will be shown shortly, the views that Kriegel favours about consciousness are rooted in the so-called High Order Theories of Consciousness (Kriegel, 2011, p. 90). He suggests that there are two components in the experience: qualitative character and subjective character (Kriegel, 2011, p. 86). This division is not innocent in Kriegel. As will be explored, Kriegel tries to get the best of representationalism, since according to him, "when you look at the sky, the sky has both properties, it is both objective and phenomenally blue" (Kriegel, 2009, p. 181). What is the consequence? Well, Kriegel does not abandon representationalism, moreover, he favours the argument of transparency (Kriegel, 2009, p. 181). He thinks that the qualitative character presents only the properties of the external objects, but only because such qualitative properties will elicit the subjective properties, and this subjective character is what will determine the relevant internal content (or 'narrow' content, as Kriegel says). He argues that "the relevant kind of content features only phenomenal properties of external objects, that is, properties of eliciting a distinctive internal

brain states that realize the phenomenal experience will depend upon the particular history of cognition and evidence of an agent, and this history is determined by linguistic, cultural, social factors and so on. For that reason, if the experience shapes the intentional state, it is not right to suggest, as Kriegel does, that only the content of beliefs are what determines what things really are. Rather, what determines the accuracy of our representations is the phenomenal experience, given by, to borrow a term from Lewis<sup>38</sup> “a history of evidence” (Lewis, 1974, p.336). As Pautz suggests “evidence clearly necessarily depends somehow on his history of experiences and their phenomenal characters” (Pautz, 2013, p. 222). This evidence that is grounded in the phenomenal character and in a brain state, suggests to me a good path to determine the phenomenal nature of the intentionality. Let us explore an example to further clarify this issue.

Suppose that in your first time in Costa Rica, you are presented with a fruit named *Psidium Savorium*. You taste the fruit, and you experience the sweet and sour taste, the texture, the colour, the shape and so on. According to my earlier arguments (§4.1.2), what you experience is the object in an indirect way, and what you are directly aware of is the phenomenal properties, realized by the relevant brain state. However, until the moment that you are confronted with the fruit so

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reaction in the subject” (Kriegel, 2002, p. 186). Kriegel suggests that such subjective properties are internally realized by means of neural properties (Kriegel, 2002, p. 186-187), as the qualitative properties carry the relevant content. It is clear why Kriegel appeals to this metaphysics: he defends a direct realist view about perception (Kriegel, 2002, p. 187). But this way of accounting for the relevant features of experience is misleading, and is a form of disguised representationalism. I will return to this point shortly.

<sup>38</sup> Lewis explored a path to understand or to interpret the system of beliefs, desires, and so on of an agent, a view he termed ‘interpretivism’. I will not delve into this theory here but I would just like to mention that the evidence of an agent according to Lewis is determined by the physical facts about the agent. According to Pautz’s exposition: “At one point Lewis (1974:112) speaks of “Karl’s life history of evidence to [the physical facts about him]” suggesting that this evidence is simply part of the basic physical facts about Karl described in non-mental, non-intentional terms” (Pautz, 2013, p. 222) I agree with Pautz that what is required is to root that evidence in a “history of experiences and their phenomenal character” (Pautz, 2013, p. 22), and this is the idea of evidence that I want to use.

that your brain state can realize the correct or more accurate representation, you probably already have a representation based on the predictive skills of your brain. For instance, you may think that this fruit looks like an apricot, and you are expecting a taste something like that. But only with the phenomenal character of the experience do you get the correct representation. Now, let us suppose that later that day you went to a supermarket and you pick up a fruit that looks to you like a “*Psidium Savanorium*”. However, as soon as you taste it, you realize that there is a difference. You picked up another fruit called simply *Psidium*<sup>39</sup>. That is to say, you mistook the fruit for another one. However, as soon you taste it or in general terms you experience the object, your phenomenology comes into play to present the relevant phenomenal properties that will determine what the correct representation is. Your experience tells you that you have mistaken one thing for another. This is the role that experience plays in a theory of intentionality. Without experience misrepresentation would be a very commonplace state of affairs<sup>40</sup>. Once you are confronted with the object, the brain state realizes the phenomenology determined by the relevant information that is part of your history of cognition and evidence. Thus the relation between consciousness and intentionality is established.

Nonetheless, the externalist-representationalist will claim that the properties that I am claiming are “phenomenal properties” are objective properties, and hence the

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<sup>39</sup> These are the scientific names for “guizaro” and “guayaba” respectively. They are actually quite hard to find due to deforestation and climate change.

<sup>40</sup> Might a philosophical zombie, without consciousness, lack relevant representation too? It is my claim that that without experience, there is no intentionality, and that although a zombie’s brain might still accurately represent the fruit, this could not be for the same reasons that our brains can accurately represent it. A zombie’s brain could not be the same as ours, otherwise it would realise experience and so it would not be a zombie. This lack of representation, due to problems with the way that the brain states need to be to realize the phenomenal character of experience, in my view would partly explain some features of Alzheimer’s: representations are inaccurate -r experience is fragmented and not realized properly by the brain states. This suggests that without the boundaries that the phenomenal experience determines, there can be severe problems with representation.

phenomenal content is determined by the representational properties of the objects. However, according to my previous arguments (§4.1.2), this is incorrect. Representational accuracy in ordinary human beings is a product of experience. In this respect, I am in partial agreement with the views of Searle about intentionality, particularly with his idea of aspectual shape:

Whenever we perceive anything or think about anything, we always do so under some aspects and not others. These aspectual features are essential to the intentional state; they are part of what makes it the mental state that it is. Aspectual shape is most obvious in the case of conscious perceptions: think of seeing a car, for example. When you see a car, it is not simply a matter of an object being registered by your perceptual apparatus; rather, you actually have a conscious experience of the object from a certain point of view and with certain features. You see the car as having a certain shape, as having a certain color, etc. And what is true of conscious perceptions is true of intentional states generally. (Searle, 1992, p. 60)

What I agree with is that such phenomenal qualities – realized by the relevant brain states – is what will determine in turn this aspectual shape, and that they will constrain our representational capacity. However, there is another issue to discuss: what is the relevant content of intentional states? Such content in my view is determined by the whole character of the experience. Let us suppose that on your visit to Costa Rica, you want to explore the tropical rain forest on the Caribbean side. As you explore this place, you are confronted with different plants and animals – with different objects. Perhaps, you went there because you believe that you will find some sloths and you want to know if the sloths walk slowly. In this case, you are in an intentional mental state. The ‘content’ of your mental state is about sloths, and about a property like ‘walking slowly’. In other words, the

sloths in this case, are intentional objects that can produce a 'content' – realized by a brain state – that can be expressed in attitudes like belief, desires, hopes and so on<sup>41</sup>. Crane suggests that “every intentional state has an object” (Crane T. , 2009, p. 454). Hence, if there is an intentional object, there is content. This is the point that I want to discuss: how such objects are related to the content of the relevant mental states?

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<sup>41</sup> According to Searle “only some, not all, mental states and events have Intentionality. Beliefs, fears, hopes, and desires are Intentional; but there are forms of nervousness, elation, and undirected anxiety that are not Intentional” (Searle, 1980, p.5). There is here an intuitive division between intentional and non-intentional states. As Searle himself advocates an account of ‘direct realism’ about perception (Searle, 1983, p. 45) it would seem to follow, by Searle’s lights, that the object of anxiety cannot be identified with a concrete object, which motivates his view that it is not intentional. In my view, if there is an event that can instantiate such a condition, then there must be a ‘what it is like’ to be in that state, plus an aboutness. Here I am in agreement with Tye when he suggests that “feelings and experiences generally have intentional content” (Tye, 1995, p. 131). However I argue that such intentional states exist not in virtue of their ‘representational’ nature, but in virtue of their phenomenal character.



#### 4.5 The narrow content of the phenomenal intentional states

Let us take again the example of the Troxler circle (§4.1.3). It is highly plausible that people – in the same population, with a cognition shaped by linguistic, cultural and social factors – will have a brain structure that will react in the same way to a given stimulus. Hence, they will see the blue circle disappear. In other words, if particular conditions are met, it seems that there is a brain state shaped by a history of cognition and evidence that realizes the same phenomenal character of the experience in the presence of the same stimuli for the same population. In other words, it can be claimed that phenomenal properties supervene on neural properties. Hence, a promising approach, and in this I will follow Kriegel (Kriegel, 2002, p. 180), would be to appeal to the idea of local supervenience<sup>42</sup>(Chalmers, 1996, p. 33) to determine the intimate relation between the intrinsic physical properties of the brain and the relevant realization of the phenomenal-intentional states, and this may entail the relevant content in narrow terms that shapes intentionality; this is what I want to discuss now.

A critic might argue that external factors are what determine the relevant content of our mental states (external-representational). However, I would argue that this view is not right; the relevant content of our psychological states can be determined internally. I agree with Kriegel that what is important to determine is what kind of content is relevant to the behaviour in question: “[W]hen a mental content causes action; it is in virtue of its narrow content that it causes action. So narrow content is the psychologically important kind of content” (Kriegel, 2002, p.

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<sup>42</sup> The idea of local supervenience can be understood in Chalmers’ terms: “B-properties supervene locally on A-properties if the A-properties of an individual determine the B-properties of that individual” (Chalmers, 1996, p. 33). Thus, for instance, the phenomenal properties are realized in the same way by the physical properties of brain of subjects in the same population. As, in my view, the physical properties determine the phenomenal properties, I am sympathetic to local supervenience as an argument to determine narrow content.

194). In the case of the Troxler circle, what determines our behaviour? Is it determined by all the external information about the blue circle? Or just the red dot that we finally perceive alone? It seems to both Kriegel and myself that the relevant content is determined by the phenomenology that our brain states realize; that is to say, by a narrow content

In other words, the relevant content of our psychological states has a content realized internally that does not necessarily depend upon the external factors in the environment: “phenomenology is narrow, in the sense that does not depend constitutively on what’s outside the skin, or indeed, what it is outside the brain” (Horgan and Tieson, 2002, p.527). Because our phenomenology by its formal form connects us with the external world, it can be claimed that our behaviour will be determined by a content fixed by phenomenal properties. Thus, the relevant content of our mental states that determines our relations with the world is not the result of direct contact with the physical properties of the objects in the world, for, as was pointed out, if intentionality cannot be representationally determined, it is phenomenally determined.

Let us think again about the Troxler circle. You may believe that there is an outer blue circle; however, if this circle disappears your belief is false, because it is based on an incorrect predictive representation. On the other hand, if the representation of such structure seems to the one provided by your phenomenology, then your belief and the representation must be determined by such a phenomenology. Hence, it can be claimed that such a representation is fixed by the phenomenal properties. This implies that the phenomenal structure of intentionality that I have been defending is the source of all intentionality. More

strongly, it *is* intentionality, and representation is something we determine ex post facto on its basis.

#### 4.6 The phenomenal structure of intentionality: original intentionality

If intentionality has a phenomenal structure, as I have argued is the case, then this explanation provides the source of all intentionality. Indeed, because of the arguments that intentionality is phenomenal, such phenomenal properties are in my view the source of the relevant representation. However, a point to debate is whether the division between derived and original intentionality still has some sense in the views that I have defended, or rather, whether derived intentionality is a concept that can be understood in a more straightforward way. In my view, intentionality is the property realized by a brain state that generates such and such content – shaped by the phenomenal experience. This view can be criticized from different viewpoints but most of those viewpoints are anchored on externalist presuppositions. Perhaps this is to be expected. If the idea is to explain the mind in physical terms, then an obvious strategy is to put the content of our mental states outside the head as, externalist-representationalism does (Tye 1995, Dretske, 1995); or to be reductionist, like Dennett (Dennett, 1991).

However, the most obvious strategy is not necessarily the correct one. It seems to be the case that all our beliefs, desires, fears, hopes, emotions and so on, can be expressed by the use of language, or writing, or by an artistic expression. For instance, I can express my feelings in a poem, or I can draw a sketch of the sunset in Cahuita, or I can simply create a very abstract painting about love. Whatever my thoughts are about they can be put into the external world, but it is very intuitive to think that such expressions get their intentionality or aboutness

from my mind. This is the idea of derived intentionality; and can be traced back to Searle, who, from his work in the philosophy of language has suggested that “meaning is the derived intentionality of linguistic elements” (Searle, 1992, p. X). But what is the reason to split intentionality into these two components? Perhaps one reason is that this division suggests that intentionality is not exhausted by the mind, but it also provides a way to suggest that the ‘mind’ is not itself the source of intentionality (Denett, 1996).

However, in my view, to determine that something has derived intentionality it is not enough to say that it is because somebody put the content of their thought into books, maps, pictures or music, artefacts and so on. There is a meaning in such products only because we, as agents in a culture, determined by linguistic and social factors, are able to give a meaning to such artefacts; and by the relevant brain states that realize the aboutness of such artefacts, shaped by our phenomenal experience, we are able to finally conceive a more accurate representation according to our history of cognition. Again, this idea of derived intentionality is a very intuitive way to think about the phenomenon of intentionality. There is no doubt that I can utter my feelings, as others can do, and put them in the outside world. But only the agents that are in the same population or community may be able to understand what such attitudes are about. This understanding is limited in time and space, and is ultimately determined by the way that our experience is realized by our brain states.

For example, if somebody in Japan wants to describe to me what a cat sounds like, and he writes that sound on a piece of paper; according to him, a cat makes

a 'NyahNyha'<sup>43</sup> sound. From his point of view, based on his community, language, culture and so on, he is right. However, as I am Spanish native speaker from Latin America I will hear the same cat making a "miaumiau" sound, and yet, accordingly, based on the same sound, both of us make the representation of the same cat on the basis of our own evidence, determined by a phenomenology built on a history of cognition. However, if we each wrote down the apparent sound of a cat on a piece of paper it is doubtful that our representations would make any sense to each other. This point is illustrated by Horgan and Tieson (2002): "even if thinking did always involve auditory imagery, the auditory imagery would be intentionally loaded in the experience, not intentionally empty" (Horgan and Tieson, 2002, p. 523). In other words, even if the Japanese person and myself listen to the same sound<sup>44</sup> there is a representation determined by the 'what it is like' to hear that sound. Our phenomenology enters the scene again to determine and shape our representations. Therefore, even if our thoughts are expressed outside our minds, such representations will have meaning only in the way that the experience of another agent determines such representations. Thus, the so-called

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<sup>43</sup> The mimicry of the sound of animals or objects in the environment is known as onomatopoeia. There is indeed a linguistic underpinning, hence a neural explanation to onomatopoeia, as Asaneo et al (2011) suggest. They also suggest that onomatopoeias may play a role in the formation of words: "...the basic mimetic forces acting on word formation" (Asaneo et al. 2011, para. 36). However this kind of sound is embedded in our phonetic, language, experience, culture and so on, and does not necessarily represent the original sound. Such sounds are therefore indirect ways to represent the world, and are internally realized by the linguistic processes that shape some areas of our brain. Hence such sounds have a phenomenology realized by the brain states that respond to linguistic factors that shape our representations.

<sup>44</sup> Horgan and Tieson use an example given by Galen Strawson,: "He points out, for example, the phenomenological difference between hearing speech in language that one does not understand and hearing speech in a language that one does understand" (Horgan and Tieson, 2002, p. 523), As they suggest, we can listen to the same sounds:"the auditory experience is phenomenologically the same"(Horgan and Tieson, 2002, p. 523), and yet, in the introspective observation, as they suggest, "there is something phenomenologically very different about what it is like for each of them..." (Horgan and Tieson, 2002, p. 523). Our experiences of the sound of the cat are given by the same sound, nonetheless, there is a representation that is given by the 'what it is like', that in this example of the cat, is totally different in both cases, and yet may entail the same representation. This suggests something that was previously discussed: that what the state is about depends upon what the state is like.

derived intentionality is incorrect. There is only one intentionality, the one realized by brain states, and shaped by the experience.

In other words, only by understanding the context in which words are written or an artefact created, can a correct representation be made. That is to say, once our thoughts are put into the external world, and are like any other object, they can constitute representation, if and only if there is an agent to make a representation. Thus, the idea of derived intentionality seems to be an unnecessary complication to the ideas of intentionality. Furthermore, with the account of the experience and intentionality that I have defended, a physicalist framework is already secure. Hence, it is my view that derived intentionality is no more than a myth. Representation occurs by virtue of the phenomenal structure of intentionality. The process is that you think of some properties of, say, an apple, then you write or create something about the apple. If another agent reads those words or sees that artefact, that agent may or may not recreate your original thoughts. That will depend upon the history of cognition of that agent. At the end of the process, there is only an intrinsic intentional state shaped by a phenomenology. The eventual artefact is like any other object that can be experienced and which can represent an external state of affairs.

However, not all philosophers agree with this view. A clear example is Dennett; he argues that all intentionality is derived (Dennett, 1996, p. 53). Dennett's aim is to explain the mind physically, and crucial to this – for Dennett – is a physical account of intentionality. For this reason any separation between original and derived intentionality, according to Dennett, is an illusion. One of Dennett's strategies is to explain the brain in evolutionary terms, including how all the parts of the brain, from the small ones to the more complex ones, contribute to the

whole system. It is by this means that Dennett thinks intentionality might best be understood. According to Dennett: "Through the microscope of molecular biology, we get to witness the birth of agency" (Dennett, 1996, p. 20). He suggests that such small components may have a kind of intentionality, and that our 'intentionality' is derived from the sum of the intentionality of such small systems: "We are descended from robots, and composed of robots, and all the intentionality we enjoy is derived from the more fundamental intentionality of these billions of crude intentional systems" (Dennett, 1996, p. 55). This might be taken to imply that the search for intentionality must continue to ever smaller levels, but Dennett says that at bottom, the intentionality of such parts, and hence our intentionality, is derived from the intentions of Mother Nature (Denett, 1996, p. 53). In other words, it is derived from the 'intentions' of evolution. Hence, according to Dennett, the only intentionality is derived. In response to my position that the only intentionality is the one realized by brain states that are shaped by the phenomenal character of the experience, Dennett might ask: from where does the mind get such intentionality? The only answer, according to Dennett, is that such intrinsic intentionality may "possess derived intentionality, by virtue of the role they play in the activities of their creators" (Dennett, 2001, p. 52). According to Dennett, all intentionality must derive from something else. Thus representation "is internal... but it is still an artefact created by your brain and means what it does because of its particular position in the ongoing economy of your brain's internal activities and their role in governing your body's complex activities in the real, surrounding world" (Dennett, 2001, p. 52). However, the story, according to Dennett, does not end there, because the brain is part of another system, and the intentions of the brain are part of the intentions of its creator: "Mother Nature (otherwise known as the process of evolution by natural selection" (Dennett, 2001, p. 53). In other

words, Dennett suggests that our brains are physical artefacts (Dennett, 2001, p. 52), and as he accepts that artefacts may have derived intentionality, because of the intentions of their creator, so all our intentional states are derived, because we ourselves are artefacts created by nature that imposes its designs on us.

Of course, Dennett's views are rooted in a more eliminativist view of the mind. Thus, for example he is dismissive of qualia (Dennett, 1991), and he prefers to rely on more 'scientific evidence' to explain the nature of our brains, and hence what our 'minds' could be. Nonetheless, Dennett's view that the ultimate cause of our intentional states is imposed by the design of evolution seems to me to presuppose a goal or teleology in nature. One of the problems with Dennett's view is that if there is only derived intentionality, how is it that we could experience intentional states? How is it that I could be in a state of belief, desire and so on? Dennett makes use of the *intentional stance* strategy to answer these questions: "The intentional stance is the strategy of interpreting the behaviour of an entity (person, animal, artefact, whatever) by treating it as if it were a rational agent who governed its 'choice' of 'action' by a 'consideration' of its 'beliefs' and 'desires'" (Dennett, 1996, p. 27). In other words, Dennett suggests that we charitably assume that others have 'beliefs', 'desires' and so on. These attitudes are like conventions, but without a real existence. Such states come into being only in the way that we interpret them. On the basis of these interpretations we predict behaviour. For example, if I see somebody screaming and touching his head, I assume that he has a pain in the head, and then I can predict his behaviour: that he will run to the hospital to look for some relief, etc. So Dennett suggests that this strategy allows us to "predict and explain" the actions of others (Dennett, 2001, p. 27). However, what is that 'interpretation'? If it is a kind of belief, then it is a kind of



intentional state. It seems that it is required to be in intentional state to interpret another intentional state.

Dennett tries to explain the mind in the most reductionist way. He favours an externalist account of mental content, in which the mind is something trivial. However, it seems to me that there are problems with his arguments, both with the evolutionary argument and with the argument about the interpretative process. The latter is a move in support of reductive physicalism that does not succeed. The former is part of a strategy that seeks to eliminate what the mind is and the possible accounts of the mind given in folk psychology. There is another objection to the latter view. If I see a Martian, how do I know I could interpret his behaviour with any accuracy? I may not have any basis, any relevant history of cognition that would let me predict such behaviour, so the only way might be to look at the Martian brain states. That is to say, it is my view that there is a brain that realizes our intentional states. Therefore, a physical explanation of the sort that Dennett favours is a non-starter. We must look inside the head to determine the real nature of our phenomenal and intentional states, and with a non-reductive physicalism, there is an ontological framework that provides a plausible way to understand the mind in physical terms. It seems to me that we should not presume that from a given behaviour we will be able to interpret, predict and assign intentional states to an agent. Dennett assumes that, using evolutionary theory, we can. Thus, for Dennett, original intentionality as a concept, becomes insignificant as compared to the intentional stance and the ideas of derived intentionality. As the Martian example demonstrates, this is incorrect. The alternative for Dennett is to accept that indeed the brain is able to generate intentionality, but this also involves accepting that our brains are able to realize the phenomenal character of the

experience, and this is what Dennett wants to avoid – for this clashes with his reductive materialism; his eliminativism stems from his despair at the prospects for reducing consciousness. Dennett's views on intentionality and consciousness ultimately do not succeed.

I agree with Dennett that the brain is a physical artefact, but contrary to Dennett, such an artefact is responsible for our mental states. Our brain states realize such mental states, and, with an argument like the completeness of physics, the physical ontology to determine the nature of mental states can be accounted for. As previously mentioned, there is also a lot of research in neuroscience that may help to determine the physical nature of consciousness, and some of the same findings that determine the inner processes in turn offer a plausible account to explain how our phenomenology is realized by the processes of the brain. Thus, the indirect realist view of perception seems to be the right way to explain our perception and hence our phenomenology and intentional content. As our experience of the world seems not to be determined by direct contact with external objects, the phenomenal content can be severed from representational content. Intentionality can be explored and explained in terms of the only source of intentionality: our brain states. External stimuli determine neither consciousness nor intentionality; they are just a part of the causal chain that may produce the relevant processes in the brain.

#### 4.7 Kriegel and Experiential intentionality: representationalism strikes back

Since our aim is to find a more fundamental role for the phenomenal character of experience in intentionality, what is required is to find a theory of the phenomenal character and intentionality of the experience compatible with a naturalistic framework. One strategy is to explain consciousness in the relevant physical terms and thereby explain intentionality – this has been my strategy; or, try to naturalize intentionality and thereby deal with consciousness – this has been the strategy of externalist-representationalism. The first strategy has been termed the “phenomenal intentionality program” (Kriegel, 2011, 2013). Kriegel’s aim is try to define something called “experiential-intentionality” (Kriegel, 2011, p. 7) that can be understood as an original or intrinsic intentionality. He develops an impressive framework to determine the sources of intentionality (Kriegel, 2002, 2011, 2013). I will now argue that the strategy that Kriegel attempts to use to determine a possible view of intentionality in terms of the phenomenal character of the experience alternates between representationalism and a sort of internalistic account of the experience (Kriegel, 2009, p. 181). In my view Kriegel’s position is not enough to support a pure phenomenal intentionality; rather, Kriegel’s views are more amenable to what I term ‘impure phenomenal intentionality’ based on a representationalist view.

Though, I partially disagree with Kriegel, I agree with him on some crucial points, for instance, when he suggests that a “...state would not have the intentional content it has if it did not have the experiential character it has” (Kriegel, 2011, p. 43). At first sight the views of Kriegel can be considered an advance in our understanding of how consciousness and intentionality are related via experience. However, on closer inspection, it seems that Kriegel is actually closer to a representationalist view than he would like to admit. Let us first explore Kriegel’s understanding of the phenomenal character of the experience, and then we will explore the way that he connects consciousness with intentionality.

#### 4.7.1 Kriegel's view of the phenomenal character of the experience

Kriegel, in an early paper (Kriegel, 2002), tried to explain the nature of phenomenal content. According to Kriegel, the phenomenal character of the experience is still a kind of representational content. For instance, he claims that "Phenomenal character is thus a species of representational content" (Kriegel, 2002, p. 181). He tries to explain the nature of experience in the most naturalistic, and 'internalistic' way possible, thus, he tries to find an account that avoids any "putative" property related to the experience like "sense-data" (Kriegel, 2002, p. 190). Perhaps he was worried about the scepticism that apparently an indirect realist view about perception might entail. However, in general, Kriegel tries to keep the phenomenology inside the head, contrary to the standard representationalist views. The view that Kriegel favours to explain the phenomenal character of experience takes its departure point from Shoemaker.<sup>45</sup> In particular Shoemaker favours a view of experience in 'narrow terms', and this aspect is a cornerstone in Kriegel's views on experience. It may seem odd, that someone who wants to develop a phenomenal intentionality theory makes use of a representationalist like Shoemaker. However, in some respects the ideas of Shoemaker are attractive, particularly the idea of experience in narrow terms.

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<sup>45</sup>Shoemaker, like Tye, suggests that the phenomenal character of the experience is representational content: "A more substantive view I hold about phenomenal character is that a perceptual state's having a certain phenomenal character is a matter of its having a certain sort of representational content" (Shoemaker, 2002, p. 457). However Shoemaker diverges from the "classic representationalism" in the central role that he assigns to qualia. This role is more internalistic, because according to Shoemaker, "in addition to representing objective properties, our experiences represent phenomenal properties..." (Shoemaker, 2002, p. 469); so he suggests that "[m]y view is internalistic rather than externalistic. And it is compatible with this that qualia, although internally determined, are essentially representative of such properties" (Shoemaker, 2002, p.469). This is what makes the view appealing to Kriegel. In other words, Shoemaker reintroduces qualia as a property that is internal but determined at bottom by a representational content. However, he allocates to experience a more abstract functional role (Shoemaker, 1991, pp. 402-403). Here Kriegel disagrees. Kriegel's view is that the internal realization of the experience, in Shoemaker's terms, must depend upon the neural properties of the brain (Kriegel, 2009, p. 186).

Kriegel, in his theory of intentionality, wants to keep the best of both worlds (Kriegel, 2011, p. 69): an internalistic view of the experience – determined by some neurophysiological properties – and representationalism about intentionality.

But what exactly is the line that Kriegel follows? Based on his internalistic-representationalist view, Kriegel splits the phenomenal character into two components, a qualitative character and a subjective character (Kriegel, 2002, p. 185; Kriegel, 2011, p. 86). Let me explain this. Firstly, according to Kriegel, the object itself has the two properties: “when you look at the sky, the sky has both properties, it is both objective and phenomenally blue” (Kriegel, 2009, p. 181). Secondly, Kriegel does not abandon representationalism, nor the argument of transparency (Kriegel, 2009, p. 181). According to Kriegel, it is by introspection, and by transparency, that I determine the physical properties and phenomenal properties. By suggesting that the object has both properties,<sup>46</sup> Kriegel apparently believes that he can have a physicalist picture of experience, and by the separation of the ‘qualitative character’ – determined by the representational content and the ‘subjective character’ (neurally realized) – he believes he will have an internalistic account of the experience. According to Kriegel, the latter ‘subjective’ part is what determines “qualia” (Kriegel, 2002, p. 185).

I shall first argue against this view of Kriegel’s, and then consider the nature of “phenomenal intentionality” that he has in mind. Firstly, the view that Kriegel used to construct the idea of the phenomenal, ‘qualitative character’ of the experience is quite odd. If, ultimately, the phenomenal properties are in the objects, and exist

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<sup>46</sup>Kriegel makes the distinction between both properties: “objective blue is the property of being blue, whereas phenomenal blue is the property of looking blue, or seeming blue, or appearing blue. The property of being blue is an objective, mind-independent property of the sky” (Kriegel, 2002, p. 181). Regarding the property of looking blue, Kriegel insists that this property belongs to the object, but it comes into being: “iff it brings about certain internal reactions in a (subject) x” (Kriegel, 2002, p. 181)

only if there is a subject that experiences the object<sup>47</sup>, then how the phenomenal properties of the object come into being is not clear. What kind of metaphysics does Kriegel endorse? On one hand he is sympathetic to some kind of “material realization” (Kriegel, 2002, p. 186) that does not necessarily favour, according to Kriegel, a multiple realization view. But how this realization is achieved is not made clear. Kriegel also suggests that he is committed to a direct realism about perception<sup>48</sup> (Kriegel, 2002, p. 189), so, his internalist account makes sense only because the qualitative properties produce a neurophysiological realization of the subjective properties. However, ultimately, according to Kriegel, the experience is the result of a direct contact with the object. As such, Kriegel is vulnerable to criticisms of representationalism, and the direct realists’ views. Even though he ultimately locates subjective experience in terms of neural realization, this realization is only made possible by some external properties (Kriegel, 2002, p. 186). However, Kriegel did not delve into the kind of relations that such a neural account might suggest. If it is reductive, then he would have to explain how the subjective experience is not reducible to such neural properties; but if he invokes a non-reductive account it is not necessary to ascribe such phenomenal properties to external objects. Kriegel’s views about experience are in my view a kind of “inverse representationalism”. In other words, what ultimately plays the role of the experience are the properties of the external objects. However, by separating the qualitative from the subjective character, Kriegel thinks that he advances our understanding of how experience works, how it could be internally realized, and how intentionality should be understood. As I will shortly argue, by keeping the

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<sup>47</sup>Kriegel asserts that the property “of looking blue”, is a “mind-dependant property”; “it cannot be instantiated in the absence of an individual mind” (Kriegel, 2009, p. 182).

<sup>48</sup> Moreover, Kriegel seems to favour an adverbialist explanation as well, but I will not pursue this view, given my earlier criticism of adverbial theories of perception

relevant properties outside the head, Kriegel uses tracking relations to explain how an experiential intentionality property tracks the relevant external properties. However, the overall views of Kriegel seem to me incorrect. At the root of the whole system there is a representational base. Hence, the phenomenal experience that Kriegel has in mind is ultimately a property of the external object – as representationalism claims – whose subjective character is internally realized. Thus, the narrow content Kriegel thinks is something like a “representational trick” to explain just the “subjective” part of the experience, but with a content that depends ultimately on the external object. As such, it seems to me, Kriegel does not present a persuasive explanation of the nature of the phenomenal experience. His account fails due to the problems for externalist-representationalism which I outlined earlier. His account of intentionality anchored in experience is unsatisfactory.

Kriegel would reply that the only way to determine how experience works is by securing an internalistic view of the experience, by avoiding putative properties like sense-data, and by associating phenomenal properties and representational properties with external objects. He would argue that this keeps the best of representationalism and an internal view of the experience. However, as I have already argued, his “internalist-representationalism” may not in fact work as a base from which to explain that intentionality depends upon consciousness. Hallucinations, dreams and the experiences of brains-in-vats will be just as inexplicable for him as for regular externalist-representationalists.

#### 4.7.2 Kriegel's intentionality: the phenomenal representational tracking approach.

Kriegel's approach to phenomenal experience splits the experience into two components (Kriegel, 2002, Kriegel, 2011). According to Kriegel, this suggests that what is central to the problem of the experience is the "subjective character" rather than the "qualitative character" (Kriegel, 2011, p. 86). This is crucial to his theory of experience as a whole and to his views about intentionality. Why? Because he will argue that the subjective character of experience, "does not only take place in me, but is also for me" (Kriegel, 2011, p. 86), and this leads him to accept that the correct theory of the experience is that given by the High Order Theories of Consciousness. He argues that "being aware of something is a matter of suitably representing it [...] representing something is a matter of being in a mental state that represents it" (Kriegel, 2011, pp. 86-87). Crucially and more specifically:

According to higher-order theory, a mental state is conscious just in case it is represented in the right way by a higher order-state of the right kind. More precisely, a mental state  $x$  of a subject  $S$  becomes a conscious experience – acquires experiential character – when, and only when,  $S$  has some suitable mental state  $y$  that represents  $x$ . (Kriegel, 2011, p. 84)

He makes use of higher-order theories of consciousness in order to retain a naturalized account of intentionality based on tracking relations – the high-order properties represent and track first-order properties. Let us remember how Kriegel understands experience: there is an object that has both phenomenal and objective properties, and both carry the relevant representational content that will elicit the subjective character. Hence, the representational character or



intentionality is how such a subjective character expressed by High Order Theories of Consciousness tracks and represents the relevant properties of the external objects. In Kriegel's words:

To a first approximation, we might formulate the higher-order tracking theory simply in terms of the combinations of two occurrences of tracking: a first order state's tracking of an environmental feature, and a second-order state's tracking of that first-order state. However, a better approximation would require not only that the second-order state tracks the first-order one, but that it track more specifically the first-order one's tracking of the relevant environmental feature. What is tracked is not just the state, but a certain property of the state, a tracking property. (Kriegel, 2011, p. 95)

Kriegel is not interested in determining what is more basic – experience or intentionality – rather, he is interested in securing a naturalized framework of intentionality based on tracking relations, with a view of how experience is internally realized. In his view, this will explain how an experiential property is able to track a representational property. He is also interested in determining the primacy of the original over the derived, or, in his words, the “primacy of experiential-intentional over the non-experiential intentional” (Kriegel, 2001, p. 45). The former is what can be called original intentionality and the latter is what can be called derived intentionality (derived from experiential-intentional states). How does Kriegel explain such derived intentionality? In some respects, he would defend a position close to Dennett's for he explains the non-experiential intentional states' derived intentionality in terms of Dennett's interpretivism (Kriegel, 2011, p. 201). However, the same problems that, as I pointed out, face Dennett, also confront Kriegel's views on derived intentionality. But why does

Kriegel hold such complicated views on intentionality? I think he wants to retain a belief in derived intentionality, but to keep this view he needs an explanation of how, if experiential-intentionality is the original intentionality, it is possible for there to be derived intentionality. Hence he argues that derived intentionality is related to experiential intentionality, and that tracking relations ascribe content to such derived intentionality<sup>49</sup> (Kriegel, 2011, p. 248)

I shall not attempt to explore Kriegel's more general views, but there is a strong spirit of externalism to his philosophy. He is attracted to representational views because of their promise of naturalizing intentionality. For instance, Kriegel thinks that the "building blocks of intentionality are tracking relations" (Kriegel, 2011, p. 249). He mixes different traditions: tracking theories, higher-order theories and interpretivism (Kriegel, 2011, p. 240) because he wants to keep the best that representationalism has to offer. He wants to have as much as externalism as he can get without actually being an externalist. He aims to retain the internalist insight, but, "without giving up impressive advances made in naturalist work on intentionality since the seventies" (Kriegel, 2011, p. 249). However, there are problems with the way that he puts experience at the centre of his theory of intentionality. As Kriegel himself asserts, his theory could be "developed as externalist as well" (Kriegel, 2011, p. 249). Whilst also a materialist, my own views are rooted in a more internalistic view, and rely on the physical realization of the experience by brain states. My views have the advantage that the phenomenal experience does not depend upon representational content, rather it is the representational content that is shaped by the phenomenal character of the

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<sup>49</sup>Indeed Kriegel's idea is to combine, "(ii) interpretivism about derived intentionality, (iii) higher-order theories of underived intentionality, (iv) a naturalized self-tracking construal of higher-order tracking, (v) an internalist twist that appeals to response-dependant properties only in underived-intentional content and (iv) a teleo-informational take on the tracking relations" (Kriegel, 2011, p. 248) This, it seems to me, is what he suggests could be a theory of experiential intentionality.

experience; and this phenomenal character as a whole, contrary to Kriegel, is realized by brain states, grounded in a non-reductive physicalism and explainable in terms of indirect realism about perceptions. So my views are at their foundation completely different from Kriegel's. Furthermore, my conclusion entails a new discussion not just of intentionality in a more internalistic way, but also a new discussion of the hard problem of consciousness. I shall conclude this chapter with a brief discussion about the different options to naturalize intentionality and, in my view, the most promising path to take.

## 4.8 The natural path to intentionality

Any view of intentionality has to lead to the problem of the naturalization. But if, according to Brentano, intentionality cannot be physically reduced – or at least cannot be explained in physical terms – what alternative is the most plausible to naturalize intentionality? My research suggests that the mind can be understood with a physicalist ontology – particularly non-reductive physicalism – therefore, a project to naturalize intentionality is not hopelessly optimistic. There has already been much effort expended on finding a naturalized explanation of intentionality, and thereby, so it has been thought, of the entire mind. This is the aim of Tye (1995, 2000) and other advocates of externalist representationalism (Dretske, 1995). However, in my view, these efforts have not been wholly successful. As my earlier arguments suggested, representationalism is an unpromising path. Instead, I favour a naturalist account of intentionality based on the physical nature of the phenomenal experience. Such ideas entail a serious dispute about the nature of the mind, and ultimately involve not just the phenomenal character of the experience but the entire hard problem of consciousness.

### 4.8.1 Chisholm on intentionality as the criterion of intentionality

Departing from the ideas of Brentano, Chisholm tries a different path. It has been argued (Kriegel, 2001, p. 125-126), that the way that intentionality is analysed by

Chisholm, even if it is initially “satisfyingly precise” (Kriegel, 2011, p. 126), is nonetheless problematic. The idea is that intentionality can be explained in terms of intensionality (with-an-s), via an analysis of where such intensional contexts appear, and how such contexts are related to psychological states. That is to say, according to Chisholm, intentionality should be investigated in terms of language (Chisholm, 1957, p. 170). What does this mean? Chisholm wants to explore, and define more precisely, the idea of ‘intentional inexistence’, and he finds a way to do this by analysing the way that we express our psychological states. This is what extension and what intension mean in sentences. Extension according to Dennett, can be defined as the “thing or set of things to which the terms refers”, and intension “the particular way in which this thing or set of things is picked out or determined” (Dennett, 1996, p.38-39). A crucial feature of the distinction is that an extensional sentence allows co-referring terms to be substituted without altering the truth-value, whereas an intension does not. E.g. ‘Venus is a planet’ is extensional because it remains true even if we substitute ‘Venus’ for ‘Hesperus’; but ‘John believes Venus is a planet’ is intensional, because the sentence may become false if we substitute ‘Hesperus’ (since John may not know that Venus is Hesperus). This makes physicalists suspicious of intentional sentences, because the words no longer seem to just be picking out objects in the world. From this analysis, according to Chisholm, one can determine valid criteria for intentionality. According to Feldman and Feldman

we can express all of our beliefs about physical phenomena without the use of intentional sentences; but when we describe psychological attitudes, then we must either use intentional sentences or else make use of other

terms that are not needed for the description of physical phenomena  
(R.Feldman and F. Feldman, 2015)

In other words, what it is required is to understand which sentences are used to refer to “psychological phenomena” and which are not (Chisholm, 1957, p. 172-173). If such sentences fulfil the requirements of the criteria of intentionality sketched by Chisholm, then such statements indicate how we determine what our psychological states are about, their intentionality. According to Chisholm, sentences that involve expressions like believes, expects, etc., “occur in sentences which are intentional, whereas ‘sits in’, ‘eats’ and ‘shoots’ do not” (Chisholm, 1957, p. 170). Chisholm consequently maintains:

...that we do not need to use intentional language when we describe non-psychological phenomena; we can express all of our beliefs about what is merely 'physical' in sentences which are not intentional. But...when we wish to describe perceiving, assuming, believing, knowing, wanting, hoping, and other such attitudes, then either (a) we must use language which is intentional or (b) we must use terms we do not need to use when we describe nonpsychological phenomena (Chisholm, 1957, p. 172-173).

Chisholm seems to suggest, like Brentano, that the psychological states, and hence intentional states, cannot be expressed in the same terms as physical phenomena. So does Chisholm try to naturalize intentionality?

Chisholm favours the view, based on the philosophical and scientific views of his time, that phenomenology and the philosophical views that favour sense-data are

unwelcome. He was generally against physicalism.<sup>50</sup> He reserved intentionality for the mental. According to Chisholm, intentionality can be explained only through the aforementioned linguistic analysis, and this offers a possible path to explain its psychological content. Thus Chisholm embraced some of the views of Brentano, particularly the idea that only the mind can exhibit such a feature, and that it cannot be reduced to a physical explanation.

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<sup>50</sup>That said, there are elements of his thought which physicalists might like, since he defends a direct realist view about perception and denies any phenomenology. Nevertheless, he separates the mental from the physical on the basis of intentionality. According to Tim Crane: “[Chisholm] attempted to reformulate Brentano’s criterion as a way to distinguishing between sentences describing mental phenomena and sentences describing physical phenomena, and of demonstrating the irreducibility of the mental to the physical, and hence the falsity of physicalism” (Crane T. , 2015, p. XI)

#### 4.8.2 Quine: can intentionality be naturalized?

Quine is committed to a physicalist picture of the world. According to Hookway's reading of him: "The physical facts, are all the facts" (Hookway, 1988, p. 212). However, Quine was sympathetic to Chisholm's views of intentionality. For instance, Pierre suggests that "[Quine] agrees with Chisholm (1957) that the intentional vocabulary cannot be reduced to some non-intentional vocabulary" (Pierre, 2014). But how then, does Quine as a physicalist understand intentionality? Lyons suggests that Quine wishes to centre talk about the mind "around the concepts of intensionality and extensionality" (Lyons, 1995, p.14). By this criterion, Quine determines what can be accounted as psychological – in other words, what can be studied by science and what cannot. As Hookway suggests, the only way to express scientific theories according to Quine is by an "extensional language" (Hookway, 1988, p. 94). Only an extensional language can we determine what a scientific theory says about the world, and due to the fact that intentionality is expressed in intensional language, then intentionality, according to Quine, cannot possibly be expressed in terms of scientific theories. Thus: "Quine holds that there is not, nor can there be any science of intentionality which reveals the nature of real mental events" (Lyons, 1995, p. 14).

In summary, while Brentano suggested that a science like psychology might determine what mental phenomena can be studied, and Chisholm suggests intensionality as a criteria of intentionality, Quine did not accept that intensional language had a place in scientific theory. As Lyons puts it: "for Quine, the correct language or notation for fundamental natural science is extensional" (Lyons, 1995,



p. 14). Quine did not think that the mental, and therefore intentionality, could be translated into the terms of a physical vocabulary. He maintains that:

there is no presumption that the mentalistic idioms would in general be translatable into anatomical and biochemical terminology of neurology, even if all details of the neurological mechanism were understood (Quine, 1985, p. 6)

But this does not imply, according to Quine, that we cannot talk in such 'intensional' language in our common daily lives. This is suggested by Paterson: "The intentional idioms, talk of what people want and believe, are indispensable in daily life, but the scientist must forswear them" (Paterson, 2008, p. 540). Whether or not there can be a science of intentionality is one of the core issues at the heart of contemporary theories of intentionality, particularly for those who try to explain intentionality within a physicalist framework (Tye, 1995, Drestke, 1995, Kriegel, 2011). I am sympathetic to the idea that intentionality can indeed be naturalized, but I do not agree with the metaphysical assumptions of externalist representationalism, or with the views of Kriegel. I have argued that mentality is realized by physical processes in the brain, and it follows from the completeness of physics that every aspect of mentality must be physical. However, as soon there is talk of intentionality or consciousness, it seems to become more difficult to fit the mind into a natural framework. In this context, the important point it is not that Chisholm or Quine are right or wrong about what they think about intentionality, but rather that they provoke new insights into how the mind might be physically explained.

Nonetheless, according to this research, it remains the case that intentionality can be explained in physical terms. It is explained in physical terms because it is

anchored in the phenomenal character of the experience that ontologically is physical – determined by physical brain states. Intentionality cannot just be explained linguistically, for, “the phenomena [of intentionality] is not linguistic” (Kriegel, 2011, p. 126). Brentano and Chisholm may be right in that there could be an autonomous analysis of the mind, such as psychology, with its own distinctive vocabulary, but that is not because the mind is ontologically different. As was discussed in Chapter 3, it cannot be correct to say that pain is C-Fibers firing. Clearly, pain and the neural properties that realize pain are not the same. We say different kinds of things about them – we talk about them differently. However, ontologically both are physical – this has been explained through non-reductive physicalism. Reductive explanation would exclude all of the phenomenology. According to Putnam (1967) and Fodor (1974) (§3.3.1), we cannot reduce a psychological phenomenon to a physical one, not because it is not physical, but because the taxonomy that each one of us uses is different, hence reduction is not possible. This is the only separation that I can grant. Even Quine was eventually to soften his worries about the problems of translating from a psychological vocabulary to a physical one, by embracing anomalous monism: “Even those of us who do not acquiesce in a metaphysical dualism of mind and body must take the best of what Davidson has called anomalous monism” (Quine, 1985, p. 7). This suggests a form of non-reductive physicalism, rather than the eliminativism Quine is best-known for. I think Quine had a perceptive insight here. However, neither the views of representationalism in the ideas of Tye or Dretske, nor the linguistic analysis of Chisholm, are adequate to determine the nature of intentionality. And yet, a physical explanation of intentionality is possible. The implication of this phenomenal nature of intentionality requires clarification, and this task will take us to the heart of the so-called hard problem of consciousness

## Chapter 5

I think I have a dualistic nature

Bob Dylan, Own's exiles on main street, 2010, p.127

### The Real nature of consciousness' hard problem<sup>51</sup>

#### Introduction

As this chapter is one of the key chapters of the thesis, I will start with an outline of its argument. The overall aim of the chapter is to explain how consciousness can be understood under a distinction between primary and secondary qualities. In order to do that, a series of objections and replies to the views that have so far been defended will be presented. I will start with a discussion of the problem of consciousness as stated by David Chalmers. Then, in section 5.2, "When the problem of consciousness was not a hard problem", I will explore the nature of the problem of consciousness – basically why this was not a problem in the accounts of Smart or Place. Then the discussion will move to section 5.2.1, "Why is consciousness a problem anyway?", where I explain why consciousness is still a problem. In section 5.3, "Dr. Chalmers, or how I learned to stop worrying and love the hard problem of consciousness", the discussion will be about Chalmers' explanation in the reductive framework that leads to the idea of panpsychism, as an alternative metaphysical position to explain consciousness. I reply to this view, and, in section 5.4, "What does our phenomenology reveal?", I present the

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<sup>51</sup> In this chapter I discuss in general terms about the mind, I use the word 'consciousness' as a particular problem of our phenomenology. Understood like that, it is a fundamental part of our minds and cannot be separated from any explanation of the mind itself.

arguments in favour of my internalistic point of view. Here I present some scientific findings that support my analysis, and I discuss again the importance of the distinction between primary and secondary qualities. In the next section, I offer some natural objections to my position. Section 5.4.1, “Objection 1: the phenomenology does not determine our intentionality, and will not reveal a primary quality”, presents the objection that phenomenology does not reveal anything relevant; I reply that according to some scientific findings, it is possible that our phenomenology does indeed reveal the world to us. In relation to this reply, I present section 5.4.2, “Objection 2: Even if we knew all the physical facts, we could not explain consciousness or intentionality in physical terms. Therefore, there is still a hard problem”. This is another objection and reply: if physical facts are known, still the problem of consciousness beyond the scope of our scientific understanding remains. I present in reply an argument from the scientific arena that may show that indeed consciousness can be understood in the relevant physical terms outlined in this thesis. However, this last reply raises another objection, explored in section 5.4.3, “Objection 3: even if there is empirical evidence for how the brain is related to consciousness, there is still an explanatory gap”.

## 5.1 The consciousness hard problem

David Chalmers (1995) introduced the distinction between easy and the hard problems of consciousness: according to him,

At the start, it is useful to divide the associated problems of consciousness into "hard" and "easy" problems. The easy problems of consciousness are those that seem directly susceptible to the standard methods of cognitive science, whereby a phenomenon is explained in terms of computational or neural mechanisms. The hard problems are those that seem to resist those methods. (Chalmers, 1995, 200)

We are now in the second decade of the 21<sup>st</sup> Century, and yet, 21 years later, the problem is still causing perplexity. This indicates that it is indeed a hard problem! In the first sections of this chapter I will describe how the problem has been faced from the second half of the 20<sup>th</sup> Century. After which I will survey Chalmers' position, and explain why the solution that he offers is unsatisfactory. Finally I will introduce a new direction to the discussion, in line with the views defended in this research, to explain how the hard problem of consciousness might alternatively be understood.

Certainly, simply to define consciousness is philosophically difficult. Moreover, the metaphysical grounds by which to explain consciousness make up a bazaar of different options (Van Gulick, 2002). How consciousness appears in the universe is a question that remains unanswered. The old 'mind-body problem' tends now to be understood as a generation problem – a problem of how consciousness is generated by neural processes in the brain. It has been hard to recognise that in some way consciousness must be physical – still a controversial

claim to some philosophers (Chalmers, 1995, 1996), even though they admit that the brain and consciousness are intimately linked. Hence, any relevant scientific finding has been seized upon to help provide a possible answer as to how consciousness could arise from the physical brain (Crick and Koch, 1990, 2003). Science has thus contributed to the debate but, to date, it has not provided satisfactory answers. It has thus been argued that the brain is not the place to look for the phenomenal aspects of consciousness (Tye, 1995). Alternatively, it has been argued that we should reduce mentality to the most basic physical features and deny any phenomenology, as Place (1956) or Smart (1959) did, and so nowadays, does Dennett: "I claim, then, that sensory qualities are nothing other than the dispositional properties of cerebral states to produce certain further effects in the very observers whose states they are" (Dennett, 1988, p. 146). As argued in the previous chapter, for Dennett the idea of consciousness is something trivial, and intentionality is something that can be externally determined.

In the face of these varied options we should ask what kind of object of study we have, and what kind of question might we ask about that object? Is this itself a philosophical question. Can philosophy offer an answer? And if it is not a philosophical question, could science provide an answer? 'What are numbers?' 'What is good?' 'What is evil?' 'Is there a God?' – these are philosophical questions, albeit as yet unanswered. I believe that 'How does consciousness arise?' is another of those questions, in essence. The answer could take a long time to reach, but nonetheless philosophical reflection offers us a better understanding of the real nature of the question itself, and science can also offers relevant insights. A possible view is that indeed, the answer may be an

intertwined one; philosophy may need science, and science may need philosophy, but both methodologies might be best used independently,<sup>52</sup> because their approach towards the same object could be quite different.<sup>53</sup>

However, in the late 1950s Place (1956) and Smart (1959) believed that science would explain consciousness, and their materialist approach became an integral part of metaphysical reflection about consciousness.

And a result of such views, as has been pointed out, phenomenology was excluded from any explanations of mentality (Place, 1956, p. 50). Reductionism was fashionable and consciousness was seen simply as a brain process. The phenomenal aspect of consciousness was ignored. It was thought that since science offered explanations that were satisfactory in biology, chemistry, physics and so on, it would also be successful in explaining the mysteries of the mind. But does the scientific progress of the second half of 20<sup>th</sup> Century really make it so obvious that consciousness can be explained by the same means? Today, we are more doubtful. Does this mean that physicalism is wrong? No, but it depends on how physicalism is understood. And the way that it can be understood will shape our discussion about the nature of consciousness

## 5.2 When the problem of consciousness was not a hard problem

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<sup>52</sup>An example on how science may help philosophy is provided by Dennett's criticism of Descartes: a fundamental principle of physics is that any change in the trajectory of any physical entity is an acceleration requiring the expenditure of energy, but where is this energy to come from? It is this principle of the conservation of energy that accounts for the physical impossibility of "perpetual motion machines," and the same principle is apparently violated by interactionist dualism (Dennett, 1991, p. 35). Hence, the explanation that Descartes offered did not succeed. In this case science offered the correct explanation about what momentum is, and thus the philosophical view of Descartes about how the mental substance and the physical substance interact was rightly questioned.

<sup>53</sup> This is also sometimes a source of confusion. For example, as Quine pointed out, science may talk in extensional language, whereas intentionality is a feature of the mind and has to be explained with the use of intensional language. This explains Quine's scepticism about mind.

The views of Place and Smart introduce the idea that consciousness could be explained in physical terms. Their arguments try to debunk any dualist conception of the mind. The identity theory proposed by Place (1956) and Smart (1959) suggests that consciousness is the same as brain processes. However, in holding such a view they were forced to exclude (or ignore) phenomenology. But how did the advocates of identity theory justify their metaphysics? Smart offered a topic neutral approach. Rather than offering an explanation for the intrinsic process that determines consciousness, he suggested that what a person does is to report an event of his sensations (i.e. brain processes). Such a report is given in neutral terms, for since we do not know about what is going on inside us, we are not making a commitment to either “dualistic metaphysics or a materialistic metaphysics” (Smart, 1959, p. 60). We simply report: “...something going on which is like what is going on when...” (Smart, 1959, p. 60) In other words, the intrinsic nature of the event is not central to the metaphysical explanation of consciousness, or to us, in order to understand the nature of our sensations. Nonetheless, according to Smart, science will determine that what plays the role of sensation is a process in the brain. Thus, the so-called hard problem is apparently dissolved. However, this approach also dissolves phenomenology (Place, 1956, p. 50-51). But, as I have argued in previous chapters, the phenomenal character of experience is one of the central features of mentality and therefore should not be excluded: any explanation of the mind that excludes phenomenology will be incomplete. The view of Place that to determine a given experience, is just “...to show the brain process which is causing the subject to describe his experience...” (Place, 1956, p. 51) was a naïve position, but nonetheless the view that a physicalist ontology based on a reductive approach



could explain consciousness became a very attractive position. An alternative was simply to eliminate consciousness, as Dennett advocates (Dennett is more of an eliminativist than a reductivist). However such reductive physicalist views have either been debunked (Putnam, 1967, Fodor, 1974), or else have generated a lot of scepticism. So what failed? Does physicalism as an alternative to dualism fail? Not necessarily. It seems more of a problem as to how to define physicalism. In other words, it was reductionism, or as Fodor has suggested, the idea that physicalism entails reductionism (Fodor, 2002, p. 126) that failed.

And if any reductive physicalism that excludes the phenomenal aspects of consciousness fail, then part of the problem that any explanation of consciousness faces today is how to explain consciousness without the reduction to the physical-chemical properties of the brain. This is precisely the source of scepticism to any possible physical explanation of consciousness. And yet, physicalism still seems to me one of the best approaches to determine the metaphysical nature of consciousness. It is not just that consciousness is causally connected to the brain; it is that the brain realizes the relevant phenomenal states, and by the completeness of physics, as was explained by Papineau (1993), consciousness necessarily must cohere to a physicalist ontology. But how? In my view, we should retain physicalist ontology, but as has been argued, via non-reductive physicalism. For, reductive physicalism cannot explain the phenomenal aspects of consciousness and dualism cannot explain the interaction of the physical and non-physical.

### 5.2.1 Why is consciousness a problem anyway?

Although the reintroduction of phenomenology is necessary, this reintroduction challenges physicalism; it suggests that perhaps consciousness presents us with an intractable problem. Nagel makes clear that the subjective aspect is inherent to experience itself: "...fundamentally an organism has conscious mental states if and only if there is something that it is like to be that organism – something it is like for the organism" (Nagel, 2002, p. 216). This definition of consciousness entails a problem, as Nagel argues that this subjective character cannot currently (the word 'currently' is needed, because Nagel thinks that there may eventually be a scientific revolution that will explain consciousness in objective terms) be explored with "objective physical theories" (Nagel, 2002, p. 220) – hence, the deep problem. According to Nagel: "Without consciousness the mind-body problem would be much less interesting. With consciousness it seems hopeless". (Nagel, 2002, p. 219) This is a very intuitive and a very paradoxical position. After all, who can access my experiences, who can smell the coffee as I smell it? And yet, the place to look for such explanation is the brain itself. However, if the consciousness is to be found in the brain, realized by the physical properties of the brain, how is such a relation to be understood? I have to agree with Papineau that, "[T]he feeling of an 'explanatory gap' arises only because we cannot stop ourselves thinking about the mind-brain relation in a dualist way"(Papineau, 2010, p. 5). These dualist assumptions led Chalmers to setup the aforementioned division between the easy and the hard problem of consciousness. But how can such dualistic views be confronted; how can the phenomenal aspects be explained within a physicalist framework whilst avoiding the problems of reductionism, and

the problem mentioned by Nagel, and the explanatory gap, and indeed any influence of dualism? As mentioned, one attempt to avoid these problems was representationalism – explaining consciousness in terms of intentionality, retaining the phenomenal character of consciousness within a physicalist account (Tye, 1995). However, we have already seen the failing of this approach. On the other hand, a position like eliminativism excludes everything that is distinctive about mentality. This is Dennett and Churchland’s approach (Dennett, 1991, 1996, 1988; Churchland 1997). However, Dennett admits that what the mind is can be answered with the help of more fundamental revelations from science, such as the insights of theories like evolution that Dennett uses to explain intentionality. Hence, Dennett’s approach inherits some of the scientific promise of Smart and Place. But again, this approach excludes the most distinctive aspects of the mind from the mind itself! Thus, there is a conundrum in the physicalist mainstream. In this context of failing physicalist approaches, it is not surprising that dualism has not altogether disappeared.

If a physicalist view is to be defended, it should be via an approach that acknowledges the phenomenal aspects of consciousness. This has been the focus of this research: to provide an account which is physicalist enough to avoid any form of dualism, and flexible enough to avoid the problems of reduction. How then is the question to be answered? How is consciousness generated from the physical properties of the brain? This is one of the greatest puzzles in the contemporary philosophical debates on the topic of consciousness. But we should not give up. On the contrary: “[T]here is indeed a residue [of consciousness] that continues to escape explanation, but the more we can explain relationally about the phenomenal realm, the more the leftover residue shrinks toward zero” (Van

Gulick, 1992, p.565). This approach of Van Gulick's is essentially the one I shall pursue. But it is also fundamental to understand that an account of the phenomenal realm needs to include its relation with intentionality, which is something Van Gulick does not have clear<sup>54</sup>. But before we move on to this approach, let us first review the discussion so far.

### 5.3 Dr. Chalmers, or how I learned to stop worrying and love the hard problem of consciousness

What this research is aiming for is not just to clarify how consciousness is related to intentionality but rather to provide a clear understanding that ultimately consciousness and intentionality are physical properties realized by the relevant brain states determined by our biological structure that has been shaped by social, cultural and linguistic factors. A neural approach is bound to be incomplete. Since consciousness is intimately related to intentionality, this relation needs to be included in the discussion of the hard problem. Hence, the next step is to clarify the place of intentionality in the debate. And this is something that science needs to address too. For instance, the relation of consciousness with intentionality should also enter into discussions – for example – of AI, for if we do not

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<sup>54</sup> Indeed, as Van Gulick suggests, there is a relation, but this relation is not clear in Van Gulick. As is clear from the following, Van Gulick shows some sympathies for the teleofunctional approach:

Overall I hope thus to have established the three main claims about the relation between intentionality and consciousness that I laid down at the outset.

1. Contrary to Searle, a state need be neither conscious nor accessible in principle to consciousness to have genuine intentional content. 2. Contrary to Dennett, phenomenal consciousness cannot be fully analyzed and explained solely in terms of nonphenomenal intentionality.

but

3. One can give a basic account of intentionality that applies to nonphenomenal mentality and then expand that account in a way that at least partially explains the nature and basis of phenomenal consciousness. (Van Gulick, 1995, 287)

understand or include the relations of both properties in such debates, we could be far away from replicating artificially any intelligent and conscious behaviour.

As previously suggested, it may be that the hard problem arises on the back of assumptions inherited from dualism, and of course, the failure of reductionism. For instance, as Chalmers introduces the distinction, he clearly already thinks that consciousness is something that is over and above the physical aspects of the universe. But because science cannot explain a particular issue we should not conclude that it is not physical. Nor should we conclude that scientific methods cannot take us any further, until we understand correctly the nature of the consciousness hard problem. If the hard problem arises in the framework of dualism, and, against this background, if it is assumed that the metaphysics favoured by science is reductionist, then it is understandable that many think science will not offer a plausible answer; and that, on these assumptions, philosophers will be caught up in an intractable quandary. There seems to be the possibility to explain secondary qualities in terms of primary qualities, but the former cannot be explained by sciences, and it is the latter that determine our objective and scientific understanding of the world.

Nonetheless, at first sight, we might think that Chalmers is right – again, his view is a very intuitive position. And yet, there is no doubt that science could determine the physical properties of the rose such that reflected light of a given wave length may be defined as a red colour or pink or white. But how will science measure my perception or my introspection of such colours? If you think that this is very difficult you would be right. It is the start of the problem. As was pointed out before, the hopeless task presented is to explain a secondary quality in terms of a primary quality. If you favour a reductive physicalism, then you will have to dismiss any

phenomenology. If you recognise the existence of phenomenal properties, and yet want a physicalist explanation, you may be sympathetic to representationalism. However, to support this last view, you will need to hold the idea that there is nothing in the head relevant to such phenomenology, that the explanatory gap is an illusion (Tye, 2000), and that everything is externally determined. But this view is highly problematic. However, if you accept the existence of phenomenal properties but you are sceptical about a physicalist explanation, then you may hold the view that consciousness, even if is causally dependent upon our brains, is not physical. Thus, you may favour some kind of dualism. Property dualism has lately become popular, for according to Jacquette: “it is fully capable of absorbing scientific findings about the physical functioning of the brain and nervous system...” (Jacquette, 2009, p. 24). But I think this is just an illusion, and as I have argued (Chapter 3) such an approach is quite problematic. Again, it seems to me that Chalmers goes directly to the point of separation, between something physical, the brain, and something non-physical, consciousness. In other words, he departs from a position where consciousness, even if though it depends upon a physical base, is not physical (Chalmers, 2002, p. 248).<sup>55</sup> He asserts that, “there is no doubt that consciousness is closely associated with physical processes in systems such a brains” (Chalmers, 2002, 248), but that is apparently the only relation that he grants.

But let us suppose that consciousness is indeed non-physical, as Chalmers suggests. As human beings we have conscious experience: how, if such consciousness is non-physical, does it affect the physical? It is precisely because of such a separation that Chalmers divides the whole debate into easy problems

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<sup>55</sup> This is a clear influence of the views of P.F. Strawson discussed in Chapter 3.

that are amenable to the approach of science, and the hard problem, not amenable to a science perspective. Thus, a materialist view of consciousness is, on Chalmers's views, excluded. Using conceivability arguments similar to those used by Descartes<sup>56</sup>, Chalmers claims that there could conceivably be philosophical zombies, creatures physically identical to us but lacking consciousness; and if such conceivability entails a metaphysical possibility, then, consciousness cannot be physical: "[I]f there is a metaphysically possible universe that is physically identical to ours but that lacks of consciousness, then consciousness must be a further, non-physical component of our universe" (Chalmers, 2002, p. 249). This position can be criticised on several grounds, but let us say for the sake of argument that Chalmers is right. How is it that a creature can be molecule-for-molecule identical to us, and yet lack of one our features? Even if there were such creature without consciousness, according to my view they would lack intentionality too, which means that Chalmers does not have a satisfactory idea of how consciousness works. Chalmers prefers to deal with intentionality in external terms. In other words, and this is the point that I want to discuss further, the hard problem of consciousness is not exhausted by how the phenomenal character of consciousness arises from the physical properties of the brain. The problem will have this implication until the relation between consciousness and intentionality is understood in the sense proposed in this thesis. Whilst the relation between consciousness and intentionality is misunderstood, there remains an additional aspect to the problem.

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<sup>56</sup>Let us remember that Descartes used a Conceivability Argument in the 6<sup>th</sup> meditation, arguing that if something can be conceived (clearly and distinctly), then its existence is possible. I will return to this point shortly.

Did Chalmers explain the nature of consciousness? In suggesting a possible answer, Chalmers embraces a position sympathetic to panpsychism.<sup>57</sup> Why? He thinks that the relation to be established between the brain and consciousness must be in “reductive terms” (Blackmore, 2009, p. 42), but paradoxically this reduction, according to Chalmers, is not possible: “Almost every phenomenon is reductively explainable... except for consciousness experience” (Chalmers, 1996, p. 88). In other words, Chalmers is sceptical about the possibility of reduction of consciousness to the physical properties of the brain. He does not think that neural correlates can explain, for example, the subjective feeling of pain. He has no hope that consciousness can be explained in terms of such properties of the brain, just as “concepts like time and space cannot be explained in terms of more fundamental properties” (Blackmore, 2009, p. 42). According to Chalmers consciousness cannot be explained in terms of more fundamental properties, because consciousness is itself a “fundamental property” (Chalmers, 1996, p. 297). Possibly panpsychism would offer Chalmers a means to explain the distribution of consciousness and to explain why, depending on the complexity of a given system, it is more or less conscious (Blackmore, 2009, p. 44); for, according to Chalmers, consciousness exists in the universe as a fundamental force.

But what basis do we have to believe that everything in the universe has a mind or consciousness? Empirically it is impossible to justify this position, and metaphysically it is dubious, because it does not explain how such consciousness

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<sup>57</sup>As Sprigge explains: “Panpsychism is the thesis that physical nature is composed of individuals each of which is to some degree sentient” (Sprigge, 2000, p. 654) According to Sprigge, panpsychism provides an “explanation of the emergence of consciousness in the universe to say that it is, in fact, universally present, and that the high-level consciousness of humans and animals is the product of special patterns of that low-level consciousness or feeling which is universally presented” (Sprigge, 2000, p. 654).



arises in the first place. Chalmers doesn't need to explain this – he's saying that it's a fundamental feature of the universe, so it doesn't 'arise': it was rather always there. Hence, Chalmers fails to solve the question that he formulates, and as he says, "...right now nobody knows the answer to that question" (Blackmore, 2009, p. 38). We can imagine that something like a rock or an electron has consciousness but that is because we as agents generate this idea: just observe the children playing with toys, or ourselves talking to a computer that does not work. We can imagine that these objects have conscious states, but that does not mean that such objects have any level of mentality. Chalmers argues that experience can be accounted for in terms of information: "...wherever there is a causal interaction, there is information, and wherever there is information, there is experience" (Chalmers, 1996, p. 297). He suggests that if we can get information from any object, then a conscious experience may be presented in more or less phenomenal ways (Chalmers, 1996, p. 298). Thus, consciousness, according to Chalmers, cannot be reduced to neural properties, but is present "wherever there is a causal interaction" (Chalmers, 1996, p. 298). But how does this solve the problem set up by Chalmers? He does not solve it. He rather asserts a link between information and consciousness, in order to explain and how we could say that indeed our brains are closely connected with consciousness. Positions like panpsychism should only be taken seriously if physicalism fails (given the power of our physical understanding of the world). And it hasn't failed yet – only reductivism and eliminativist versions of physicalism have failed.

My earlier arguments give more reasons to reject Chalmers's view. My position is that consciousness is a physical property realized by the relevant brain states, but not reducible to such properties; if so, we can talk about the realization or

implementation of properties, but do not have to wait for a possible identification, via a reduction of consciousness, with such neural properties. Hence, my problem is not with identification; rather it is to understand the interaction of the phenomenal experience and intentionality which shapes our understanding of the world. Chalmers would disagree, because he would insist that if the solution lies via reduction or, at least the reduction of one property to another, it will not succeed, because again, according to Chalmers, consciousness is a fundamental property. But reduction is not the only physicalist option. As we have seen in previous chapters, Putnam (1967) and Fodor (1974) have pointed out the flaws in reductionism. Another objection to Chalmers and his views is that his appeals to conceivability are problematic. If consciousness is a physical property realized by the physical properties of brain states, it cannot be that consciousness is not itself physical. Chalmers asks, “[h]ow and why do physical process give rise to the experience”?’ (Chalmers, 2002, p. 248). His answer is that if consciousness is a fundamental feature of the universe, then physical processes do not ‘give rise’ to it, and so there is no hard problem. But panpsychism’s appeal to fundamental properties should only be considered as a last resort; first we should try to explain consciousness with the physical fundamental properties which we know about. Appeals to conceivability, and the failing of reductivism and eliminativism, have not defeated the philosophical option of non-reductive physicalism plus ordinary scientific research. While this option remains viable, we should not be inventing new fundamental properties.

Why is it so hard to think of consciousness as a natural phenomenon realized by physical properties? Intuitively, we separate consciousness from physical properties, but in my view this is nonsense, and underlies many misleading

metaphysical positions. I have to agree that there is indeed a hard problem but, as I already said, it seems to me that there is something wrong with the initial answer – the initial separation between the easy and the hard problems could make sense only in a dualist view, or in a physicalist view that relies on a reductive approach. The question that Chalmers formulates may be correct; but not his answer, or the metaphysical consequences of such an answer.

The problem is broader than Chalmers realises. According to Chalmers: “[T]he really hard problem of consciousness is the problem of experience. When we think and perceive there is a whirl of information processing, but there is also a subjective aspect” (Chalmers, 1995, p. 210). But the hard problem is also related to how our experience determines how we represent the world, in other words, the discussion needs to include intentionality, and if both are properties realized by our brain states, the problem seems to be more complex than Chalmers’ answer would suggest, according to which it is a brute fact that consciousness is everywhere.

Also, there is a problem about how such individual minds interact with each other. This relates to my second criticism of panpsychism. If there is mental aspect to fundamental physical entities such as quarks, photons and so on (Chalmers, 2013), how is it that such micro-minds interact with more and more complex properties to produce finally the idea of the mind that we already conceive in creatures like us? It seems to be that the sum of all the minds of the small physical particles must interact to produce finally our perception of the apple, the colour red, the smell of the apple and so on. But if as Chalmers argues, these particles are part of the physical world, and hence are conscious, there must be laws that govern the interaction of the mind at different levels. But how does the mind of an

electron affect the mind of another electron? How can this be explained? Must we throw out all scientific knowledge and start again? Even if such particles could have a mind, there remains this objection, the combination problem,<sup>58</sup> which is, according to Chalmers, the question of “how can microphenomenal properties combine to yield macrophenomenal properties?” (Chalmers, 2013, p. 4). The solution of this problem is essential for those who favour panpsychism, and as Chalmers suggests, given “the combination problem and the limited resources for solving them, it is easy to be pessimistic about the prospects for a solution” (Chalmers, 2013, p.34). However, as I pointed out such a solution must introduce the problem of intentionality at the lower level properties, and if this is included, the prospect of solving the problem is even worse. Perhaps, the best solution is simply that there is no mind at such a level.

A much better approach is to focus on how experience shapes intentionality so that our phenomenal experiences are, as Horgan and Tieson suggest, “by their very nature, directed toward whatever they are directed toward” (Horgan and Tieson, 2002, p. 530). And this is what I want to discuss. This is a new focus on the so-called hard problem of consciousness.

#### 5.4 What does our phenomenology reveal?

Since the idea that our consciousness and intentionality can be explained in terms of our brains states is controversial, and has been the source of many debates – as has been shown in the previous sections – the aim of this part of the thesis is to address how such worries can be put to rest; it will be argued that there is an alternative way to explore the hard problem of consciousness. It will further be argued that the explanation of consciousness and intentionality from a

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<sup>58</sup> The problem of how different minds can be combined to produce one and unique mind is also found in William James, as Chalmers points out.

physical perspective in terms of brain states can be put forward following the conceptual framework outlined in the previous chapters and by exploring the relevant empirical research. Although the idea that intentionality can be explained or explored from such a perspective has not been totally developed, I will argue that this position is strong. Furthermore it is the key to understanding the hard problem of consciousness. Without a doubt, an explanation of consciousness and intentionality needs to include the role of the brain, but this is precisely where the worries arise: our brains are always active. When we are awake, we have continuous experiences and representations and when we sleep our dreams are full of experiences, sounds, faces, landscapes and so on, and yet such sensations have a physical history, fundamental to our intentionality, and to our connection with, and understanding of, the world.

How should this be explored? We have already set up a conceptual way to understand how our consciousness and intentionality are related. Now let us explore some examples and empirical information, not because such information will reveal to us how our phenomenology arises, but because such information will reveal the place to look (our brains) to understand our phenomenology. This phenomenology is our starting point to understand the world. Let us suppose that you are looking at a red apple in the supermarket, under normal circumstances (no hallucinations). You experience the object as part of an environment, and this object has some particular properties, i.e. it will be located in a particular place – on a shelf, on top of other apples, or other fruits – the lighting and the noise in the supermarket will be at particular levels. Thus, as soon you have the object in front of you, there is a perceptual state, and an awareness of all these things – the experience of the apple may include a realization of sensations like colour, smell,

taste, a particular shape, and so on. For instance, an apple could be experienced in terms of its colour: red, green or yellow. Let us suppose that the apple that you are seeing is a red apple. In other words, there is a red colour that is part of the surface of the apple that can be described in terms of secondary qualities that the conscious experience reveals to us. And yet it might be that different people experience the colour of the apple in different ways (different kind of phenomenal reds, or green or yellow). However, even if the consciously presented colour could be slightly different, the apple will always have a unique shape. There is an experience of the shape, and if the shape of the apple were experienced in different ways by different subjects, this could quickly be detected. The shape is verifiable between subjects, and let me emphasize (as explored in the previous chapter), that this shape, this primary quality, is determined by our phenomenal states as long we have the overall experience of the object (colour, texture, position, and so on).

For this reason, shape is a good example of a primary quality that is determined by the realization of the relevant phenomenology. Let us remember my previous claim in the previous chapter: it is our phenomenology that creates certain boundaries to what is represented. Therefore, if we consider intentionality from this starting point in the phenomenology, we must assume that the shapes are intentionally directed upon external shapes and that the colours are intentionally directed upon external colours. That is to say, the spherical shape of the apple that you experience is intentionality directed to the shape of the apple, and the colour of the apple that you experience is intentionality directed to the red colour of the apple. Moreover, based on that claim, we could explore the idea that indeed a primary quality like shape, if revealed by our phenomenology via intentionality,

can be scientifically explored; and then we could have a scientific picture of the world.

However, ultimately, our phenomenal states and intentional states are realized by a brain state. Thus, from an empirical point of view, this is where our phenomenology is to be found: to have this awareness and representation there will be some specific areas of the brain that are active while you are observing an object – in this case the apple – that sets up our perception, our experience, and that determines the phenomenal shape of the objects that we see and so on. Furthermore, as will be argued, even if you close your eyes, if the relevant brain state was still active, you would still ‘see’ the apple. In other words, in the visual perception of an object, a brain state may be activated so that you are able to experience qualities like shape, and, in normal circumstances, such brain activation must be the same for everybody – for if it were not, this could be detected intersubjectively. However, let us we return to our apple: you may say for example that the red<sub>1</sub> that you see belongs to the apple, and yet, I could say that the same apple exhibits red<sub>2</sub>, but we could not say that the same apple is triangular and/or spherical. If we did, we could simply run a test to see if it fitted through a triangular or circular hole, and then one of us would realise that we were hallucinating. Thus, in the real case of seeing an apple, it can be said that the shapes (primary qualities) tells us more than the colours (secondary qualities), because we know that different kinds of subjects might experience the surfaces as of different colours, whereas shape will not be experienced in a different way. Thus, if we want to construct a scientific picture of the world based on primary qualities – those that science can explain – this needs to be done via intentionality, for that has boundaries determined by our phenomenal states.

Hence, our scientific understanding of the world must be based on knowledge we get from the intentionality of the consciousness directed upon primary qualities. In other words, we must start with our phenomenology to understand and study, via intentionality, the external world.

Now, let us explore further this issue from an empirical framework, to determine first how the perception of the object can be described according to this view, to explore where to find our phenomenology, and how our intentional states that are revealed by our phenomenal states are directed to the primary qualities. To start with, some areas of the brain will be active as soon the relevant information impacts upon our cognitive systems. Let us remember that what we experience are not the direct properties of the object, rather, what we experience are the phenomenal properties realized by brain states, and as has been pointed out, these may include colours, tastes, texture, shapes and so on. Moreover, internally, once the object has been properly represented, other states like the desire to eat the apple, or the belief that you can cook an apple pie might arise. The question is: what empirical information from the brain is relevant that determines that such states are realized by the brain states? Let me try to focus first on a possible interpretation from empirical sciences about how our perception of the apple might occur.

A way to explore what happens in our brains when we see an apple is by taking a look at these findings: (István Bókkon, Birendra N. Mallick, and Jack A. Tuszynski, 2013). They explore a previous idea based on the view that there are some areas of the brain related to our visual perception and imagery, and suggest that “our visual perception and imagery share common neural substrates, and that both visual perception and imagery induce activation in retinotopically organized



striate and extra-striate regions” (ibid, p. 4).<sup>59</sup> This also hints at how our dreams and hallucinations are produced. Now, Bókkon et al. suggest that if both visual perception and imagery share the same neural substrate, and that both share the same neural path from the cell nerves in the eyes through the “striate and extra-striate regions” (ibid, p. 4), in particular the “the primary visual cortex or V1” (ibid, p. 4), then, as soon there is an object, such as an apple that impacts our retinas, the chain of events that finally produces our perception of the apple starts with the afferent inputs that nerve cells (through the aforementioned neural path) carry to the striate cortex. Thus it is, according to the results of this empirical research: “that there could be a literal image, albeit abstract, in the visual brain's neurons of which the subjects are conscious...” (ibid., p. 4).

In summary, this possible explanation indicates that it is indeed in our brain states that our phenomenology starts. This line of research suggests that our perception of the apple is the result of a long pathway of neural interaction that reaches areas of the brain in the striate cortex. In this way, the physical information that impacts our retina is transformed, and interpreted firstly in terms of phenomenal properties by our brain, producing ‘our subjective experience’, and such phenomenal properties may determine the boundaries of our representation, and will reveal via intentionality primary qualities like shape.

But how? Let us focus on the impact of different objects on our sensory inputs – particularly vision. This is related not just to processes linked to visual perception

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<sup>59</sup> I will try in this part to keep the technical concepts as simple as possible; so let me clarify some concepts: ‘retinoptically’ may refer to “the way that visual and pathways areas of the brain are organized” (Dale Purves et al., 2004, pp. 278-280). The striate and the extra-striate regions are related to the visual cortex. As Greenstein suggests, “this cortex has the name of Brodmann’s area 17, and is also referred to as area V1... it is called striate because a thick stripe of afferent inputs” (Greenstein, 2000, p. 286). Afferent neurons carry information “toward the brain or spinal cord”; if the process is in the other direction, from the neurons to the sensorial inputs, the process is called “efferent neuron” (Dale Purves et al., 2004, pp. 11-12).

and imagery, but also with areas of the brain related with memories. As Ganisa, Thompsona and Kosslyn (2004) suggest: "...visual imagery and visual perception draw on most of the same neural machinery...During visual mental imagery, perceptual information is retrieved from long-term memory, resulting in the subjective impression of "seeing with the mind's eye" (Giorgio Ganisa, William L. Thompsona and Stephen M. Kosslyn, 2004, p. 226). However, how one 'sees something with the mind's eye'<sup>60</sup> requires further explanation – more specifically how this concept may be related with the way that the shape of the object is determined. To 'see something with the mind's eye' it is necessary to distinguish a shape. Again, we could not see an apple as square or triangular in any intersubjectively stable way; the apple has a given objective and unique shape, it is spherical, and once we have this experience (like any other property like colour, sound, smells, and so on) it must be stored in areas of the brain related to memory. According to Ganisa et al. (2004), the areas of the brain related to visual perception include "portions of occipital and temporal cortex, including striate cortex" (Ganisa et al., 2004, p. 228). Now, this particular area of the brain (the extra-striate cortex, discussed previously) has recently been a focus of interest, as it seems to be that it is "responsible for orientation and shape" (*Medical News*, 2013, paragraph 1). The information provided by such research is fundamental to understanding the correct verification whereby our brains realize the shape of an object that is fundamental to our intentionality. Although the exact mechanism by which such areas of the brain interact is "still unknown" (*ibid.*, paragraph 4), these researchers offer a very promising path for discovering the underlying brain

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<sup>60</sup>There are a lot of scientific papers that use precisely this description 'mind's eye'. In my view, this is nothing other than our phenomenology; in this sense, a scientific understanding of how these phenomenal properties work might improve the vocabulary that science uses to describe what is going on in our minds.

mechanisms that are directly related to shape identification. But let us proceed step by step.

A very interesting question to ask is: what happens when we close our eyes? Is the image still in our brains? Are we still seeing the apple, the shape, colour and so on? The findings of Ganisa et al., (2004) suggests that if we close our eyes, there is no deactivation of the areas associated to our perception. In their words: “striate cortex activation is not affected by whether participants keep their eyes closed or open during the experiment” (Ganisa et al., 2004, p. 239). Although the relevant input stops (from the apple) when we close our eyes, we still see the object – colour, texture, and shape – because we still have the same brain activation. In this case, it can be hypothesized that what we see is indeed the phenomenal aspects realized by the brain states, a brain state determined by the areas associated with “striate cortex, the occipital and parietal cortex” (Ganisa et al., 2004, p. 237). Science seems to be directly supporting the indirect realist tradition in philosophy!

But as long as we perceive the object, in this case an apple, there are other ‘qualities’ like taste, smell and so on. Such qualities (secondary qualities) are part of the overall perception – the entire phenomenal experience – and it can be claimed that the realization of such properties helps us to set up the representation of the object and to tell us something about the object. Even if such qualities are experienced as slightly different, they tell us why a group in the same population will observe – or at least will tell us – that apples, or some kind of apples, are red – and not purple – and sweet and not bitter. This is interesting, because, firstly, it sheds more light on how our phenomenology and intentionality as internally realized must be fundamental conception to our understanding of the

mind; and, secondly, because this offers a way to describe how the physical realization of such properties could be understood. Such properties are what ultimately connect us with the external world, along with primary qualities – the qualities that science can study. This is something that in my opinion has not been properly appreciated, either in philosophy or in science, and this way of explaining how our intentionality is determined by our phenomenal states, and how such states determine our understanding of the primary qualities, will tell us something about the nature of the hard problem of consciousness. I will shortly return to this point.

Now, it is important to try to understand how some aspects of properties like smell and taste are realized, so let us start with a brief definition. According to an article by the *Society of Neuroscience*, “tastes and smells are the perception of chemicals in the air or in our food” (*Society for Neuroscience*, 2012, paragraph 1). But what do we perceive? What we perceive (in one sense, traditionally called “indirect”) are not chemical properties as such (primary qualities), rather, the phenomenal properties that our brains realize<sup>61</sup> – in the case of smell – from the chemical properties of the object that excite the relevant brain states. In other words, such chemical properties are required to be transformed into information

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<sup>61</sup>As Adam Pautz(2014) suggests:

Humans have about 450 types of smell receptors on the olfactory epithelium of the nose. (Contrast this with the mere three cone-types in vision or the mere four or five receptor types for taste.) They synapse at the olfactory bulbs, which in turn are connected to the primary olfactory cortex. The primary olfactory cortex is subdivided into several different areas: the anterior olfactory cortex, the olfactory tubercle, the piriform cortex . . . parts of the amygdala and the entorhinal (Pautz, 2014, p. 245).

The way that all these structures of the brain work is important to my point of my view. Despite the known fact that such structures function to convert all the external information or codified such information in phenomenal terms, nonetheless our phenomenology can be only internally determined in terms of the different brain structures. In the case of smell, the information goes through emotional and memory areas, and this may be of great importance in the generation of representational states.

suitable for our brains to give us the conscious experience of some particular properties of the object in the world that are then phenomenally represented. Now, subjectively the smell or the rose could be different, but the shape of a rose will be experienced in the same way. Just as with the apple, there is an experience that reveals to us via intentionality a primary quality like a shape. If we experience the smell of a rose, we typically have in the mind the shape of the rose, and not be the shape of a sunflower, and this is something our other secondary qualities may determine. Again, as was pointed out before, awareness of shape is intentionally directed upon external shapes and awareness of smells are intentionally directed upon external smells – always as a result of a realization by the relevant brain states that react to the physical information presented to our sensory inputs. In this way, awareness of secondary qualities can inform us about primary qualities, and thereby lead to a scientific understanding of both.

The smell process also has a very important characteristic that has recently been discussed; it has a deep connection with our emotional process<sup>62</sup> (Elizabeth A. Krusemark, Lucas R. Novak, Darren R. Gitelman, and Wen Li, 2013). In other words, the experience of a particular smell may trigger deep emotional states that also seem to influence some intentional or representational states. But how does this work? Krusemark et al. (2013) suggests that: “olfactory neuroanatomy is intertwined, via extensive reciprocal axonal connections, with primary emotion areas including the amygdala, hippocampus, and orbitofrontal cortex (OFC)” (Krusemark et al., 2013, p. 15324). Thus, from a particular perception and the experience of a given smell that is nothing more (externally) than chemical

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<sup>62</sup> This was suggested by Proust. Indeed, Simon Chu and John J. Downes in the article "Odour-evoked Autobiographical memories: psychological investigations of Proustian phenomena" explore this issue further, and suggest that “there is at least preliminary evidence that olfactory stimuli can cue autobiographical memories more effectively than cues from other sensory modalities” (Simon Chu and John J. Downes, 2000, p. 111).

molecules, we could have, via a brain state, an experience of the object that may reveal, via intentionality, a primary quality that may connect us through a deep emotional process with any object which may be experienced in isolation.

To sum up, in the presence of an object like an apple, there will be a relevant phenomenology, that, in our case as human beings, is realized internally according to the way that different areas of the brain like the V1 cortex, striate cortex and the amygdale and hippocampus interact, and if this phenomenology creates the boundaries to our representation – as was discussed in the previous chapter – then the shape of the object is determined according to this phenomenology. Thus, if we start with the phenomenology, we find an experience of an apple composed of various shapes and colours, and yet it can be claimed that the shape of the object that we see (with shape as a primary quality) determined by our phenomenal states will provide more information about what it is in the world than the colour of the object – considered as a secondary quality – because the former will not be represented differently by different people. That is to say, an apple is invariably spherical and not triangular, once confirmed intersubjectively – and if we trust in this intentionality, intersubjectively verified, then we can build our scientific understanding of the world from it. The colour might be experienced differently by different people, and yet, these secondary qualities can tell us something also, that is to say, the surface of an apple that has a verifiable spherical shape has an associated colour that a group of people will say is red, green or yellow, but not brown, blue or white. We can then use primary qualities to map out certain surfaces that cause experiences of secondary qualities. Thus, starting with our phenomenology, the scientific understanding of the world via the intentionality of the consciousness directed upon the primary

qualities is revealed, and only then, is there again something that can be said scientifically about both consciousness and the world.

However, despite all these arguments about our phenomenology and representation, a natural question is: do these findings explain finally how consciousness and representation arise from our brains? The question is, even with such a kind of research, and with such a kind of information available, why is it still so hard to understand consciousness from a physical point of view? There remain natural objections to the idea of a physical nature of consciousness and intentionality. The first objection that I will explore is that our intentional states simply cannot be explored by empirical research.

#### 5.4.1 Objection 1: the phenomenology does not determine our intentionality, and will not reveal a primary quality

Reply: This is a very intuitive objection: our representational states are always about something, but it is hard to determine how this something could be internally generated to reveal an understanding of the external world. Nonetheless, as previously argued, our brain in the presence of a given object will activate a particular area of the brain that will realize not just a state of consciousness, but intentionality. Let me try to expand on the idea that our phenomenology shapes our representation and that such states are realized by the relevant brain states, using some empirical data – with shape identification being a cornerstone of my view.

For instance, try to read the following words:

I have been one acquainted with the night.

I have walked out in rain—and back in rain<sup>63</sup>.

And now try to write those words on a piece of paper. Even though you may not realize it, when you read these sentences, and write them with your hand on a piece of paper, there is real activation of some areas in our brains responsible for the writing process, but it is not just a simple process. Rather, writing and reading are very complex tasks that not only involve object recognition but also other visual and auditory skills. Fundamental to this process are the motor skills that work as input to our brain states. Let me explain this in detail. Marta Burns (2012) describes the three main areas of the brain associated with reading process:

*The temporal lobe* is responsible for phonological awareness and decoding/discriminating sounds.

*The frontal lobe* handles speech production, reading fluency, grammatical usage, and comprehension, making it possible to understand simple and complex grammar in our native language.

*The angular and supramarginal gyrus* serve as a "reading integrator" a conductor of sorts, linking the different parts of the brain together to execute the action of reading. (Burns, 2012, paragraph 7)

This simple description of the areas of the brain associated with the reading process suggests that at least – and this is something that is easily granted – one needs to be able to identify the different shapes of the letters. It is from this base that I want to start discussing the position that I have defended. Certain empirical

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<sup>63</sup>“Acquainted by the Night”, Robert Frost.



findings (Karin H. James, and Laura Engelhardt, 2012) suggest that letter identification is the result of a complex process that involves “brain activation” via “motor skills”; particularly via the use of the hand. That is, by handwriting, certain areas of the brain can be activated (Karin H. James, and Laura Engelhardt, 2012, p. 32), after which we can properly represent the shape of letters, and not misrepresent A with B or a triangle shape, or B with a number 8. Why is this research important? It is important for several reasons. Firstly, it may identify how the different inputs of the brain are relevant for our brain states to realize the relevant phenomenology. Secondly, because this empirical information will help us to understand the intimate relationship between the aspects of the mind that have been explored. In other words, it may support the idea that our phenomenology determines the content of our intentionality. Let us explore this claim further.

In a newspaper article (Klass 2016) following this line of research about the use of handwriting vs. typewriting, Perri Klass quoted some of the words by Professor Laura Dinehart who carried out the research, and who makes a very interesting suggestion: “You have to see letters in ‘the mind’s eye’ in order to produce them on the page,” she said. Brain imaging shows that the activation of this region (fusiform gyrus) is different in children who are having trouble with handwriting” (Perri Klass, 2016, p. D6) In other words, in my view, to see the letters in ‘the mind’s eye’ is nothing else than our phenomenology in action – our experience of the shape of the letter, from which there is an associated intentionality that we can trust, in that it is about shapes. Let us see why. This intentionality allows to us to have a connection with the information available in the external world; and this representation is what science can explore. Why? Because our scientific, objective picture of the world is based upon the intentionality of the primary qualities revealed by consciousness, which is evident in this example. Since our

phenomenology will determine a shape that is verifiable through different subjects, you can then read these words, that is to say, you can identify this shape “A” with the letter A and not with other characters or shapes like “@”. Again, let me emphasize that this phenomenology and representation will depend upon a brain state that in this case will be active depending on where the input to our brain states came from. But why?

To answer this, let us explore the area of the brain activated in the handwriting process. For this particular process of handwriting there is a particular area of the brain that according to Professor Dinehart is “[the fusiform gyrus] where the visual and language come together” (Perri Klass, 2016, p. D6). Now, according to Dr. Karin James (2012), if children have not previously learned how to write a letter by hand, that particular area of the brain will not be active: a “reading circuit was recruited during letter perception only after handwriting – not after typing or tracing experience” (Karin H. James, and Laura Engelhardt, 2012, p. 32). That is to say, if they just use keyboards to type the letter, in my view the relevant phenomenology will be unrealized; thus, the relevant and real shape will not be revealed, the intentionality will not be trustworthy, and then there will be a case of misrepresentation (letter A will be confused with a triangle, for example). Thus, if shapes, as primary qualities of an object, are not represented in the correct way, this is because they were not revealed properly by our phenomenology, either because the brain state failed, or the correct input to activate such a brain state failed. If that happens, the children will have problems in determining the nature of what they are thinking and observing, and the connection with the world will not be established. In the words of Professor James: “only after practice printing letters does the brain respond differently during letter versus shape perception...” (Karin

H. James, and Laura Engelhardt, 2012, p. 38). This suggests to me, as I previously noted, that our phenomenology places the boundaries to our representation. As Perri Klass explains, one of the conclusions of James is that “[T]heir brains don’t distinguish letters; they respond to letters the same as to a triangle” (Perri Klass, 2016, p. D6). Hence, our discovery of the primary qualities via intentionality is possible only by starting with the phenomenology!

A point to highlight is that there is indeed an area of the brain that, depending upon the input (hand vs. keyboard), will realize a phenomenology that will determine the correct representation of what we are perceiving. In particular, this research may allow an identification of the fusiform gyrus<sup>64</sup> as one of the areas of the brain in charge of the realization of phenomenology and intentionality.

Thus, I conclude that necessarily there is a direct physical connection between our brains and our phenomenal and intentional states, and a causal connection from those states with the world. The former connection can be analyzed according to my conceptual explanation of how our phenomenology and intentionality are related, for only via intentionality (starting with phenomenology) are the primary qualities revealed. Although this perspective has not yet been fully philosophically explored, my view offers a plausible theory to understand this. It is important to highlight the fact that for such areas of the brain to work effectively, a proper development and suitable inputs are required, in order for the agent explore and interact with the world.<sup>65</sup> Therefore, according to this research, these processes of

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<sup>64</sup>The fusiform gyrus is an area of the brain in the temporal and occipital lobes, and as Professor Karin James says is “...a region known to be involved in reading and letter processing” (Karin H. James, and Laura Engelhardt, 2012, p. 35)

<sup>65</sup> In sum, the research done by Professor Karin James, suggests that there is brain activation as soon as the letters are written, and such activation does not happen if the letter is typed on a keyboard. Again, this suggests an intimate relation between the parts of our body, and particularly the hand and how it shapes our brain, cognition and even language. There is a very interesting book by Frank Wilson (1998), *The Hand*, which further explores further this issue.

writing and shape recognitions could provide hints about the sources and the real existence and importance of our phenomenology to our intentionality, and consequently, our understanding of the world; in other words, this is how both properties (consciousness and intentionality) interact, and how the relevant empirical research can support this view. Now, this can be explored in the other direction too, for letters do not just exist as real physical objects in the world, but also as abstract entities that allow us to connect with the world. Thus, we may ask how it is that we need to 'observe with the mind's eye' something that is not in the world but that is fundamental to our interaction with the world? Only by the realization of the relevant aspects of the mind is this possible.

Thus, if the findings of Professor Karin James are correct, then, this suggests that indeed our mind necessarily responds to a phenomenal-intentional structure. By understanding this structure, we may be able to understand what science can tell us about the world. It is clear that our brains are very complex physical artefacts, but it is inside the brain that the interaction between our experience-intentionality and the external world may need to be understood. Hence, it is my view that this 'mind's eye' is nothing but our phenomenology and intentionality in action determined by all the physical processes inside the brain. And this in turn may determine a way to study – starting with the phenomenology – the objective properties (primary qualities) of the world. Thus, the relevant empirical research, alongside the relevant conceptual framework, could determine a path to follow to determine the physical nature of our minds. This is a plausible explanation about

how the world that we experience and represent can be indeed be studied by science in terms of the primary qualities that our secondary qualities may reveal<sup>66</sup>.

5.4.2 Objection 2: Even if we knew all the physical facts, we could not explain consciousness or intentionality in physical terms. Therefore, there is still a hard problem

Reply: This objection has one of its roots in the work of the philosopher Frank Jackson (1982, 1986). Basically what Jackson offers to us is the idea of a scientist who knows all the physical facts about how the brain works but who has

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<sup>66</sup> The use of the distinction between primary and secondary qualities rests on a simple fact: primary qualities are quantified by the arsenal of scientific tools, such as mass, speed, and shape. On the other hand, secondary qualities, like smell, taste and so on, are not qualities that are quantified so straightforwardly by science. This division maps onto a traditional distinction between the physical properties of the object, realized by the object itself, and secondary qualities that resemble such physical qualities realized by our brain states. However, this distinction has not always been accepted. According to Kant:

That one could, without detracting from the actual existence of outer things, say of a great many of their predicates: they belong not to these things in themselves, but only to their appearances and have no existence of their own outside our representation, is something that was generally accepted and acknowledged long before Locke's time, though more commonly thereafter. To these predicates belong warmth, color, taste, etc. That I, however, even beyond these, include (for weighty reasons) also among mere appearances the remaining qualities of bodies, which are called primaries: extension, place, and more generally space along with everything that depends on it (impenetrability or materiality, shape, etc.) is something against which not the least ground for uncertainty can be raised. (Kant, 2003, p. 40)

In other words, Kant suggests that, like secondary qualities, primary qualities are mind-dependent (Van Cleve, 1999, p. 168). The problem is that this leads to a kind of idealism, transcendental idealism, which is quite controversial in the literature and is also regarded sometimes as counterintuitive.

A relatively recent position is Smart's (1959), who argues that consciousness is a brain process, and that we have a topic-neutral report of our sensations. He does not require the distinction between primary and secondary qualities. However, while Smart may dissolve the hard problem of consciousness with this topic-neutral approach, he rejects any phenomenology as well. His path leads to what I see as the dead-end of any reductive approach. By contrast, in my research, I pursue a non-reductive physicalist approach to mind, which preserves the complexity of the problem discussed and better corresponds to the relevant phenomenology. More generally, if we do not introduce the distinction between primary and secondary qualities, the alternatives are: reductionism, dualism or panpsychism. As has been argued for in this thesis, such accounts are problematic.

not yet seen any real colour, since only through a black and white environment has she been able to observe the world. However, Jackson argues that when she is released from confinement, and she sees the red colour of an apple, she will know something new: she will know what it is to see a red colour. Therefore, according to Jackson, in the words of Van Gulick "...the knowledge or information she gains must be nonphysical phenomenal information" (Van Gulick, 1992, p. 560). On this basis, Jackson argues that "Physicalism is false and phenomenal properties cannot be explained as (or identified with) physical properties" (Van Gulick, 1992, p. 560), and this conclusion may suggest that there is a hard problem.

One way to examine this objection is in terms of the topics discussed in objection 1: to examine how our phenomenology determines our intentionality, and based on this intentionality to examine how we know objectively, by science, the facts of world. To start with, at first sight it can be suggested that the scientist (Mary) – in my view does get the correct representation of the objects until the brain states realize the relevant phenomenology (that may include colours, texture, shape and so on, as a part of the overall experience; and let us remember, objects are only part of a given environment). In other words, she gets some awareness of colours only when the relevant information affects perceptual inputs and such inputs activate the relevant brain states that will realize the correct phenomenology. Since the neural paths of perception are related to areas associated with shape information (Giorgio Ganisa, William L. Thompsona and Stephen M. Kosslyn, 2004, p. 226), it is natural to think, that all this activation of areas of the brain in turn will tell us something about the shape that is objectively determined through subjects via intentionality via our phenomenology. That is to say, a phenomenology via intentionality will tell us about what is in the world. But we

must avoid making assumptions: rarely do colours appear in isolation to a subject, they usually appear as a part of a whole environment, as part of an object.

Thus, in the case of Mary, we must ask: can it be assumed that the objects that are represented are the same in the black and white environment and in the colour environment? We might say that this intuitively does not matter. However, there is some information that colour perception may add, something that this “secondary quality” may reveal about the primary qualities. There is empirical research that suggests that colour information could add some information related to object-shape information, different to that provided by black and white information (Inês Bramão, Luís Faísca, Christian Forkstam, Alexandra Reis, and Karl Magnus Petersson, 2010). All that we see, all that we perceive of objects, are as part of a given environment; and we do not – except in the case of afterimages, etc. – see colours that do not belong to an object, shape or environment. As has been claimed, colour could be differently experienced by different people, but shapes will always be the same, or at least agreed upon intersubjectively. However, in the case of a complete black and white environment maybe we will not even represent the objects in the correct way. Why? Well, because as previously explained, the phenomenology will not be correctly realized. Thus, such phenomenology may not reveal to us the correct shape of the objects, and we will misrepresent objects. Thus, in this case, intentionality may not provide a trustworthy basis from which to form a scientific picture of the world. This implies that only if the phenomenology is realized properly is it possible for Mary to have the knowledge she is supposed to have. But this knowledge will be in terms of an intentionality that may reveal via the phenomenology the primary qualities, and this is the knowledge that she will gain, knowledge of the physical world. However, without the proper areas of the brain being active she may not be able to acquire

this knowledge. Hence the suggestion is that without any colour experience, humans may never have been able to produce the detailed understanding we have of the surfaces of objects which produce experiences of secondary qualities. There are of course people with Achromatopsia in the world, but in a world in which everyone had this condition, there is evidence to suggest that we might not have the scientific understanding of the world which we now do.

Hence, it can be argued that if there is any difference between the perception of the shape of the objects given the colours, it is because there are areas of the brain that are active as soon as we experience colours, and these areas, since they are in charge of shape information, will not have the complete information. Thus, our intentionality via our phenomenology will not reveal everything relevant, and cannot be enough for *our* scientific understanding of the world. This suggests, both empirically and philosophically, that Jackson may be wrong. In other words, colour perception is not just the realization of a phenomenology of colour, it is also an intentionality. The experience of colour may also tell us something about the object itself. Thus, what Mary could gain as soon as she experiences colours is an intentional state that, by a given phenomenology, would allow a correct identification of objects, shapes and of course, colours. However, if there is not a difference between seeing an object in colour or in black and white, then colour may not have a relevant impact in the overall perception of the object and secondary qualities may not tell us anything about the world. Nonetheless, secondary qualities do tell us something that can be explored. But does the phenomenology that she has reveal the real shape of objects in the black and white room?

How will she know what an apple looks like, and what an avocado looks like? How will she determine shape and other primary qualities? And how, when she leaves



the room, will she learn the differences between objects? Let us explore this issue a little bit further.

There are particular areas of the brain devoted to colour perception.<sup>67</sup> In research (Inês Bramão, Luís Faísca, Christian Forkstam, Alexandra Reis, and Karl Magnus Petersson, 2010) it was concluded that: “colored objects compared to colored non-objects activated an extensive network of brain regions including the left inferior temporal gyrus, right parahippocampal gyrus, left inferior and superior parietal lobule, and left superior and anterior-inferior frontal regions” (Inês Bramão, Luís Faísca, Christian Forkstam, Alexandra Reis, and Karl Magnus Petersson, 2010, pp. 169-170). Let me review some more of the findings of this research. As has been pointed out, the fusiform gyrus plays a fundamental role in visual and language abilities (Klass, 2016). Now, how is this physical history related to the colour perception history of Mary? In other words, does neuroscience offer an insight as to how we may identify and confront the objects of the world based only on a black and white perception? Bramão et al. (2010) makes a very interesting point<sup>68</sup>:

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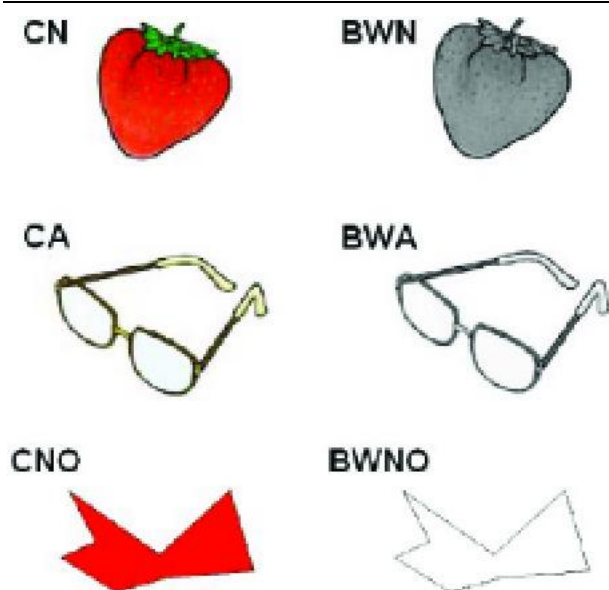
<sup>67</sup>There is a previous history that occurs prior to the light's impact on the retina. Unfortunately to describe in detail how vision works is outside of the scope of this research. However it is worth mentioning Purves' suggestion:

The pathways and structures that mediate this broad range of functions are necessarily diverse. Of these, the primary visual pathway from the retina to the dorsal lateral geniculate nucleus in the thalamus and on to the primary visual cortex is the most important and certainly the most thoroughly studied component of the visual system (Purves et al, 2004, p. 259)

<sup>68</sup> These are the stimuli used in that research. Just to be clear about what 'colour object' means, what a 'non-object' means (basically any given shape) and what a 'black and white object' means:

These activations were exclusive for colored objects and were not found when B&W objects were contrasted against B&W non-objects... We did not find any particular brain region that responded only to B&W object naming, suggesting that the recognition of B&W objects does not add a cognitive operation to the recognition of colored objects...These activations were exclusive for colored objects (Bramao et al, 2010, p. 170)

This suggests that when Mary sees black and white objects, her perception may not offer any cognitive recognition, and probably will not realize a relevant phenomenology<sup>69</sup>; the relevant phenomenology comes when she sees coloured



Example of the stimuli used in the experiment. CN – color natural objects; BWN – B&W natural objects; CA – color artifacts objects; BWA – B&W artifacts objects; CNO – colored non-objects; BWNO – B&W non-objects.

**Figure Error! Main Document Only. Stimulus used to determine brain activation in colour and shape perception.**

Taken from: Cortical Brain Regions Associated with Colour Processing by InêsBramão, LuísFáisca, Christian Forkstam, Alexandra Reis, and Karl Magnus Petersson (2010).

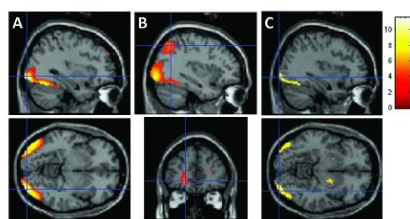
<sup>69</sup> An objector may say that without experience of colour we cannot have a proper experience of primary properties; this is a claim which seems unsupported by the experiment cited – the experiment says only that without the experience of colour some areas of the brain are not activated, but this by no means implies that we may not have good experience of primary properties. This is another objection that highlight the problem discussed in this research. A representationalist may argue that there is an objective property such as colour in the objects

objects, but this is only when the relevant brain states are active. However, when we perceive a colour of a given object, we do not perceive just the colour. There is a whole process that involves the shape of the object determined by our intentionality that starts with our phenomenology. According to Bramao et al (2010), it is sometimes only if there is a coloured object that excites particular areas of the brain that we are able to say something about the shape of an object. Of course colour could be different to different people, but if there are such differences they have not held back the development, through intersubjective agreement, of our science of colour; the differences in the case of exclusively black and white vision, given the neuroscientific evidence, seem much more dramatic. My internalistic view offers the conceptual explanation to understand how this is possible, because what has been suggested is that our minds are organized in a single structure that is phenomenal-intentional. In other words, if the findings of Bramão et., al. are correct, in the case of Mary, then Jackson misunderstands the way that she will know the facts of the world. According to

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presented to our perception, and that such a perception is a direct result of what is there, in the outside world, but our brain state just tracks such changes, but nothing relevant to our phenomenology occur in our heads. What has been said in this thesis is that to have the experience of such colour, there is a neuronal process that starts with the information provided by objects in the external world, but to determine what the object is, requires determine that indeed there is an internal process that realize the experience. What such objects exactly are, there is path to follow: we have a phenomenology that is the source of our direct experience (indirectly we experience the object), the intentionality works to put boundaries to that what it is experienced, and then the objects can be determined according to the way that our brain architecture realizes this experience. The experiment in question gave us valuable information about determining how the brain works, and how our phenomenology can be realized. The argument that I am putting forth just implies that we have a good experience of such qualities only when our phenomenology and intentionality interact, but indeed if something is not correct in our brain, most probably our perception may not be accurate, but this is something that science may determine, and the experiment that I am using just hint and idea about this, in other words, if the phenomenology would not be normally realized the representation would be wrong, and the accuracy of the object or its properties cannot be determined. I am offering a plausible conceptual framework to determine how our phenomenology is possible in terms of brain state, this mean that primary qualities are only revealed by an intrinsic process, as the arguments in chapter two, four and five have explained.

Bramão et al: “color information is an attribute that can improve object recognition (behavioral results) and activate a specific neural network related to visual semantic information that is more extensive than for B&W objects during object recognition (Bramao et al. 2010, p. 164)(see figure 2). Mary, as an individual, might learn something new; but a community of Marys might well not have developed the physical understanding of the world which we have.



A - Brain regions associated with objects compared to non-objects. B - Brain regions associated with color objects compared to color non-objects. C - Brain regions associated with B&W objects compared to B&W non-objects.

Figure 2 Brain activation during colour perception versus black and white perception. Taken from: Cortical Brain Regions Associated with Colour Processing by InêsBramão, LuísFaísca, Christian Forkstam, Alexandra Reis, and Karl Magnus Petersson (2010).

Jackson will reply that Mary simply “would not know” (Jackson, 1982, p. 278) what it is like to see red; and thus, according to Jackson, physicalism fails to explain certain facts about consciousness. His mistake is to think only of this individual woman, and forget that all the physical facts she will learn in her black and white room are the product of a history in which people have full, coloured phenomenological experience. He is right to the extent that without phenomenological red, we would not have the physical understanding we do. But he is wrong to think that this shows that physical understanding cannot explain phenomenological red. It cannot GIVE Mary the experience of red, but that experience is integral to our physical understanding, and this understanding does

indeed explain the redness, by telling us about the surfaces that cause it and the brain states which realise it.

In the same way that a person may not have the relevant input to experience a letter, in a world of only Marys, we might not be able to determine the difference not just between colours but between objects<sup>70</sup>. Even if she were released from this black and white room, even if she could see the colour red for the very first time, she would have problems to determine the difference between an apple and a baseball ball. This is, according to recent research (Karin James et al, 2010; Bramao et al., 2010), because the activation of the areas of the brain related to our visual perception<sup>71</sup> will contribute to realizing our phenomenal states and

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<sup>70</sup> A representationalist may argue that there is an objective property such as colour in the objects presented to our perception, and that such perception is a direct result of what is there, in the outside world, and our brain states just track such changes, but nothing relevant to our phenomenology occurs in our heads. What has been argued in this thesis is that, to have the experience of colour, there is a neuronal process that starts with the information provided by objects in the external world, but to determine what the object is requires determining that indeed there is an internal process that realizes the experience and intentionality. But exactly how does this happen? There is a path to follow: we have a phenomenology that is the source of our direct experience (indirectly we experience the object); intentionality works to put up boundaries to that which is experienced; then the object can be determined according to the way our brain architecture realizes this experience. The experiment in question gives us valuable information about shaping how the brain works, and how our phenomenology can be realized. The argument that I am putting forth suggests that we have a good experience of such qualities (primary) only when our phenomenology and intentionality interact, but indeed if something is amiss in our brain, most probably our perception may not be accurate, but this is something that science may determine, and the experiment that I am using merely makes a suggestion. If the phenomenology would not be normally realized (because of physical brain problems) the representation would be wrong, and the accuracy of the representation of object cannot be determined. I am offering a plausible conceptual framework to determine how our phenomenology is possible in terms of brain states; this means that primary qualities are only revealed by an internal process, so let us suppose that you are seeing something uncolored, if all is fine in the brain, seeing something in black and white does not compromise the accurate representation of the object, because you already have the colour experience of the object, but if the areas associated with colour had never worked properly you may not have the whole representation of the objects. In other words, the experience may not provide the proper boundaries of what you are representing. In other words, you would have an incorrect representation. It is right to say that if some areas of the brain at a given time are not active this will not compromise the perception of the object, but what the argument suggests is that if the areas of the brain related with colour were never be active, you will not properly acquire the experience of colour. Thus, in the case of Mary if she never previously experienced colour the area of her brain related to colour is unlikely to immediately become active.

<sup>71</sup>As was previously explored, there is a linguistic determination to our phenomenology (chapter 4) shaped by cultural and social factors. This is what I refer to by bringing up the history of cognition and evidence. In the case of colour perception this has become evident only in recent times. As Daniel Albright suggests, "areas of the brain responsible for processing language (such as the left

intentional states. Again, let us return to the example of the letters. If motor skills are not exercised, then the relevant areas of the brain related to letter shape identification will not be active, and then, there will be problems in determining what is a letter A and what is a triangle. Likewise, if Mary does not have the correct inputs, the relevant areas of the brain related to colour processing will not be active, so she will not have relevant phenomenology, nor intentionality, and thus will not form the right connection with the objective primary qualities.

Thus, she will not have a correct representation. The knowledge that she has will be determined by its intentionality which will itself be shaped by a phenomenal state realized by the relevant brain states. In other words, according to my view, the knowledge that she gets is the knowledge we gain from the intentionality of consciousness directed upon the primary qualities. Therefore, if shape recognition is determined by the correct phenomenology determined by colour perception (of course such colour information will only be used as a way that determines that a surface of an object to a group of people in the same population will be called 'red' and not 'black'), itself determined by particular areas of the brain that react to the right input of coloured objects that impact our retinas, then the only way to explain what happens in the mind of Mary is by using the conceptual framework developed in this research – and this entails a physicalist picture of the mind.

Thus, empirically, it can be determined that Mary will know something relevant before she sees the real colour of the objects, but if Mary does not have the

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temporoparietal areas) would be activated during color perception" (Albright, 2013, paragraph 1). Let us remember the case of the sound of animals; our linguistic determination will shape the brain in ways that will respond to different sounds, thus, according to my view, this is an example of how we could determine our phenomenology and representation, and this is the role of external factors in our perceptual internal process: our phenomenology is determined by our brain states, and such phenomenology will shape our intentionality, and all of this is internally realized. But, there is a history of cognition and evidence that as agents determines our experiences and representations. Any explanation of the mind that does not take into account these aspects - our brain structure biologically determined, our social history, linguistic factors - will not advance the debate of how the mind can be understood.

correct input she will not activate the relevant brain states, and the relevant phenomenology will be unrealized. Thus the correct representation of colours and shapes will be compromised. Therefore, rather than the case of Mary being an argument against the physical nature of our consciousness, the case of Mary is a good example of how critical our brain states are in determining not just experience but intentionality. Such phenomenology provides Mary with the abilities to recognize and represent correctly colours, shapes and so on. Thus, black and white information would be insufficient to understand the world; if the physical understanding Mary acquired in her room was entirely based on this, it is unsurprising that she learns something new on leaving the room. The individual Mary, whom Jackson imagines, on the other hand, lives in a world of normal colour perceivers, and hence is unable to properly understand the physical understanding of the world which she learns in the black and white room. This is because Mary only has knowledge that is derived from the physical realization of the relevant phenomenology that reveals, via intentionality, the relevant primary qualities concerning the objects of the world that we perceive.

What the example of Mary teaches us, is not just that conscious experience can be explained in physical terms, but also that the relevant physical description of what is going in the brain helps us to understand the complex phenomenal-intentional structure of our minds, and not just in terms of mere correlates – the interconnection of the different areas of the brain will produce different mental states, experiences, emotions, and representation. In other words, our phenomenology could be absent or compromised only if the correct physical inputs do not excite the relevant brain states (or if there is damage in the physical implementation of such brain states). Thus, in the case of Mary, her subjective experience does not appear magically, but is rather the result of a complex brain

process, such that as soon as she is in contact with the correct inputs, the relevant phenomenology will be realized. Extending this reply, if our phenomenology determines shape, a primary quality, it is because such phenomenology is properly realized by the relevant brain states; but the way that we could access such primary qualities is itself revealed by our phenomenology, hence, the neural correlates alone cannot be posited as a successful explanation. Rather, we should try to integrate the different pieces of empirical research within a better conceptual framework to get a better understanding of how the brain and mind works – one which takes proper account of our history of cognition. Of course, a critic may say that I am doing a neural reduction of consciousness to brain states, but that is not the case: there is no reduction. My view rather suggests that the realization of experience depends upon brain states.

Again, it might be objected that we will not know all the relevant facts about the experience. Even if we know all the facts about bats, we never know what it is like to be a bat (Nagel 1974). However, as was discussed previously, science has offered very compelling evidence about how our brains could, and can, if required, use other sources of information to recreate shapes, location and so on. Indeed, echo-localization, which is the way that bats navigate the world, can be used by humans with problems in their visual systems. (Lore Thaler, Stephen R. Arnott, Melvyn A. Goodale (2011) in the article “Neural Correlates of Natural Human Echolocation in Early and Late Blind Echolocation Experts” suggest that “A small number of blind people are adept at echolocating silent objects simply by producing mouth clicks and listening to the returning echoes” (Thaler et al., 2011, p. 15). Although the neural mechanisms of this echo-localization remain unclear, it has been suggested that the area of the brain in charge of that process shows an “activity in auditory cortex as well as in the calcarine sulcus and surrounding



regions of “visual” cortex” (Thaler et al., 2011, p. 20). This form of navigation allows people to be “able to assess the position, size, distance, shape, and material of objects using reflected sound waves” (Kolarik A, Cirstea S, Pardhan S, Moore B, 2014, p. 60) And what kinds of objects are perceived? It can be suggested that, according to my view, shapes, position and so on are given by the intentionality determined by the realization of a phenomenology by a brain state. In other words, the revealing of a primary quality via intentionality by the realization of the experience becomes clearly evident in the case of echo-localization. In this case it seems to be not colour information that is required, but rather identification via a phenomenal realization of a given shape provided by sounds and auditory information. Again, the shape of the object is a primary quality revealed by a phenomenal experience.

The way to integrate all of this information is via the idea that the mind can be understood as a physically realised artefact that displays a phenomenal-intentional structure. This allows for the fact that the empirical findings will clarify how our brain works. In summary, our phenomenology and intentionality have a real physical base, and respond to a physical nature, so empirically, the study of the brain and mind will advance. At present, there is much that remains unknown, but current gaps in our knowledge do not provide a reason for thinking that there can never be a physical explanation for consciousness. I shall return to this last point in answering the next objection.

5.4.3 Objection 3: even if there is empirical evidence for how the brain is related to consciousness, there is still an explanatory gap

Reply: Intuitively it is tempting to say that there will always be a gap in the explanation of any phenomena relating to our human condition, but this does not mean that the idea of an explanatory gap between our consciousness and the brain necessarily implies that they are of a different nature, or that any concrete understanding lies forever beyond our reach. Nonetheless, to provide an explanation of consciousness in terms of brain states is undeniably difficult. The worry is that we might leave something out by explaining consciousness in terms of brain states.

The objection can be divided into two questions. Does science have the resources to reveal the sources of our consciousness or intentionality? And secondly, how can science be understood? I think the question of the problem of the explanatory gap can be answered with the conceptual and empirical grounds that I have explored. However, if the aim is to keep consciousness as an entirely separate property of physical matter, then, the gap will remain and, as a result, our understanding of the physical universe will be over-complicated. This dualistic view is encouraged by the fact that there are currently substantial gaps in our scientific knowledge of the brain. For example, although we know how different areas of the brain are related to our visual process, our imagery, our olfactory and auditory experiences, we know little about how some different areas of the brain interact. Hence the continuing appeals of dualism. However, appealing to arguments of simplicity or to Occam's Razor, alongside the relevant conceptual and empirical framework explored in thesis, all suggest that the sources of consciousness need to be found in the brain itself. But what does this mean?

I believe talk of a gap reveals a misunderstanding of the overall problem. Let me explain. If we see an object, the experience tells us about its shape, colours, and so on. We begin with a phenomenology that will determine – among other things –

the boundaries of what we represent. Thus, if we see an apple, we experience its shape, it has a spherical shape, and we are likely to agree that that is correct, we can trust in this information – you will not experience the apple as a triangular shape, even if you maintain that the apple might have a different red than the one I perceive. In this way, to know something about a given object we must start with our phenomenology; there is no other way to reveal the nature of the object. From this intentionality (phenomenologically determined), we work out our scientific picture of the world based on primary qualities, and as previously explained, this in turn tells us something about secondary qualities. It may, for example, tell us that the surfaces of the objects that we perceive (understood in terms of texture, etc. - primary qualities) are at least for the same people in the same population identified with a common feature – with red in the case of a red apple. This then opens the way for scientific study. In other words, a group of people in that population – if there are not widespread abnormalities – is likely to judge that the apple is red and not purple, but this is based upon the knowledge obtained from the intentionality of the consciousness directed upon primary qualities. Thus, only when the correct phenomenology is realized do we have an intentionality directed upon such objectives and measureable properties of the world (let us remember that I am defending an indirect realist view). Indeed, we can explore the shape of an object by scientific means; but only if this shape is initially revealed to us by a phenomenal state.

However, the explanatory gap is all about the ability of science to explain the secondary qualities, and science cannot explain these properties – and never will; in other words, according to this view, what science has tried to do is to explain secondary qualities in terms of an objective approach based on the scientific understanding of primary qualities. For example, I can determine mass or

acceleration with the tools of science, but using such an approach will not be effective in explaining a secondary quality like colour (understood phenomenally – which I think is the only way we can understand it, as opposed to redefining it), and this is how the gap enters into scene.

At this point a critic might say that how the brain works is one thing but how the mind works is quite different. From some philosophers (Chalmers, 1998) this objection is to be expected, as they are sceptical about whether any relevant information can finally explain our consciousness in physical terms, particularly in terms of the brain activity. Such worries come about in part because these philosophers are still attached to a particular metaphysical framework, to particular ideas about how the mind can be understood and about the role of empirical research. But also because it seems to be evident that the scientific approach to consciousness needs to be taken in terms of primary qualities. For instance, Chalmers suggests that neural correlates of consciousness (NCC for short) can work in the future as a “general theory of the relationship between physical processes and conscious experience” (Chalmers, 1998, p. 35). Note that here Chalmers implicitly suggests a difference between the physical process of the brain and the experience of consciousness, and so he talks only of a mere ‘relation’. But I have to agree that, as here construed; there is no way for this problem to be solved.

However, according to my view this is a misconceived problem. For, by starting first with the phenomenology, science must be based on the intentionality of only the primary qualities revealed by consciousness. Here a critic might say, ‘well that is very good but at the end you have to admit that such secondary qualities and the phenomenal experience that reveals such properties to us (let us remember that such phenomenal properties are what we are aware of) are not part of

scientific investigation – our experience of these properties is something over and above the physics.’ Not so! Let us emphasise that such experiences are realized by the relevant brain states, and this means that the experience responds to a physicalist ontology and to the physical history of what happens inside the head. However, the experience cannot be reduced to anything physical, or to a neural reduction, nor to more fundamental physical properties. The only plausible explanation is to say that they are realized by the brain states. Consequently, in this respect no further explanation should be expected, as soon as we understand that science must be based on the primary qualities revealed by phenomenology via intentionality. I suspect that only reduction would be good enough for these philosophers who continue to object in this way. But if you take seriously non-reductive physicalism, and accept that science and all other understanding begins in phenomenology, then you see that everything which reasonably needs to be explained in this area, already has been.

In other words, the whole world is open to scientific study because of the intentional states determined by our phenomenal ones, and this phenomenology may reveal the primary qualities that can be studied by our scientific understanding: shape, and the properties that the surface of the object may have – like colour, or chemical properties like molecules and so on. That is to say, the explanatory gap, or the hard problem of consciousness, is misconceived because secondary qualities cannot be explained in terms of primary qualities in any stronger way than to say that they are physically realised by certain brain states. Nothing more is needed, once you turn your back on dualism and reductive physicalism. There is no need for eliminativism (which is ridiculous, given that our inquiries begin with phenomenology), and there is no need for epistemic despair or implausible conclusions about the limits of science. Rather, according to my

view, we can scientifically explain the primary qualities that, via our intentionality, as they are revealed by our consciousness; and only in this way can we have a scientific understanding of the world. In other words, via intentionality, via our phenomenology, we move from my internalistic view to the external world, and this is the way that my view projects intentionality onto the external world as opposed to the untenable, externalist-representationalist manner.

But how about the secondary qualities and the conscious experiences that reveal them to us? There is nothing more to say other than that our phenomenal properties are realized by the relevant brain states. Thus, non-reductive physicalism works as a reliable metaphysical base to determine the nature of our minds, and this nature, the phenomenal-intentional structure of our minds, will provide the sources for an objective picture of the world that can be studied by science.

That is to say, the question of how the neural substrates give rise to our phenomenal experiences is a mistaken view of the consciousness problem, and will not be solved. It is not the case that the primary qualities will expose the nature of the secondary qualities and thus reveal the nature of consciousness. Rather, what we must determine is how our phenomenal experience reveals via intentionality the primary qualities that science can explain; and from this intentionality, we can work out our scientific picture of the world.

I have not attempted to solve directly the problem of consciousness because I think attempting to do so, or despairing of our ability to do so, is the primary mistake in contemporary philosophy of consciousness. My view suggests that this problem is fundamentally and significantly misconceived<sup>72</sup>. I have tried to clarify

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<sup>72</sup> In some sense, I am not pursuing a reformulation. In my view, the problem has been misunderstood, because the emphasis has been on explaining subjective properties in terms of

some issues, particularly concerning the physical nature of our minds. I have argued that this is how our minds need to be understood; more specifically, in terms of a phenomenal-intentional structure, and that such structure is realized by the relevant brain states. I have explored some of the empirical arguments that support my conceptual claims and others that suggest where to look for the source of our experiences. Although there is still much research to do, I believe that the path I have here indicated offers the best hope for understanding the nature of mind, and this understanding in scientific terms is all about the primary qualities revealed by our phenomenal-intentional experience.

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objective properties, but my thesis is not trying simply to reduce primary qualities to secondary qualities. Rather, my thesis argues for an independence in the realization of the secondary qualities, and argues in favor of a discovery of the primary qualities. That is to say, in my account, the phenomenal experience is not reduced, it is realized, and, in the process of realization, the primary qualities in the external world are revealed by means of intentionality. The role of the phenomenal character of experience is to discover and understand the external world, putting boundaries to our representation; for that reason, even if there is a close relation between the phenomenal character of experience and intentionality and both are internally realized the question of reduction does not arise. The new understanding of the so-called hard problem of consciousness that I propose depends upon the idea of a clear distinction between secondary and primary qualities and the different roles they play, but such roles are not bound to the idea of reduction, but to the larger idea of revelation (clarification).

## Chapter 6

### Conclusions

'Bodies devoid of mind are statues in the market place.'

(from *Electra*, 386) - Euripides (484-406 B.C.)

#### 6.1 Introduction

We are in 2017, and yet the philosophical and scientific discussion about the mind oscillates between two antagonistic and untenable positions: dualism and eliminativism. On the one hand, dualism persists in the idea that consciousness is something over and above the physical. On the other hand, eliminativism dismisses phenomenal consciousness and intentionality: the two fundamental features of mind. This panorama is the result of the way that mind was understood in the early- to mid- 20<sup>th</sup> Century, when the mainstream position was a reductive approach (§1.4, §3.5). Indeed with the views of Place (1956) and Smart (1959), the idea that consciousness could be understood in terms of processes of the brain became a very compelling view for tackling dualist intuition. However, as Putnam (1967) showed, this approach was too problematic (§3.6.1); so the reductive approach to the mind became dubious. This resulted in a kind of scepticism about the power of explanation of reductive approaches, and as an unwarranted result, scepticism that any physical explanation of the mind may be able to generate the relevant explanations took hold. So dualism made a



comeback – explicitly, in for example the work of P.F Strawson (§3.3), but also implicitly. For one of the main consequences of the failing of the identity theory of the 1950s (§3.6.1, §3.6.2), was either the conclusion that physicalism was not true, or else that there was a hard problem that science could not yet solve, or would never solve. This message is evident in the words of Nagel (1974) or Levine (1980), who suggest a principled reason that our consciousness experience as a subjective property will not be able to be explored by the objective approaches of science. Hence, as Levine (1980) suggests, there is an explanatory gap between our phenomenology and the relevant scientific explanations (§2.4.1).

And yet, this was a step backwards, because physicalism allows philosophy and science to work hand in hand to discover more and more about the mind. In this panorama it is not surprising to find the rise of the another position, eliminativism. Elimintativists are physicalists, so they want to dismiss dualism, but they found the only possible way to do that was to dismiss fundamental features of the mind (§1.4), like the phenomenal character of experience (Dennett, 1990). That is to say, they advance the view that mind is just an illusion; since they insist, as Churchland (1997) does, that we posit all the faith in reductive explanation and despair of reducing the mind. However, such positions are not only completely implausible, but prevent science and philosophy from drawing on the main, original source for understanding the mind: phenomenology (§5.4). As has been explored in this research, for a metaphysical position to explain how the mind works in physical terms it is required to reject reductionism (§3.6). It has also been argued in this thesis that to investigate the mind the departure point must be the phenomenology (§5.4). This lets us understand the relevance of scientific discoveries about brain states, for the intentionality of our phenomenal states tells

us which parts of the external world our brain states are caused by, and provides insight into how our scientific understanding of the world is built up. There is only a hard problem – as Chalmers thinks there is – under the view that physicalism must be reductionist. In other words, the problem is only 'hard' for reductionism. Likewise, there is only a reason to think consciousness is an illusion under the view that physicalism must be reductionist, because consciousness cannot be reduced.

## 6.2 The problem of reductive approaches

The reductive approach became quite appealing. However, as has been explained (§1.4.2, §3.4), it is completely untenable. And yet, this reductive approach – as we have seen (§3.5) – was the intuitive answer to dualism. The popular views of Descartes about the mind-body relation, even though problematic, inspired a new generation of philosophers like P.F. Strawson to explore dualism. Indeed, Strawson proposed a kind of dualism called property dualism (§3.3). Under such a view, basically, the mind is attached to a physical base, but still something over and above it. This view may be considered as a very attractive position to those who do not want the radical Cartesian division between substances, but who want to hold a kind of connection between the mind and the physical body, while remaining sceptical about a physical explanation of consciousness. However, such views are still problematic because of the same reason the views of Descartes are: for how can two such aspects interact? Having this formidable problem to dualism, and with the idea that we must look for a physicalist explanation about the mind, then, physicalism appears under the views of Place and Smart to be a quite intuitive position (§3.4, §3.5). However, even with the major problems facing such physicalist positions, it is clear, that physicalism must be the path to take. As compared to dualism, physicalism is not an intuitively inviting position. Nonetheless, the completeness of physics (§3.4.1) gives us an extremely strong argument to defend a physicalist picture of the mind. As formulated by Papineau, the idea is that “[a]ll physical effects are fully determined by law by prior physical occurrences” (Papineau, 2001, p. 8). Thus, one of the

consequences of the completeness of physics is that it simply does not leave “room” for dualism (Papineau, 2001, p. 8).

However, as was explained before, this physicalist view entails a serious problem: how is consciousness to be explained? A very intuitive path is to think that there must be a reductive way to explain the mind. Thus, Place appeals to the idea of the ‘phenomenal fallacy’ (§3.5) and Smart suggests we wait for an empirical identification of consciousness with processes in the brain (§3.5). However, the problem was precisely the terms of such identification. That is to say, that it is possible to hold the idea that the property of pain is the same property as C-fibers firing, for example. However, such a view entails a fatal assumption: a reductive approach. This identity theory was too narrow, and as Putnam (1967) suggests, other creatures with a different brain architecture may have mental states as well (§3.6). Thus, the idea of the reductive approach was challenged by another more powerful concept: the idea of multiple realization. This is the view that different kinds of brain may realize mental states, and so the exact nature of the physical base does not matter. This view leads to another concept which better advances our understanding of our mental states – that it would be better to comprehend the mind in terms of functional states (§3.7). Thus, what matters rather than the physical base, is the function that the state realizes based on the inputs, outputs and state relations.

This view inspired Fodor (1974) to appeal to the view that even if the mental states can be physically understood, they cannot be reduced to more fundamental physical properties (§3.6). That is to say, Fodor suggests the idea that reduction is problematic and cannot be a way to deal with our mental states; according to Fodor, there are special sciences that have another taxonomy. That is, in the words of Fodor, “... it is not further required that the taxonomies which the special

sciences employ must themselves reduce to the taxonomy of physics” (Fodor, 2002, p. 134). In other words, special sciences do not depend upon reductive generalizations because there are not one-to-one relations between neurological properties and psychological properties (Fodor, 1974, p.130). Moreover, the latter are multiply realizable. Thus, a reductive approach became not only problematic in terms of its need for identity between consciousness and processes in the brain, but in terms of how to deal with special sciences for those sciences may use other taxonomies, and cannot be expected to be reducible to the more fundamental truths of physics.

Within this panorama, the problem of a reductive approach became clear. However, even though functionalism and multiple realization was an improvement, the position as formulated by Putnam (1967) was not enough to point out the problems of dualism. For as Putnam himself suggested, the mental is not physical; it is just an “abstract property” (Putnam, 1975, p. xviii). This failure to endorse physicalism was a mistake. As he said: “[i]n particular, the functional-state hypothesis is not incompatible with dualism!” (Putnam, 1967, p. 436) (§3.7) Thus, even in an explanation like functionalism, dualism is still in the air as a possible explanation. It should not have been.

### 6.2.1 Functionalism as a physicalist position

Thus, in order to have a better physicalist picture of the mind, the way to deal with functionalism was to understand the mental states in terms of brain states. This was the task that Lewis (1972) and Armstrong (1980) suggest (§3.7.2). In this way, a proper physicalist explanation of the mind will be secure, in functional terms, and avoiding the problems of the identity theory. For instance, Armstrong suggests that, “mental states” can be identified with “physical states of the brain” by defining what “mental concepts” are (Armstrong, 1981, p.82). In other words, he proposes a “[c]ausal analysis of mental concepts” (Armstrong, 1981, p. 82) as a departure point to determine what plays the role of a mental state. But how are these states to be understood? David Lewis suggests that it is “folk psychology that gives us the roles that characterize the mental states” (Schwarz, 2015, p. 504). Thus, the solution that Lewis offers (§3.7.3) is to determine causal or functional roles for a population: “We may say that some state occupies a causal role for a population” (Lewis, 1980, p. 231). In other words, in particular humans, pain is identified with a particular brain state. In a Martian it is associated with whatever physical state plays the role of pain: in this way, a functionalist account can explain, in principle, mental states in terms of physical states. According to Lewis, “[h]uman pain is the state that occupies the role of pain for humans. Martian pain is the state that occupies the same role for Martians” (Lewis, 1980, p. 231)

This guarantees a kind of multiple realizability in terms of the causal roles of a given population, whilst retaining a particular 'physical realizer', that allows for the identification of a functional state with a mental state.

Thus, the idea that the mind can be effectively understood in reductive terms is unnecessary. Rather, a broader view is to appeal to the idea of how such multiple realization allows mental states to appear based on different physical substrates. This is the core view of non-reductive physicalism (§3.6). There is indeed a physical history to tell, but not in term of reduction, which would remove the phenomenal aspects of mentality.

### 6.3 Representationalism

Reductionism presented the apparent view of an unsolvable problem to deal with about consciousness for physicalists (§5.2.1) (consciousness's 'hard problem', the 'explanatory gap'), and yet, many philosophers persisted in looking for a way to understand consciousness in physical terms. Many took an indirect route with the idea that it can be put aside if it can be explained in term of another mental property: intentionality. The major problem to explain the mind –consciousness – would then be solved (§2.3). In other words, since reductionism made explaining consciousness impossible for physicalists, some gave up on physicalism – or rendered it deeply problematic (Nagel 1974, Chalmers, 1996) (§2.4, §5.1) – and some gave up on consciousness (Dennett, 1990 Rorty, 1979) (§1.4, §5.4.1). But the physicalists who were sensible enough not to embrace eliminativism or dualism, found a new path: they put consciousness to one side, and looked at intentionality (§2.3). This led to the externalist representationalism program – the idea being that with a physicalist account of intentionality which placed the contents of mind in the external world, it would then be possible to explain consciousness in the same way. However, this was to give up on sound internalist insights from the history of philosophy, which were only ever abandoned because of outdated epistemological worries about scepticism. And yet science now increasingly supports internalism, in fact (§4.2).



### 6.3.1 The place of phenomenal experience within representationalism

Thus, it was thought that a way to explain the phenomenal character of experience was to put it in terms of intentionality, and the view of intentionality that took the mainstream position in philosophy was based on the view that it is somehow susceptible to scientific explanation, as long as it is put in the external world, where primary qualities can easily be explained (§2.2). That is to say, intentionality has been more amenable with a scientific explanation than consciousness, hence, the idea that by naturalizing intentionality, consciousness will be explained in at least some relevant physical aspect. This is the core idea of representationalism (§2.2, §2.3). For instance, Tye argues that “Representationalism is a thesis about the phenomenal character of experiences” (Tye, 2000, p. 45). It is a thesis that argues that intentionality and phenomenal properties are very closely related, and not two independent aspects of mind. But how are such properties related under representationalism? Tye (2000) claims that “experiences that are alike in their representational contents are alike in their phenomenal character” (Tye, 2000, p. 45) (§2.2); in other words, the phenomenal character is determined by its representational content; and since this representational content is externally determined, this view is highly externalist; that is to say, the qualities of experience were put back in the external world, where brain states track the relevant features and thereby constitute

representations of them – through “causal co-variation” (Tye, 1995, p. 105) or evolutionary history (Dretske, 1995) (§2.2, §2.3). Indeed, the views of Tye and Dretske entail a certain relation between consciousness and intentionality, but as has been argued, such a relation is ultimately configured in terms of plain external factors. Anything of the mind, under this view, must be outside the head. In other words, according to Tye, phenomenal character can be explained in terms of representation: “phenomenal character (or what it is like) is one and the same as a certain sort of intentional content” (Tye, 1995, p. 137).

For example, when we look at a red apple in good light – or optimal conditions – then our visual experience relates us to the apple, and the colour of the apple itself is what constitutes the representational content (§2.2). Thus, the phenomenal character of the experience of the red apple (its redness) is present only in virtue of the external property (due to the transparency of experience argument). Hence, such external properties carry the phenomenal character of looking red. According to Tye, the “what it is like” aspects of phenomenal states “are second-order, broadly physical properties that are realized by objective, first-order, physical properties of those states.” (Tye, 1995, p. 164) And it is this explanation that renders representationalism compatible with physicalism. That is to say, if the brain state appropriately tracks the redness of the apple then the phenomenal aspect is realised, and therefore it can be said that representationalism, under Tye’s view, explains physically and metaphysically the conscious experience through a direct relation with the world (§2.2). And this is what has made representationalism so popular – the possibility of securing a physical explanation of consciousness. However, such a direct connection with the world is too problematic (§2.7).

### 6.3.2 The problem of representationalism

The problem is how can such a direct connection with the world secure an explanation of our conscious experience? How is it that our mental states can be determined in such a direct connection?

To start with, the main argument to support such views is the so-called argument of transparency (Harman, 1990) (§2.6). This is one of the departing points of Tye to defend his representational views. In introspecting a visual experience of an object, Tye suggests that “your awareness of phenomenal character is not the direct awareness of a quality of your experience” (Tye, 1995, p. 47), (§2.2). Thus, via introspection, “you are directly aware of a range of qualities that you experience as being qualities of surfaces at varying distances away... By being aware of the external qualities, you are aware of what it is like for you.” (Tye, 1995, p. 47) In other words, what you experience will be determined by a direct contact with the object (§2.6). For example, the redness of the apple that you may introspect, is just the physical red of the apple – a property that you experience directly as a result of the objective properties of the object and the representation that causally connects you to it. Thus, the phenomenal character of experience is determined by the objective properties of the object. In other words, according to Harman and the views of Tye, there is no such a property of experience that we

are aware of in our introspective observation. This argument of transparency became one of the core tenets of representationalism (§2.3, 2.6).

However, as was explored in section §2.7, this argument of transparency leads to some major problems with representationalism. For if according to representationalism the qualities we are aware of in perception are real properties of external objects, how can events like dreams or hallucinations be explained in such terms? For instance, if you are seeing an object, let us say a circle (it could be a spherical shape, like the one of the apple), the shape that you experience exists in the external world, and redness and roundness are properties of this object (an apple in this case) – shape, colours and so on. In hallucination, however, we are also aware of sensory qualities, but there need not be an external object with such qualities. If you have a hallucination of an apple, there need not be an apple before you, and yet, Tye thinks this does not matter, because you can still be in a brain state that typically co-varies with the properties of the apple (its shape and colour); and this brain state will realise the phenomenology. However, if that is the case, it is hard to see how the co-variation account makes any difference to the metaphysics of the situation (§2.7.1). For so long as the brain state exists, then even if we close our eyes we will still be seeing the object (§5.4), in the sense that there will be the appropriate phenomenology. So it looks like phenomenal contents cannot be external world objects after all, but rather objects realised by the brain state. Moreover, by appeal to a brain in a vat scenario, it could be the case that a brain in a vat, instead of representing the red surface of a tomato in a direct connection with the world, is representing a computer input. And yet, the brain can still represent the computer input as red, just as it could represent a tomato as red. So the same ‘what it is like’ aspects of phenomenal states could be realised by the brain in a normal person’s head

(looking at a tomato) and by a brain in a vat. This is because we know what the experience is like by introspection and by applying the phenomenal concept *red* (Tye, 1995, p.167) (§2.4, 2.5); and the brain in a vat can do this too. So since Tye says it could be the same for us and the brain in a vat, the same phenomenal concept *red* must be applicable to my brain state (which realises a representation of the tomato as red) and the brain in a vat's brain state (which realises a representation of the computer input as red, i.e. the brain state realises a state which represents the computer input as being red). But in that case, it seems that the part of the external world which the brain state is co-varying with (and hence is representing) is irrelevant to the phenomenal quality of the experience. For in one case it is co-varying with a tomato, and in the other, it is co-varying with a computer input. And the tomato and the computer are not physically alike. All those problems suggest that there is not necessarily a direct connection with the world. Therefore, on the one hand, the tenet idea of representationalism cannot be correct. And on the other hand, it is the case that internally, through the relevant brain states, a phenomenology must be realized, and so explaining consciousness in terms of an externalist view of intentionality cannot be correct. This in turn suggests that we are required to look for another kind of relation between phenomenal experience and intentionality, a relation that properly determines the internal nature of the experience – realized by the relevant brain states – and then to ask how such phenomenal experience will in turn determine intentionality. But this new exploration needs to be done in physical terms, of course. Those brain in a vat scenarios work for exploring this situation at a conceptual level, but to get a stronger case we must explore empirical findings, that support indeed the idea that our connection with the world is not like the one externalist representationalists provide (§4.1, 5.4).

#### 6.4 Non-reductive physicalism as metaphysics of consciousness

The case that has been explored in this thesis favours a view based on non-reductive physicalism. The views of Putnam (1967) and Fodor (1974) strongly suggest that this non-reductive approach is strong enough to support a robust metaphysics of consciousness (§3.6.1, §3.6.2), and to allow a better understanding of the relation between consciousness and intentionality. For instance, according to Fodor, everything is physical. That is to say “the claim that all events the sciences talk about are physical events” (Fodor, 1974, p.127), but there is no need of reduction. Moreover, the taxonomies of physics are not the same as the taxonomies of the special sciences. This is a core tenet of non-reductive physicalism. Furthermore, Fodor suggests, “...that any event which falls within the universe of discourse of a special science will also fall within the universe of a discourse of physics” (Fodor, 1974, p. 128).

With this view, there is no need to dismiss the phenomenal character of experience, or to defend the idea that it is an illusion. Rather, we have a way to deal with consciousness in a very internal way, realized by brain states (§3.7), and not necessarily as a result of the brain states tracking the relevant feature in the environment, as representationalism claims (§2.7). Moreover, internalist non-reductive physicalism allows a better understanding of intentionality as well (§4.3.2): as being determined or realized by the relevant brain state. As such, the

case of the phenomenal character of experience and intentionality, as properties realized by brain states, and in accordance with the completeness of physics, secures a physicalist picture of the mind in terms of a phenomenal-intentional structure, whilst avoiding the problem of reductionism and the problems of externalist representationalism as a direct connection with the world. Thus, within the scope of non-reductive physicalism, our mental states are only realized by brain states; no more explanation than that is expected, metaphysically. That is to say, it is not required to wait for a more fundamental truth of physics to be discovered. As such, the consciousness hard problem or the explanatory gap can be explored in another direction (§5.4).

## 6.5 The indirect realist view: our phenomenal connection with the world

With non-reductive physicalism as our metaphysical backdrop, we can explore the productive idea that there is a phenomenal character to intentionality. This involves embracing, once more, indirect realism (§4.2) – and seeing that the standard objections to it are weak (§4.2.2, §4.2.5). But, if our phenomenal experience is not the result of a direct contact with the world, what determines the content of the experience, and what are the objects of experience? I favour the view that we do not experience the objects directly, only via the phenomenal experience. That is to say, the phenomenal experience is produced by perceiving the objects in a certain way, and the awareness of the objects is a product of the awareness of the phenomenal experience – the former indirect, the latter direct. This is a form of indirect realism or “representative theory of perception” (Maund, 2003, p. 6) (§4.2.1).

The findings of empirical research offer us a very attractive explanation to support this view of indirect realism – for example, research into how images are formed in the retina and how the information is sent by the relevant structures in the retina to the brain (Purves et al. 2004, pp 229-282). It should be mentioned that the image in the retina appears inverted and it is by means of the relevant brain processes that we perceive the image in the right position. In this respect, Bokkon et al. (2013) suggest that there is an “intrinsic biophysical virtual visual reality” (Bokkon



et al., 2013, p. 4) (§4.2.1). This empirical information strongly suggests that effectively what we perceive is the result of the neural process, and so can be understood in terms of our brain states. In other words, what we perceive directly and hence what we are immediately aware of is generated by such neural processes. *This* is the phenomenal character of experience, in my view. Likewise, other empirical research seems to support this idea. There are empirical findings that generate some doubts about the idea of the direct perception of physical objects. For instance, John Smythies (2005) (§4.2.1) suggests that if some data is absent (that is, some relevant external stimuli) of what the brain is supposed to see, the brain itself “fills the blanks with [hallucinatory] sensations” (Smythies, 2005, p. 18). This line of research strongly suggests that the experience is more the result of an internal process. In other words, as Smythies and Ramachandran suggest: “The Representative Theory states that we do not see what actually is out there but what the brain computes is most probably out there” (J. R. Smythies and V. S. Ramachandran, 2008, p. 438); and that is what we are aware of and how we know the objects that we perceive.

And yet, according to the externalist representationalist view, in introspective observation, you will not find any relevant phenomenal property only the “observable physical surfaces” represented (Tye, 2000, p. 46) (§2.7, §4.2.2). However, the objections I have made to this view show that this interpretation is untenable. Thus, the idea that brain states track and thereby represent only the features of the external objects is debatable (§4.2.3, §4.2.5). For instance, this case is illustrated with blurry images (§4.3). I used that example to determine that representationalism must be the wrong explanation of phenomenology. The phenomenology must be intrinsic properties realized by the relevant brain states,

and the fact that we naturally interpret this, in ordinary life, as features of the external object (the transparency intuition) is perfectly compatible with this.

A further observation is relevant at this point. If the experience is not constitutively dependent upon objects of the world, how is it that the experience connects us with the external world? As I mentioned before (§4.1), the external world is part of the causal chain that causes the brain state, and this brain state realizes the experience. This does not necessarily require commitment to an inner object in the sense-data style. We are aware of the phenomenal experience and then indirectly aware of the external world (if there is any real object causing the relevant brain state – for it might be a hallucinatory experience or awareness of a merely apparent object like an unicorn). Non-reductive physicalism need only claim that brain states realize the relevant phenomenal experience, and direct awareness of this experience is direct awareness of these second-order properties; it is a kind of self-awareness these brain states have of themselves, albeit not of their microphysical properties but rather of macro-physical properties which their microphysical properties realise (§4.2.3).

However, the idea that there are mental images, or sense-data, or phenomenal properties that we are aware of in our perception of an object, is seen by some philosophers as highly problematic; some philosophers may think that these ‘entities’ lead to scepticism (§4.2, §4.8). But this is irrelevant according to the view that I am defending – perhaps we are brains in vats, but since we have no positive reasons to think we are, this possibility can be dismissed. The critic may propose a different way to “avoid intermediaries” in the perception of the object, an approach that suggests that we are not aware of the experience, rather there are

only “ways of sensing and perceiving” (McGilvray, 2001, p. 258). In other words, under this position (adverbialism) (§4.2.4), there is not any ‘mental entity’ by which we see the objects of perception. This view was championed by Chisholm (1957). According to Maund, since there are not “sensory qualities to serve as the ‘object of awareness’” (Maund, 2003, p. 196), the adverbialist view will hold that there are some physical features that appears ‘red-ly’ to you, if you are seeing a red tomato for example. Accordingly, Audi suggests that, “to perceive an object is for that object (in a certain way) to produce in one a sensory experience of it to cause one’s experiencing it in a certain qualitative way” (Audi, 1998, p. 39). In this way, according to adverbialism, objects are seen directly; and this is what makes adverbialism compatible “with a direct realist view” (Audi, 1998, p. 39). But the same problems with hallucinations need to be explained by an adverbial view, thus, it is just another account that tries to determine our experience in terms of a direct connection with the world and as such is highly problematic, as was explored in meeting the objections to the indirect realist view before (§4.2.5)

### 6.5.1 The phenomenal structure of intentionality

In my view any position of the mind that entails a separation with the physical is a dead-end. However because externalist representationalism seems unsatisfactory as an approach to combining intentionality with physicalism, I explored the alternative idea that intentionality, like consciousness, is realized by the relevant brain state. In other words, if a physicalist ontology, particularly via non-reductive physicalism, can be applied to consciousness, then this treatment of consciousness may also thereby be applied to intentionality (§4.3.2). It seems to me that this is a more profitable approach to intentionality, rather than positing the relevant content of intentionality in external objects, determined by tracking relations (as advocated by Tye) (§2.2).

But how does this approach to intentionality need to be understood? As was claimed in the previous section (§4.1), we can assume that in the same way that the brain fills in the missing information of the events of the world (Smythies, 2005), the brain will predict what could be found in the external world, and this prediction in my view is a potentially representational one, that will be based on the phenomenal character of experience. Why? Well, because as I have claimed, if we are not in direct contact with the objects, but only via the awareness of our experience (§4.2), then, we can predict, via this awareness realized by the brain state that also realizes the intentional state, what objects are to be found in the external world. Hence we can represent the world via phenomenal aspects (§4.5).

There is empirical research that supports my view (§4.5). For instance, Jocelyn Duffy explains in a press release, based on a research done by Diego E. Pafundo et al., that with regard to the neural bases of visual illusions: “some of the information coming from the visual cortex is not a direct response to a visual stimuli, but is a response to how the stimuli was perceived by higher cortical areas” (Duffy, 2016). In other words, this research suggests that some of the mental content realized by the brain states cannot be given by the objective properties of the physical objects that exist in the external world. This finding provides good evidence for my previous claim (§4.2) about how we are aware of the objects of the world: by the phenomenal experience realized by the relevant brain state. But, how will this determine intentionality? The simple answer is that once the brain state has determined the phenomenology appropriate to experiencing an object – an apple, for instance – then that phenomenology is intentionally directed upon an apple. If an apple caused the brain state appropriately, then we may say that the brain state represents the apple. If it did not – perhaps there is no apple – then we will not say this. But nevertheless the intentionality – the directedness – is a mental phenomenon. It is part of the experience; an experience realised by a brain state. Intentionality is not a matter of the relationship between the brain state and the apple (if there is one), but rather a feature of the mental phenomenon which may or may not indicate the relationship between the brain state and the apple. This relationship may be representational; but phenomenal intentionality is not the same as representation (§4.5.1).

A critic might dispute the idea that phenomenal experience shapes intentionality, but their motivation is bound to be desire for a direct connection with the world, and such convictions have been replied to successfully. The externalist

representationalist does have an alternative explanation to connect intentionality and the phenomenal. They argue that if optimal conditions are met, then the representational content is determined by the physical properties of the objects, and because such content carries information about the external physical objects, then, by tracking relations between brain states and the environment, the intentional content and therefore phenomenal content are explained (§2.2). However, as has been argued (§2.7;§4.2.3), this is implausible.

As an alternative I explored further the view that the aboutness is shaped by the phenomenal (§4.5.1). For example, if you already have the experience of the object, that is to say, its qualities like taste, texture, colour, smell and so on, you can easily represent the object in the correct way. For instance, if you have the experience of an apple, you can represent correctly an apple and not misrepresent it as a pomegranate. If so, then your belief is about apples, and hence the representation will be accurate. But such representation begins in the mental directedness, or intentionality, by which experience tells us what we seem to be representing. In other words, the experience would help you to have the correct representation and discriminate in such a way as to determine our behaviour. In this sense, the phenomenal qualities cannot be divorced from the subjective character, as Kriegel suggests (Kriegel, 2011, p. 86)(§4.8).

Now, how can experience play such a role? The brain states that realize the phenomenal experience will depend upon the particular history of cognition and evidence of an agent (§4.5.1; §4.6), and this history is determined by linguistic, cultural, social factors and so on; for that reason, if the experience shapes the intentional state, it is not right to suggest, as Kriegel did, that only the content of beliefs are what determines what things really are. Rather, what determines the

accuracy of our representations is the phenomenal experience, given by – to borrow a term from Lewis – “a history of evidence” (Lewis, 1974, p.336) (§4.8).

Thus, as soon you have an experience, your phenomenology comes into play to present the relevant properties that will determine what the correct representation is (§4.7). Your experience tells you that you have mistaken one thing for another, for example. This is the kind of role that experience plays in a theory of intentionality. Without experience, misrepresentation would be a very commonplace state of affairs. Once you are confronted with the object, the brain state realizes the phenomenology determined by relevant information that is part of your history of cognition and evidence; thus the relation between consciousness and intentionality is established. This means also that the only source of intentionality is determined by our phenomenology. If this view is correct, it entails that the only intentionality is the original one, that is to say, the idea of derived intentionality is wrong. (§4.7) In other words, there is only one intentionality, the one realized by brain states, and shaped by experience.

That is to say, only by understanding the context in which words are written or an artefacts created, can a correct representation be made (§4.7). Once our thoughts are put it into the external world, and are like any other object, they can constitute representation, if and only if there is an agent to make representational sense of it. Thus, the idea of derived intentionality seems to be an unnecessary complication to the idea of intentionality. Furthermore, with the account of the experience and intentionality that I have defended, a physicalist framework is already secure. Hence, it is my view that derived intentionality is no more than a myth: representation occurs by virtue of the phenomenal structure of intentionality. The process is that you think of some properties of, say, an apple, then you write or create something about the apple. If another agent reads those words or sees that

artefact, that agent may or may not recreate your original thoughts, or similar ones. That will depend upon the history of cognition of that agent. At the end of the process, there is only an intrinsically intentional state shaped by a phenomenology. The eventual artefact is like any other object that can be experienced and which can represent an external state of affairs because of how we interpret it.

However, not all philosophers agree with this view (§4.7). A clear example is Dennett; he argues that all intentionality is derived (Dennett, 1996, p. 53). Dennett's aim is to explain the mind physically, and crucial to this is to get a physical account of intentionality; since he denies the phenomenal. Thus Dennett wants to explain the brain in evolutionary terms, including how all the parts of the brain contribute to the whole system. It is by this means that Dennett thinks intentionality might best be understood. Dennett says that at bottom, the intentionality of such parts, and hence our intentionality, is derived from the intentions of 'Mother Nature' (Dennett, 1996, p. 53). In other words, it is from the 'intentions' of evolution, according to Dennett, that intentionality is derived. (§4.7)

However, Dennett's views on intentionality ultimately do not succeed. I agree with Dennett that the brain is a physical artefact and as such, our understanding of mind must defer to this fact. But contrary to Dennett, such an artefact is responsible for our mental states; our brain states realize such mental states, and, with an argument like the completeness of physics, the physical ontology to determine the nature of mental states can be accounted for. Elimination is unnecessary, and with it, intentionality can no longer be understood. There is also a lot of research in neuroscience that may help to determine the physical nature of consciousness, and some of the same findings that determine the inner processes



in turn offer a plausible account to explain how our phenomenology is realized by the processes of the brain (§4.2). Only in this way can we understand intentionality. Thus, the indirect realist view of perception seems to be right as a departure point to explain our perception, and hence much of our phenomenology and intentional content. However, there are some internalistic views of intentionality that ultimately are representationalist in spirit, and as such did not succeed in explaining satisfactorily intentionality based on phenomenology. That is the case of Uriah Kriegel, in his attempts to explain the experiential sources of intentionality (§ 4.8).

### 6.5.2 Kriegel's intentionality: the phenomenal-intentionality tracking approach.

Kriegel is not interested in determining what is more basic – experience or intentionality – rather, he is interested in securing a naturalized framework of intentionality based on tracking relations, with a view of how experience is internally realized. In his view, this will explain how an experiential property is able to track a representational property (§4.8). He is also interested in determining the primacy of the original over the derived, or, in his words, the “primacy of experiential-intentional over the non-experiential intentional” (Kriegel, 2001, p. 45). The former is what can be called original intentionality and the latter is what can be called derived intentionality (derived from experiential-intentional states). However, the overall views of Kriegel seem to me incorrect. At the root of the whole system there is a representational basis (§4.8.2). Hence, the phenomenal experience that Kriegel has in mind is ultimately a property of the external object – as representationalism claims – whose subjective character is internally realized. As such, the views of Kriegel are rooted in the idea of direct experiential contact with the world.

There are also problems with the way that he puts experience at the centre of his theory of intentionality. As Kriegel himself asserts, his theory could be “developed as externalist as well” (Kriegel, 2011, p. 249) (§4.8.2). However, whilst also a materialist, my own views are rooted in a more essentially internalistic view, and rely on the physical realization of the experience by brain states. My views have the advantage that the phenomenal experience does not depend upon representational content, rather it is the representational content that is shaped by the phenomenal character of the experience. This phenomenal character as a

whole, contrary to Kriegel, is realized by brain states, grounded in a metaphysics of non-reductive physicalism and explainable in terms of indirect realism about perceptions (§4.2). So my views are at their foundation completely different from Kriegel's. Furthermore, my conclusion entails a new discussion not just of intentionality in a more internalistic manner, but also a discussion of the hard problem of consciousness (§5.4).

But with this understanding of consciousness and intentionality, what sense can we make of the consciousness's hard problem or the explanatory gap? From the times of Descartes and Galileo science has changed. There is no more room for Aristotelian causes, and there has been more and more empirical data available to understand the universe, a universe that was conceived like a mechanical device (§1.4, §2.2, §3.2), and with some laws that may govern it. Thus, the discovery of such laws became the task of science – laws governing everything but the mind. Since Descartes' time, the mind somehow was understood as something separated from the physical universe: if it would be explained, it must be under another kind of metaphysics. Thus, an option was to suggest, as Descartes did, that the mind is a separate substance from the physical substance; the problem was then to understand how both substances interact (§3.2). Today, the problem has not been resolved (§2.4, 3.8, §5.2.1). However, as Descartes' dualism has become untenable, other forms of dualism offered the idea that consciousness is attached to the physical but still distinct, as P.F. Strawson suggests (§3.3). But ultimately the mind is still not physical on this view, which brings conflict with the completeness of physics.

For physicalists, the problem became how to understand how millions and millions of neurons interact in the brain in such way that they finally may produce

consciousness. To answer this, panpsychists, who often see their view as compatible with physicalism, suggest that everything has experience (§5.3). As such, under this view, the problem of how consciousness arises seems to be solved. But such solutions are dubious (§5.3). The reductionist view that the millions of neurons *are* consciousness is untenable. And the eliminativist simply places their head (without a mind) in the sand, in order to pretend that there is no problem! The sensible approach is that of the non-reductivist physicalist. But what can they say about the hard problem?

## 6.6 The role of our phenomenology: the hard problem of consciousness

With this understanding of the intentional structure of phenomenology in place, as well as a non-reductive physicalist framework, we can now approach the problems of mind by starting with the phenomenology. We can now see how the intentionality of phenomenal experience reveals primary qualities, how these can be relevant to secondary qualities, and how research on the brain can thereby tell us about consciousness – and how we built up a physical conception of the world in the first place.

To understand how consciousness works, is not to determine which physical properties let consciousness arise from the grey soggy matter (§3.8.1). Rather, it is to understand how consciousness shapes our representation of the world; in other words, how consciousness and intentionality are connected (§4.5). However, if you want to determine how such grey matter produces consciousness, you have to determine how intentionality is produced as well, and by the same grey matter, and to some philosophers this problem cannot be solved. It is for this reason that externalist representationalism has become a popular view, for it offers the illusion of an understanding of consciousness in terms of intentionality by external means. But this will not completely destroy the hopes of those who claim that consciousness represents a hard problem. Why? Well it is simple. If, as according to externalist representationalism, intentionality can be externally determined, then, intentionality appears like a more tractable problem, and the idea was to understand consciousness in term of intentionality. This had the apparent advantage of divorcing phenomenology from the head, making problems like the explanatory gap become an illusion. However, consciousness needs to be

put where it belongs: inside the head (§4.3.2). Hence so does intentionality. Since both philosophy and science point to this internalism, the proposal cannot work.

Although the idea that intentionality can be explained or explored from such an internalist perspective has not been totally developed, I have argued that this position offers the best way to explain not just intentionality but also consciousness. It is the key to understanding the hard problem of consciousness. Without a doubt, an explanation of consciousness and intentionality needs to include the role of the brain, but this is precisely where the worries arise *only if* the reflection is still rooted in a reductive view (§3.4.3; §3.8.1).

Once we have made conceptual sense of how consciousness and intentionality are related (§4.5), empirical information will offer relevant information on how to understand the mind, not because such information will reveal to us how our phenomenology arises, but because such information will reveal the place to look (our brains) to understand our phenomenology in a different way. Within a philosophical framework, this will show that this phenomenology is our starting point to scientifically understand the world. For example, if you are looking at a red apple in the supermarket, under normal circumstances (no hallucinations), you experience the object as part of the environment, and this object has some particular properties; it will be located in a particular place. Thus, as soon you have the object in front of you, there is a perceptual state, and an awareness of all these things – the experience of the apple may include a realization of sensations like colour, smell, taste, a particular shape, and so on. However, even if the consciously presented colour could be slightly different, the apple will always have a unique shape that can be intersubjectively verified: there is an experience of the shape, and if the shape of the apple were experienced in different ways by

different subjects, this could quickly be detected. The shape is verifiable between subjects, and let me emphasize that this shape, this primary quality, is determined by our phenomenal states (§4.5) as long we have the overall experience of the object (colour, texture, position, and so on).

In other words, in the presence of an object like an apple, there will be a relevant phenomenology, that, in our case as human beings, is realized internally according to the way that different areas of the brain like the V1 cortex, striate cortex and the amygdale and hippocampus interact (§5.4), and if this phenomenology creates the boundaries to our representation (§4.5.1), then the shape of the object is determined according to this phenomenology. Thus, if we start with the phenomenology, we find an experience of an apple composed of various shapes and colours, and yet it can be claimed that the shape of the object that we see – with shape as a primary quality – revealed by our phenomenal states, will provide more information about what it is in the world than the colour of the object –considered as a secondary quality - because the former will not be represented differently by different people – that is to say, an apple is invariably spherical and not triangular, once confirmed intersubjectively – and if we trust in this intentionality, intersubjectively verified, then we can built up our scientific understanding of the world from it (§5.4.1). The colour could be experienced differently by different people, and yet, these secondary qualities can tell us something also, that is to say, the intersubjectively verifiable surface of an apple has an associated colour that a group of people will say is red, green or yellow, but not brown, blue or white. We can then use primary qualities to map out certain surfaces that cause experiences of secondary qualities. Thus, starting with our phenomenology, the scientific understanding of the world, via the intentionality of

consciousness directed upon primary qualities, is built up. And only then, there is something that can be said scientifically about the world.

Thus, I conclude that necessarily there is a direct physical connection between our brains and our phenomenal and intentional states, and a causal connection from those states with the world. The former connection can be analyzed according to my conceptual explanation of how our phenomenology and intentionality are related, and how only via intentionality starting with phenomenology, the primary qualities are revealed. Although this perspective has not yet been fully philosophically explored, my view offers a plausible theoretical basis to understand it. It is important to highlight the fact that for such areas of the brain to work effectively, a proper historical and social development, and the suitable inputs, are required – to let the agent explore and interact with the world. Therefore, according to this thesis (§5.4), empirical research effectively provides hints about the sources and the real existence and importance of our phenomenology to our intentionality, and consequently, our understanding of the world. This is how both properties (consciousness and intentionality) interact and can inform us about each other. Thus, the relevant empirical research, alongside the relevant conceptual framework, could determine a path to follow to determine the physical nature of our minds. This is a plausible explanation about how the world that we experience and represent can be indeed studied by science in terms of the primary qualities that our secondary quality experience may reveal.



### 6.6.1 How the explanatory gap or consciousness hard problem must be understood

The belief that there is an insoluble, or at least very difficult, hard problem or explanatory gap (§2.4, §3.8.1, §5.2.1), is rooted in demanding the wrong kind of explanation. It is rooted in reductionist thinking, and as such, if this remains the case, there will not be a significant advance to understanding the relation between consciousness, intentionality, our brains, and the external world.

I believe talk of a gap reveals a misconception of the overall problem (§5.4.3). Let me explain. If we see an object, the experience tells us about its shape, colours, and so on. We begin with a phenomenology that will determine – among other things – the boundaries of what we represent. Thus, if we see an apple, we experience its shape – it has a spherical shape – and we are likely to agree that this is correct. We can trust in this information – you will not experience the apple as a triangular shape, even if you maintain that the apple might have a different phenomenal red to you than the one I experience. In this way, to know something about a given object, we must start with our phenomenology. There is no other way to reveal the nature of the object. From this intentionality (phenomenologically determined), we work out our scientific picture of the world based on primary qualities, and as previously explained, this in turn tells us something about secondary qualities. It may, for example, tell us that the surfaces of the objects that we perceive (understood in terms of texture, etc. – primary qualities) are at least for people in the same population identified with a common feature – with the surface they call ‘red’ in the case of a red apple. This then opens the way for scientific studies. In other words, a group of people in that population – if there are not widespread abnormalities – is likely to judge that the apple is red and not

purple, but this is based upon the knowledge obtained from the intentionality of the consciousness directed upon primary qualities. Thus, only when the correct phenomenology is realized do we have an intentionality directed upon such objective and measureable properties of the world (let us remember that I am defending an indirect realist view). Indeed, we can explore the shape of an object by scientific means, but only if this shape is initially revealed to us via a phenomenal state.

However, the explanatory gap is all about the ability of science to explain the secondary qualities (conceived phenomenally), and science cannot explain these properties – and never will never do in *this way*. In other words, according to this view, what science has tried to do is to explain secondary qualities in terms of an objective approach based on the scientific understanding of primary qualities (§1.6; §2.2). For example, I can determine mass or acceleration with the tools of science, but using such an approach will not be effective in explaining a secondary quality like colour; and this is how the gap enters into scene.

However, according to my view this is a misconceived problem: for, by starting first with the phenomenology, science must be based on the intentionality of only the primary qualities revealed by consciousness. Here a critic might say that we must admit that such secondary qualities and the phenomenal experience that reveals such properties to us are not part of scientific investigation – our experience of these properties is something over and above the physics. But this is wrong. Let us emphasise that such experiences are realized by the relevant brain states, and this means that the experience belongs to a physicalist ontology and to the physical history of what happens inside the head (§3.4). However, the experience cannot be reduced to anything physical, by neural reduction to more fundamental physical properties. The only plausible explanation is to say that they

are realized by the brain states. Consequently, in this respect, no further explanation should be expected, as soon as we understand that science must be based on the primary qualities revealed by phenomenology via intentionality. If we take seriously non-reductive physicalism, as has been shown, and accept that science and all other understanding begins in phenomenology, then we can see that everything which reasonably needs to be explained in this area, already has been explained.

In other words, the whole world is open to scientific study because of the intentional states determined by our phenomenal ones, and this phenomenology may reveal the primary qualities that can be studied by our scientific understanding: shape, and the properties that the surface of the object may have – like colour, or chemical properties like molecules and so on. That is to say, the explanatory gap, or the consciousness hard problem, is misconceived because secondary qualities cannot be explained in terms of primary qualities in any stronger way than to say that they are physically realised by certain brain states. Nothing more is needed, once you turn your back on dualism and reductive physicalism. There is no need for eliminativism (which is now plainly false, given that our inquiries begin with phenomenology), and there is no need for epistemic despair or implausible conclusions about the limits of science. Rather, according to my view, we can scientifically explain the primary qualities via the way that our intentionality is revealed by our consciousness, and only in this way can we have a scientific understanding of the world (§5.4). In other words, via intentionality, via our phenomenology, we move from my internalistic view to the external world, and this is the way that my view injects intentionality into the external world; not in the untenable, externalist representationalist manner.

But how about the secondary qualities (and the conscious experiences that reveal them to us)? There is nothing more to say than that our phenomenal properties are realized by the relevant brain states. Thus, non-reductive physicalism works as a reliable metaphysical base to determine the nature of our minds, and this nature, the phenomenal-intentional structure of our minds, will provide the sources for an objective picture of the world that can be studied by science.

A reductive approach will not allow us to move forward in the relevant explanations of the mind, neither in the philosophical or scientific arena. But we should not be insisting on a reductive approach if we take seriously the problems for reductionism raised by philosophers like Putnam and Fodor. Many still think that the path science must take is to try to explain our conscious experience in terms of more fundamental principles, but that is where they are wrong. They start with the primary qualities and try to explain such qualities first, then they move onto the mind and its phenomenal aspects, thinking these will be explained in terms of such primary qualities. But such explanations will not succeed, since they are rooted in the view that what determines almost everything is our understanding of the primary qualities, so we should try to produce all possible explanations in terms of such qualities. They are right to an extent, since science progresses from the primary qualities which intentionality reveals to us, but they forget where our understanding of primary qualities ultimately came from: experience! Hence they have things the wrong way around. As I have pointed out, the desire for such reductive explanations will make some philosophers think that a physicalist account of consciousness cannot be true, and some scientists think they have to discover something completely unprecedented in order to solve the problem (that there needs to be a 'breakthrough') – this side is pushed by reductionism towards dualism (or some other alternative metaphysics to

physicalism) or the belief in the need for a scientific revolution. This wastes the time of both philosophers (dealing with obsolete metaphysics) and scientists (looking for a breakthrough that will never happen). And such breakthroughs will never happen because it is not possible to explain experience of secondary qualities in terms of such primary qualities. In other words, we cannot explain the experience of red in terms of the kind of physical explanation that has been used to describe what is reflected by a given surface, or by measuring the speed of a ball in a free fall, or to describe the laws that govern the movements of the planets. Such explanations describe, as has been explained, primary qualities. And yet to discover what such primary qualities are, it is required to understand first how precisely our minds, in terms of a phenomenal-intentional structure, reveal such primary qualities. This is the alternative that I offer: starting with our phenomenology, and understanding intentionality in phenomenal terms. Otherwise, we will remain held in the grip of reductivism, and so we will be endlessly inspired to reconsider dualism, or even worse, eliminativism.

Indeed, the idea of the consciousness' hard problem or explanatory gap as it has been understood makes some philosophers and scientists conclude that consciousness is an illusion. As a consequence, the philosophers waste time theorising about this 'illusion' (that all that really exists are reports of conscious states, not the states themselves), and the scientists think that there really is no consciousness, and all they are doing is explaining how the brain works (they think they can call brain states 'conscious states' or 'brain states' – that it is just a matter of taste!) For that reason, they just cannot think beyond the so-called 'neural correlates' of consciousness, and based on this, try to understand how the interpretation of such correlates – based on the approach starting with primary qualities – will provide understanding of consciousness. And yet, they still use

terminology like 'the mind's eye' to explain what needs to be understood as our phenomenology. They cannot help thinking of our phenomenology correctly in this way, even though their false theories tell them not to.

Progress is possible only as follows. First, we must understand that non-reductive physicalism offers the best metaphysical path to understand the nature of our consciousness. The mind is still physical, but we will not be trapped in the idea of reduction. For it is clear that, if we follow the arguments of Fodor and Putnam, our mental states cannot be explained under the taxonomy of physics; and yet they are still physical in nature. Secondly, by accepting this non-reductive physicalism, it is possible to understand the physical realization of our minds, that is, we can understand the phenomenal-intentional structure of our minds, which reveals the primary qualities and allows a scientific understanding of the world. But this is only possible if we start with our phenomenology, and comprehend that such phenomenology is just realized by the relevant brain states, and no more metaphysical explanation should be expected. Therefore, my internalist view is the path to begin the real investigation, in the sense that, it allows science to use the relevant findings to produce the correct understanding of how our minds work, and how they reveal the world to us. It allows us to put all of this confusion behind us, and recognise for the first time how much we are currently learning about the mind, with science and philosophy working together.

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