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Wakeful Consciousness as Biological Phenomenon

A Teleological Account

by

Tristan Kreetz

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Declaration

This thesis is my own work. Neither this thesis nor any part of it has been submitted for a degree at another university. It contains neither work that I have used before, nor any that I have published.

Abstract

This thesis develops an account of the nature of wakeful consciousness. Its principal suggestion is that wakeful consciousness is a biological phenomenon and should thus be placed in the context appropriate to biological phenomena. That context is the characterizing form of life of organisms. Once wakeful consciousness is assigned its place in this context, it emerges that wakeful consciousness is a teleological phenomenon, one that is to be understood as having the proper function of putting its bearer in touch with the world. What emerges from reflection on the metaphysics of organisms is an account of wakeful consciousness that is teleological in character but which does not fall foul of the strictures of physicalism and casts new light on recent philosophical debates about consciousness.

Introduction: *A Minor Tradition*

As is so often the case with doctoral theses, I did not, when I started my PhD, think I would end up writing a thesis about consciousness. When I embarked upon the research process, I was hoping to write a thesis about the way in which our capacity for mental agency structures our experience; a continuation, in spirit anyway, of earlier research I had done on Kant's metaphysics and epistemology of mind. But, to borrow a phrase of Ernst Kantorowicz's: 'the fascination emanating as usual from the material prevailed' (1957, xxxvi). My encounter with O'Shaughnessy's highly distinctive conception of consciousness in *Consciousness and the World* (2000) and my attempts to understand it set me on a path that ultimately led to this thesis, devoted entirely to developing an account of wakeful consciousness, taking much of my inspiration from what I found most compelling in O'Shaughnessy's work.

While O'Shaughnessy is rarely mentioned in the literature on consciousness specifically – his views of consciousness characteristically deviating rather far from the norm – and remains something of an isolated figure in the context of the philosophy of mind, oft-cited but rarely engaged with at length, I came to recognize important similarities between O'Shaughnessy work and the work of other philosophers working within what I now think of as a minor neo-Aristotelian tradition in the philosophy of mind, encompassing philosophers like Gilbert Ryle, Elizabeth Anscombe, Philippa Foot, J.L. Austin in at least some of his moods, and, although he would not thank me for my inclusion of him in this list, Bernard Williams. O'Shaughnessy, as ever, ploughed his own furrows, but his field is, or so I have come to think, contiguous with that of the figures of this somewhat Aristotelian tradition. What is distinctive of that tradition, and what makes it neo-Aristotelian, is its focus on the actual and often rather messy and confusing business of living; of picking one's way through life with the often scant conceptual and practical means at one's disposal. In particular, I came to notice an important similarity between a remark made by O'Shaughnessy concerning the identification of consciousness and a discussion of Anscombe's concerning the individuation of organic nature more generally.

Discussing his characterization of wakeful consciousness as in some sense '*the* psychological state', in some ways prior to all other psychological states, O'Shaughnessy discusses a reason that he takes to support his position:

One other consideration points towards the same conclusion, and provides a significant clue as to the character of the function of consciousness itself. This emerges when we adopt a verificationist standpoint and ask the question: how

would we verify the presence of *psychologicality* in a novel object? The answer is general and simple. We would look for bodily phenomena, situated in determinate settings, which were indicative of an integrated battery of intelligibly linked psychological phenomena: namely, perception of sectors of that setting, cognitive attitudes concerning the latter, together with desires and intentions and intentional willings directed toward precisely those same sectors of the environment.

(O'Shaughnessy, 2000, 78)

The question that O'Shaughnessy is posing is about individuation, and closely resembles the following remarks of Anscombe's, which she makes in 'You Can Have Sex Without Children':

Eating is intrinsically a nutritive act, the sort of act to be nutritive; this would be an essential mark of eating if we wished to identify it in an animal species differing very much from us in structure. Now suppose there is a state of the body in which eating happens to be non-nutritive. [...] If someone eats (intentionally or otherwise) at a time when his body happens to be in such a state as prevents nutrition, he is still performing what is intrinsically a nutritive act.

(Anscombe, 1986a, 86)

What both O'Shaughnessy and Anscombe are driving at, or so I came to think, is that there is something distinctive about the way in which organisms and their essential features are to be individuated. Not very surprisingly for entities which must remain active if they are to maintain their existence, constantly taking in energy from their environment and radiating entropy, organisms and their essential features are to be understood as situated within the context of the business of living, and, more specifically, in the context of going about the business of living in a way distinctive of organisms of a certain sort.

This is hardly a novel claim, and has been widely discussed in practical philosophy, with a very similar set of ideas present in Philippa Foot's *Natural Goodness* (2001) and Michael Thompson's *Life and Action* (2008). I am, for reasons broadly similar to those discussed by Bernard Williams in *Ethics and the Limits of Philosophy* (1985) sceptical about the extent to which reflection on the characteristic form of life of humans can throw up a definite and determinate ethics, but what I came to realize is that the framework present in different ways in Anscombe, Foot, Thompson, and, to my mind, O'Shaughnessy, is also a potent account of the metaphysics of mind and organic nature more generally. Organic nature predictably, given its essentially active character, straddles the divide between the theoretical and practical

domains of philosophy. Even if reflection on the characteristic form of life of humans throws up no definite ethics, I have come to think that it not only can help us develop a robust metaphysics of mind but that reflection on the characteristic form of life of an organism is indispensable if one wishes to understand its mental or psychological characteristics. In so doing, I also elaborate on the minor tradition in the philosophy of mind from which I have drawn much of my inspiration.

My thesis' thesis, then, is the following: because wakeful consciousness is to be understood as an organic phenomenon, it should be understood in the context of the characterizing form of life of organisms, where it is individuated by its proper function, which, or so I will argue, is that of putting organisms in touch with their world. One feature of my account that will doubtless strike some as remarkable in what we might call the distinctively English sense of the term, i.e. the sense in which 'remarkable' means something like 'foolish', is that it is overtly teleological in nature: over the course of the thesis, I will be defending a robustly teleological conception of organisms and their features, arguing that they are to be individuated in terms of what they are for the sake of. So a significant portion of my thesis is devoted to showing not only that teleology and organisms and their features, of which wakeful consciousness is an example, in fact go hand in hand, but that there is nothing particularly mysterious or troublesome about teleology and that it is, in fact, a perfectly mundane phenomenon.

On this topic, I have drawn significant inspiration from the work of Robert Rosen, who in his *Life Itself* (1991), proposed a sophisticated model-theoretic treatment of teleology in organisms. While I have eschewed the model-theoretic approach, my discussion of teleology in terms of conceptions of physical complexity, Rosen's deft exposition of the kind of model which makes teleology seem otiose and the assumptions that underpin it helped me see the outlines of an alternative view.

My thesis can broadly be divided into three parts. The first part is made up of the first two chapters, the aim of which is introductory. The first chapter offers a preliminary characterization of wakeful consciousness, concerned largely with its ontological category and the fact that there can be defective instances of it. The second chapter compares and contrasts wakeful consciousness with the notions of consciousness central to orthodox debates about consciousness as a means of situating the discussion of my thesis with respect to those debates.

The second part of the thesis contains the account of wakeful consciousness proper. The third chapter argues that wakeful consciousness, as an essential feature of organisms of various sorts,

is to be understood in terms of the purposive place it occupies in the context of the characterizing form of life of those organisms, and argues that this teleological account is, in fact, consistent with and presupposed by evolutionary biology. The fourth chapter develops an account of the proper function of wakeful consciousness by means of an analysis of a number of cases of defective wakeful consciousness, arguing, ultimately, that the function of wakeful consciousness is that of putting an organism in touch with the world in the right sort of way.

The third and final part of the thesis is the fifth chapter. It is devoted to offering a diagnosis of why it is that teleological views of organisms came to be viewed with such suspicion, tracing this suspicion back to a certain kind of view concerning the nature of complex physical systems. It then makes a case that the conception of complex physical systems in question is suspect on both empirical grounds, due to issues related to the quantum mechanical description of isomers, and on *a priori* grounds, because it involves a kind of category-mistake concerning organisms. It ends with a diagnosis of how and why it is that orthodox debates about consciousness have proven so intractable.

Chapter 1: *Introducing Wakeful Consciousness*

Introduction

It is commonly suggested that it is quite difficult to determine what the notion of consciousness picks out. Indeed, it is often suggested that the notion of consciousness is ambiguous and that one should, in order to avoid conceptual confusions, be careful to delineate the different kinds of thing that may be called a kind of consciousness.¹ It is, in light of the emphasis one often finds put on the need to disambiguate the notion of consciousness by philosophers, remarkable that an obvious feature of our ordinary, unstudied talk of consciousness is almost never pointed out: that the notion of consciousness as we ordinarily use it is basically equivalent to the notion of wakefulness. To say that someone has regained consciousness is more often than not just to say that they have woken up, in the same way that a loss of consciousness implies an end to wakefulness. It is consciousness in this neglected sense, i.e. *wakeful* consciousness, that will be the primary analysandum of this thesis.

The aim of this chapter is introductory. As wakeful consciousness has received very little in the way of attention from philosophers, with the only meaningful discussions of it flowing largely from those who draw on Brian O'Shaughnessy's account of it in *Consciousness and the World* (2000), it will be necessary to offer a preliminary characterization of it. Not just because the rest of the thesis will build on that preliminary characterization in order to develop an account of the nature of wakeful consciousness, but also in order to make clear that the phenomenon of wakeful consciousness really has been overlooked and neglected in the course of recent debates about consciousness – a claim I will defend in the next chapter.

In the first section, I start by considering what we can learn about wakeful consciousness by considering the way in which it, and some of its contraries, figure in our ordinary explanatory practices. What emerges from that discussion is that we are, in describing someone or, indeed, something as wakefully conscious, describing the global psychological condition of that someone or something. The second section draws attention to a distinctive feature of wakeful consciousness, which it shares with some of its contraries: that there can be and are defective instances of it, or, put differently, that there seem to be cases in which a creature can fail to be properly wakefully conscious. In the third, and final section, I consider the apparent metaphysical structure of wakeful consciousness, arguing that wakeful consciousness is a

¹ See Antony (2001) for some critical discussion of the suggestion that 'consciousness' is ambiguous.

distinctive sort of occurrent state, which, in obtaining, facilitates the mental processes on which it constitutively depends.

1: *Wakeful Consciousness as Global Psychological Condition*

The fact that the notion of consciousness on our ordinary usage of it is practically synonymous with the notion of wakefulness suggests that wakeful consciousness – as its very name suggests, of course – is closely associated with if not identical to the state of wakefulness. This offers an indication of where we might look in order to get a handle on what, exactly, wakeful consciousness is or appears to be: by considering and contrasting what sets apart wakefulness from contraries like sleep and unconsciousness. Even if wakeful consciousness is not identical to wakefulness and instead stands in some unspecified relation to it, as e.g. Matthew Soteriou (2019) has suggested, comparing and contrasting wakefulness with its contraries will be instructive in that it will help rule out some number of characterizations of wakeful consciousness simply by showing that they are in no way tied to wakefulness.

One feature that immediately stands out about consciousness in the ordinary, wakeful sense of the term is that it picks out a feature of organisms, and, more specifically of animals. This is worth pointing out because a distinction is often drawn in the philosophical context between consciousness as a feature of organisms and consciousness as a feature of states of organisms or occurrences that happen to or are effected by those same organisms. I may, for instance, be wiggling my leg ‘unconsciously’ as I write – a habit I have. To say that I am not conscious of the fact that I am wiggling my leg is just to say that I am not aware of doing so, that I do not know that I am wiggling my leg. In this case, consciousness seems to be a relation of some sort, and my wiggling my leg is one of the relata of that relation. Consciousness in the wakeful sense is not like this: it is a property of creatures or a condition borne by them, not a feature of their actions or their states. This is not to say, however, that there is not something distinctive about the nature of the actions performed by the wakefully conscious, but just that this doesn’t entail that those actions themselves can be said to be wakefully conscious.

This is not to say that there are not technical contexts in which it might make sense to speak of, e.g., sleep in a more local sense. It is not uncommon, for instance, to find sleep scientists describe cases - particularly in creatures who go about the business of sleeping and waking in a way quite distinct from ours, like birds or fish - in which part of an organism’s brain is said to be asleep (cf. Lyamin *et al*, 2008; Siclari & Tononi, 2017). It’s clear, however, that this kind of use is to some extent derivative: what is meant when a part of, e.g., a rat’s brain is said to be

asleep in a ‘local’ sense is just that that specific part of a rat’s brain is behaving as it does when the rat as a whole is asleep despite the fact that the rat is awake (cf. Vyazovskiy *et al*, 2011). And something similar is true when it is said that, e.g. dolphins sleep with one hemisphere of their brain at a time. When that hemisphere is described as ‘asleep’, what is meant is that the hemisphere is giving off an EEG pattern, say, that is akin to the one given off by other organisms when they sleep, say. Or that the hemisphere that is ‘asleep’ is not processing environmental information like the hemisphere that is ‘awake’. Or, to give another example, to say that someone’s prefrontal cortex is ‘locally awake’ when that person is having a lucid dream, what is being conveyed is that that person’s prefrontal cortex is behaving in a way that resembles the way in which the human prefrontal cortex tends to behave in humans that are awake (cf. Voss *et al*, 2009).² It seems fair to say, then, that proper parts of organisms can only be said to be asleep or awake in a derivative and indirect sense.

So, wakeful consciousness is primarily a condition of organisms, and more specifically, of organisms of a certain sort: i.e. animals – we do not, or at least not typically, take it that trees, for instance, can be bearers of the condition of wakeful consciousness.³ And this might be thought to suggest something about the nature of wakeful consciousness. One prominent difference between plants and animals is, or so we might think, that animals have the capacity to pick their way through the world under their own steam, whereas plants do not possess that capacity or at least not in the same way. This distinction is unlikely to be straightforward given the sheer variety of organic life, but there is clearly something to the idea: animals do, after all, tend to ‘get up’ and start performing all sorts of physical movements when they come to be conscious in the wakeful sense. As it wakes up, a cat might stretch, and go off in search of food; a human might make their way to their kitchen and make themselves a cup of coffee or tea.

There is no doubt something to be said for this, simply because creatures that are clearly conscious in the wakeful sense do tend to move in all sorts of ways that they simply do not when they are, say, fast asleep or knocked out. But there are clear reasons for thinking that being wakefully consciousness cannot just be a matter of possessing or exercising capacities for physical movements of various sorts. The most obvious reason for this is, of course, that wakeful consciousness seems to be perfectly consistent with a total inability for physical

² Assuming, for the sake of argument, that lucidly dreaming subject are in fact asleep, a suggestion that has been disputed. See, for instance, Stoneham (2019, 162-4).

³ That is not to say, however, that there are not structural analogues to the wake-sleep cycle in e.g. unicellular organisms, as discussed by Siegel (2009, 2).

movement. Take the terrifying case described in Dalton Trumbo's novel *Johnny Got His Gun* (1939), the protagonist of which is an American soldier who was horribly maimed by an exploding artillery shell, causing him to lose his arms, legs, and his face – including his eyes, ears, mouth. Despite this, however, the protagonist finds, horrifyingly, that their mind remains perfectly functional, and the novel is largely concerned with the desperate attempts of the protagonist to stay sane despite his circumstances. On the face of it, the protagonist of *Johnny Got His Gun* can be said to be wakefully conscious, despite having lost all capacity for physical movement.

This is, of course, a fictional case, but it seems one that is eminently possible. We can, as gruesome as it might be, imagine a case in which someone's sensory apparatus and capacity for moving themselves are damaged to the point of no longer being extant. There seems no reason to deny that a person in that circumstance could retain the capacity for being wakefully conscious, horrifying as that thought might be. This rather gruesome thought experiment, which may well have been more than a thought experiment at various times throughout human history, suggests something important about wakeful consciousness: namely, that wakeful consciousness would appear to be a psychological condition of some sort. That is, in characterizing someone or something as wakefully conscious, we seem to be primarily saying something about what state their mind is in as opposed to merely saying something about their capacity to, e.g., move around the environment or perceive that environment. If it is possible for someone to be fully conscious in the ordinary, wakeful sense of the term after their limbs and sensory apparatus are irrevocably damaged, it seems that wakeful consciousness is a psychological or mental condition of some sort.

Of course, that is still not to say all that much – in fact, making the observation that wakeful consciousness is a psychological condition of some sort is apt to seem like kicking at an open door. Some further headway can be made, however, by considering what manner of mental condition or state wakeful consciousness is. It would appear to differ markedly, for instance, from other garden-variety psychological conditions, such as beliefs or knowledge, say. An average human being will have an indefinite number of beliefs, and, barring the possibility that they are in some sort of global sceptical scenario, they will also know a good few things. I, for instance, believe that I am wearing socks; that I am in Kenilworth; that my cat is named Kimchi; that I was born on the 21st of February; that the Dhofar Rebellion ended in 1976; and that 59 is a prime number, and so on and so forth. I am also fairly confident that I not only believe but know these things. So I am, like most human beings, the bearer of a huge number of beliefs

and items of knowledge at any time. But the same is not true of wakeful consciousness and its contrary states: one is awake, asleep, unconscious, or in the conditions that straddle the murky divides between those conditions but one cannot be the bearer of multiple states like them at the same time.

Wakeful consciousness and conditions like it, then, would seem to differ from other kinds of mental condition – like the condition of believing some proposition or other – in that a subject can only be the bearer of one of those conditions at any given time. In this, wakeful consciousness resembles, for instance, the state of being well-nourished or well-fed. When we describe someone as well-nourished, we are making a claim about how things are with that person in general or as a whole: in describing a person as well-nourished we are lodging a claim about the overall nutritive condition of that person. In characterizing someone or something as wakefully conscious, it seems what we are doing is similar, which would explain the similarity. In describing someone as wakefully conscious, it seems that we are making a claim about that person's overall or global psychological condition. Or, to use a familiar turn of phrase, in describing someone as wakefully conscious, we are characterizing their general *state of mind*.

The notion of a state of mind, as distinct from a mental state, is not one that is commonly employed by philosophers of mind, but is one that clearly has its uses – most prominently when there are questions, for instance in the legal context, of whether or not someone can be held legally responsible or culpable for some action they committed or failed to commit. In the philosophy of mind of the past century or so, on the other hand, the emphasis has been what are usually called mental states, of which conditions like belief and knowledge or desires and intentions might be considered examples. States of mind differ from mental states in exactly the way described above: to characterize someone's state of mind is to characterize the overall condition that their mind is in, much as characterizing a laptop as being powered on is to describe the global condition or state of activation that the laptop is in. Wakeful consciousness is an example, then, of a general state of mind; sleep would appear to be another; and unconsciousness yet another.

This can be clarified further by analogy to a device that fulfils multiple discrete functions, like an oven, say. There are things that are true of the oven no matter what setting it is in: it is, for instance, of the same make and made of the same materials regardless of whether it is switched off, in fan mode, or its broiler is on. But at any time, the oven will be either switched off, in fan mode, or in broiling mode, and depending on which of those modes it is in, it will fulfil a

different sort of function. The notion of a general state of mind can be understood in the same way: it is a way of picking out the way in which a mind as a whole is functioning at some point in time. As such, a mind is always in one overall or general state of mind.⁴ The acquisition of other mental states, such as beliefs or, say, character traits, can, of course, alter and influence a general state of mind, but they do not appear to be conditions of the same sort.

It is important to keep the notion of a general or overall state of mind apart from states that apply to the mind as a whole. To stake a claim about someone's state of mind is to say something about the way in which someone's mind is functioning in a global or overall sense, such that a person can only be in one state of mind at a time. But that is consistent with there being states that characterize the mind as a whole which are not states of mind in the sense I have discussed here. Take the properties of being obsessive or being imaginative. These are properties that arguably apply to someone's mind as a whole, and they are likely to affect how a person's mind functions, but they are not examples of states of mind. In fact, these conditions seem to float free from states of mind to at least some extent: someone does not, for instance, stop being creative or imaginative when one falls asleep.

Some progress in characterizing wakeful consciousness has been made in this section. The fact that it seems easily possible for wakeful consciousness to persist even though one's capacity for physical movement and one's perceptual capacities have been damaged beyond repair indicates that wakeful consciousness is a sort of psychological or mental condition. Its differences from mental states like belief and knowledge in that a single subject cannot be the bearer of multiple states of wakeful consciousness or conditions like it offer us a further indication as to what sort of condition wakeful consciousness is. In describing someone as wakefully conscious, we are characterizing that person's general state of mind, a state of overall functioning. In the next section, I want to draw attention to a further feature of wakeful consciousness, both as a way of putting further flesh on the bones of the notion of a state of mind and to highlight a distinctive characteristic of wakeful consciousness and conditions like it: that there can be defective instances of it.

⁴ This is not to deny that there are states of mind that fall in between, e.g., wakeful consciousness and sleep – such as light slumber, say. Given the way in which wakeful consciousness is individuated, i.e. in terms of its proper function, this is to be expected – this will be discussed in chapter 3.

2: The Possibility of Defect: Not Knowing What One Is Doing

As mentioned above, the notion of a state of mind usually gets pressed into service when there is an issue about whether to assign blame to someone for something they did. It has long been recognized, for instance, that someone who is in the grips of a psychotic episode cannot be fully held responsible for the actions that they perform. A psychotic person is not held to be responsible for what they do because of the nature of their state of mind: such a person is said to be such that they cannot be said to know what they are doing, for instance. In this section, I want to outline how to understand this idea, drawing on O'Shaughnessy's discussion of it in the third chapter of *Consciousness and the World* (2000). What will emerge is that the state of mind that obtains in a person in the grips of a psychotic episode is an impaired or defective instance of wakeful consciousness, which, in turn, suggests that we ordinarily take wakeful consciousness to have a proper function, one which it is rendered unable to perform by psychosis.

To begin with, it is helpful to distinguish between the various sorts of ways in which someone can be said to not know what they are doing. We might, for instance, describe someone who is doing a poor job of riding a bike as not knowing what they are doing. When we do, we are saying that the person in question lacks some bit of relevant know how, with the consequence that they are unable to ride a bike in any other way that poorly. Or we might say that someone does not know what they are doing in this 'know how'-sense when they are acting rashly or without sufficient caution: a driver backing onto a driveway might be said to not know what they are doing when they back into the drive way with too much speed. In such a case, there is again something deficient about the person's know how: they either don't think about or don't care that their backing up at high speeds makes it very likely that they might hit something.⁵

There is also another sense in which someone can be said to fail to know what they are doing, familiar, in particular, from Anscombe's discussion of it in *Intention* (1957). Anscombe discusses the example of someone manning a pump that is pumping water into a house. Unbeknownst to the pumping person, however, the water supply they are pumping from has been poisoned, and their pumping the water into the house will end up poisoning its inhabitants (Anscombe, 1957, 37). In this case, the person pumping does not know what they are doing, but not in the sense that they are doing a poor job at pumping because they lack some know

⁵ Obviously, I will not here be taking a stance on the issue of whether 'knowing how' and 'knowing that' are to be thought of as distinct. For discussion of that issue, see Stanley & Williamson (2001) and Small (2017).

how about how to pump water effectively. In fact, the pumping person might be an exceptionally skilled pumper of water and still fail to know what they are doing in a significant sense: they are in the dark about the fact that what they are pumping is not just water of the sort that the inhabitants of the house might drink, but a type of poison. The person pumping the water is unwittingly poisoning the inhabitants of the house and as such can be said to not know what they are, in fact, doing: they are not pumping water into the house, but are instead pumping poison into it.

Now consider the case of a psychotic person and the sense in which they might be said to ‘not know’ what they are doing. O’Shaughnessy discusses a case which involves a person in the grips of a psychotic episode who takes themselves to be the deity of the Abrahamic religions and who is giving a long, eloquent and thoroughly bizarre speech to a herd of cows, who the person addresses as ‘bright seraphim’ (O’Shaughnessy, 2000, 136). There is an obvious sense in which this person does not know what they are doing, but the sense in which that is the case seems importantly different from the aforementioned cases of not knowing what one is doing. Clearly, the ‘know how’-sense of not knowing what one is doing does not readily apply here. The person in question is, after all, giving a rather eloquent speech, even if the contents of that speech are thoroughly bizarre. The psychotic person need not be doing anything incompetently or rashly in order to be describable as not knowing what they are doing.

It may, at first glance, seem as if the second sense of not knowing what one is doing does apply to the case of the psychotic subject. After all, the psychotic subject is, like the person pumping water, to some extent ignorant of what sort of thing they are doing. The person pumping water does not know that they are, in fact, pumping poison into the house; the psychotic subject does not know that they are, in fact, not addressing the angelic host but a group of bemused bovines. Both, then, are in the dark with respect to what they are in fact doing to some extent. But that is not to say that the cases are the same. The person pumping water is definitely in the dark with respect to what they are, in fact, doing, but only in a somewhat contingent or circumstantial sense. That is, it may well be the case that it is, in practical terms, impossible for the person to determine that what they are pumping is poison – the poisoner might have used a poison that is odourless and colourless, for instance – there is nothing about the pumping person as such that makes them unable to recognize the true character of their actions.

The situation is quite different in the case of the psychotic subject. To say that they don’t know what they are doing is not just to say that they happen to be ignorant of the fact that they are,

in fact, speaking to a herd of cows because the cows have been disguised to look just like angels by a prankster. The fact that they are in the grips of an occurrent psychotic episode means that they are in principle incapable of recognizing the true character of their action as they perform it. This is what sets them apart from the person pumping the water, who is not in principle cut off from the true character of their actions, even if it is not easily possible for them to determine what they are in fact doing because of, say, clever ploys by the poisoner. The psychotic subject doesn't just happen to not know what they are doing in a single circumstance for whatever reason, their condition is such that they are in no position to recognize the true character of their action regardless of circumstance.

The reason for this is that the psychotic subject is in a state of occurrent irrationality, whereas the person pumping is not. That is, in the case of the subject in the grips of their psychotic episode, to say that they do not know what they are doing is to say something more than that there is some particular gap in their knowledge. Instead, the psychotic person cannot be said to know what they are doing because their state of mind is such as to preclude them from recognizing the true character of their actions. This would seem to be at least part of the reason for why it is commonly assumed to be inappropriate to take someone who is in the midst of a psychotic episode to be responsible for their actions in the same way as we might hold someone who carelessly pumped poison into a house, say.

With this a question arises about the relation of the condition that obtains in the psychotic subject and someone who is wakefully conscious. That is, I have suggested that wakeful consciousness can be understood as being an example of a state of mind, such that asserting that someone or something is wakefully conscious is to stake a claim about the general or overall state of mind of that someone or something. In describing someone in the midst of a psychotic episode as 'not knowing what they are doing', it seems that we are also staking a claim about that person's state of mind: we are implying that the person's general state of mind is such that they are not even in principle capable of recognizing the true character of what they are doing. But the psychotic subject is not asleep or unconscious and it seems that they, on the face of it, can be truthfully described as being conscious in the wakeful sense. And that raises the question of how that can be: how is it that the psychotic subject can both be said to be in the state of mind of 'not knowing what they are doing' and in the state of mind of being wakefully conscious if both are meant to be general or overall states of mind or to pick out how someone's mind is functioning at some point in time?

Nor is the case of the psychotic subject who ‘does not know what they are doing’ the only example of such a state of mind. Acute stress disorder, colloquially known as ‘(psychological) shock’, offers us another example.⁶ A person in the midst of an episode of acute stress disorder exhibits what are called ‘dissociative’ symptoms: they may appear to be numb, to be unaware of who or where they are, be largely insensitive to their environment, or struggle to make sense of what is happening or what did happen. When we say that someone is in shock in this sense, we once again appear to be characterizing their general state of mind. But someone who is in shock is once again not asleep or unconscious: they remain awake and, it would seem, wakefully conscious, but there are marked differences between the state of mind of someone who is wakefully conscious and in shock or suffering from acute stress disorder and someone who is wakefully conscious but not suffering from any such disorder.

There are, of course, also far more mundane examples. Consider the cases of someone who is incandescent with rage or someone who is grief-stricken. As we pick our way across the world and interact with others, we acknowledge that certain acts can be done out of anger or grief which are irrational or harmful. Someone may, in a fit of rage, say something hurtful to a loved one in order to hurt them, rather than because they believe what they are saying. Similarly, grief seems a paradigmatic exemplar of a general state of mind: it is associated with a complicated web of phenomena, and we do not usually see any difficulty in explaining away what would otherwise be deeply odd behaviour by citing the fact that the person is stricken with grief. It is not unnatural, then, to think that rage and grief can be examples of states of mind and that they thus characterize something like someone’s overall or general state of mind. But the person who is caught in a fit of rage or who is deeply grief-stricken is surely not only awake but also wakefully conscious. And this once again raises the question of how this is possible if wakeful consciousness is meant to be a state of mind in the same way that being caught in a fit of rage or being grief-stricken is.

What, in other words, is the relation between, e.g., acute stress syndrome and the condition that obtains in the person in the grips of a psychotic episode and wakeful consciousness? None of the examples of state of mind discussed so far seem to quite be contraries of wakeful consciousness. The ‘shellshocked’ soldier at the front, rendered almost catatonic by the horrifying experience of conflict, is not obviously not awake or conscious in the ordinary sense of the term. But there is clearly an important difference between the state of mind of a

⁶ See Cardena & Carlson (2011) for some discussion of acute stress disorder.

shellshocked soldier and someone who is simply wakefully conscious and going about their business as usual.

This brings us to an important feature of wakeful consciousness as we typically conceive of it: there are different ways of instantiating it. That is, there are multiple ways of being wakefully conscious. The shellshocked soldier is wakefully conscious; just as the person who is caught in the grips of a psychotic episode is wakefully conscious; and the same goes for the person who is incandescent with rage. But all of those cases involve being wakefully conscious in a way that is different from the others. Indeed, all are, on the face of it, impaired sorts of wakeful consciousness. A shellshocked soldier is wakefully conscious, but only barely, as they have almost entirely withdrawn from the world; the person in the grips of a psychotic episode is well and truly wakefully conscious, but there is clearly something awry in that they are not in a position to recognize the true character of their actions, and someone who, in a rage, says something hurtful shows a kind of inability to inhibit their impulses.

That our naïve ontology of mind should leave space for impaired instances of wakeful consciousness is not at all surprising given that we are dealing with a condition of organisms and it is natural to think that various features of organisms have something like proper functions to fulfil. A full defence of this idea will follow in chapter 3, but it is part and parcel of our conception of organisms and their features that many of those features have a function. It is part and parcel of our ordinary conception of the human eye that it is for seeing, and, moreover, that it is for seeing in a particular sort of way. A natural extension of this thought is that an eye that does not facilitate sight or does not facilitate sight of the right sort simply is not functioning properly. It should be stressed that what it means for an eye to function properly may well be a contextual matter: the ready availability of spectacles, for instance, means that if there is a sense in which my eyes do not function as they should or are not as they should be it is alleviated and perhaps even eliminated by the possibility of wearing spectacles. And, as we will see, depending on how one goes about the business of living, what amounts to proper and improper functioning will change. But that does not mean that our ordinary conception of the human eye is not functional in an important sense.

The states of mind discussed in this section are, on the face of it, examples of cases of wakeful consciousness that are in some way impaired or which do not function as they should. The person in the grips of a psychotic episode is wakefully conscious in an impaired fashion, something reflected in the fact that they are not even in principle in a position to recognize the

true characters of their actions. Similarly, the shellshocked soldier or person in a condition of what we colloquially refer to as shock after some traumatic event is wakefully conscious, but is temporarily stunned or unable to orient themselves within space and time. And someone who, in a fit of rage, says something hurtful is, in some sense, no longer entirely in control of their actions. All these cases seem to involve some sort of impairment in the general state of a person's mind.

We can extend this point to non-human cases as well. Take the case of a dog suffering from rabies.⁷ A dog suffering from rabies not only suffers from debilitating physical symptoms but also exhibits extreme psychological symptoms, such as extreme aggression, lethargy, a lack of coordination, depression and so on and so forth. But the extremely aggressive dog suffering from rabies does not cease to be wakefully conscious because of that. Instead, the rabies affects the sort of state of wakeful consciousness that the dog is capable of supporting or instantiating. A rabid dog may see threats where there are none, and attack its owners for which it otherwise showed significant signs of affection. It seems fair to say, then, that a dog suffering from rabies is wakefully conscious but only in an impaired or defective sort of way. Nor does the possibility of defect or alteration in states of wakeful consciousness seem to be limited to mammals: octopuses, for instance, seem to behave in entirely more social ways when drugs like MDMA are administered to them (cf. Edsinger & Dolen, 2018).

The possibility of defect also does not seem to be limited to wakeful consciousness in particular. Sleep, on our ordinary conception of it also has the potential to be defective in familiar and less familiar ways. One can sleep poorly or one can sleep well. There are also various sorts of parasomnias or sleep disorders. Take the case of sleep terrors, which involve something akin to a partial arousal from sleep in some respects but a continuation of the condition of sleep in others, such as the continued inability to move, leading to profoundly frightening experiences (Oudiette *et al.*, 2009). Sleep terrors appear to be an excellent example of dysfunctional sleep, a case of someone's sleeping not going as it should. Or consider somnambulism or sleepwalking, during which the sleeping subject may engage in all sorts of strange and disturbing behaviours, up to, and including, acts of violence like the intentional killing of other persons (cf. Windt, 2015, 95). Somnambulism, again, seems to be an example of a state of mind that is in some important sense impaired: so impaired, in fact, that it is difficult to tell whether it is a case of wakefulness or sleep.

⁷ Cf. Nigg *et al* (2009).

Wakeful consciousness, then, is a state of mind, i.e. an overall or general condition that someone's or, indeed, something's mind can be in, of which there can also be impaired or imperfectly realized cases. This can be understood to reflect the natural idea that wakeful consciousness, as a feature of organisms, is something that has a proper function of some sort: a target to hit in terms of what it allows an organism to do. Impaired cases of wakeful consciousness are cases of wakeful consciousness that are incapable of fulfilling that function. The state of wakeful consciousness that obtains in the psychotic person; the shellshocked soldier; or the person who is consumed by a fit of rage, are, I have suggested, all plausibly thought of as such impaired cases of wakeful consciousness.

This idea, that wakeful consciousness is to be thought of as having a proper function which particular instances of wakeful consciousness may fail to fulfil will prove to be essential to developing a satisfactory account of wakeful consciousness. The idea that wakeful consciousness has a proper function is, or so I will argue in the third chapter of this thesis, a reflection of the fact that wakeful consciousness is to be understood as a biological phenomenon and is, as such, to be individuated teleologically. These points, however, will have to wait. In the next, and final section, of this chapter I consider a different question: what sort of structure wakeful consciousness has in a metaphysical sense and what its ontological category is.

3: *Classifying Wakeful Consciousness*

In recent decades, it has become increasingly common for philosophers of mind to consider the manner in which mental or psychological phenomena fill time and to categorize them accordingly. In this section I want to consider the question of how wakeful consciousness might be thought to fill time. Before doing so, however, it is helpful to start with a preliminary discussion of some of the basic categories of temporal ontology. It was arguably Gilbert Ryle who reintroduced analytic philosophers in particular to the ancient idea that it is important to pay close attention to the temporal shape of mental phenomena in *The Concept of Mind* (1949). There Ryle proposed a classificatory scheme based on the different relations in which phenomena stand to time, a scheme which was then taken up and expanded in various ways by, e.g., Zeno Vendler (1957), Anthony Kenny (1963), and Alexander Mourelatos (1978). I will not attempt to trace this complicated development of the classificatory scheme here and will instead provide a brief overview that draws mostly on Mourelatos' scheme.

Take two things that were true of me while I was making myself a cup of coffee this morning. While I was doing so, I believed that I was doing so in my house in Kenilworth. I was also watching the coffee grounds as they slowly sunk to the bottom of my cafetiere, waiting for the right moment to push the plunger down. Both my believing that I was making coffee in my house in Kenilworth and my watching the coffee grounds slowly sink to the bottom of my cafetiere are solid examples of psychological phenomena, but they would seem to differ quite significantly in terms of the way in which they are related to time. Consider, for instance, the range of things that I might be said to be doing while I'm making coffee. Saying that I am watching the coffee grounds sink is a perfectly good example of something I could be said to be doing, but it would be odd and unnatural to say that what I am doing while making my coffee is believing that I am making my coffee in my house in Kenilworth. Whereas my watching coffee grounds sink is something that can be said to be something I'm doing or something that is happening or going on, we do not typically think of believing something as something that can be said to be happening or going on.

This distinction is one between an occurrence, something that fills time by happening or unfolding, and a state or condition, something which fills time by obtaining as opposed to happening. Watching something is an example of an occurrence: it is something that can be said to happen or unfold over time. Believing a proposition, on the other hand, is on the face of it something that fills time by obtaining and is not naturally described as something that happens or as something that someone or something is doing. This distinction between occurrence and state is arguably the most fundamental distinction when it comes to classifications of temporal shape, but there are further ones to be drawn.

Consider, for instance, how my watching the coffee grounds sink to the bottom of my cafetiere might terminate: by my spotting that it is time to push down the cafetiere's plunger. Both my watching the coffee grounds sinking to the bottom and my spotting or noticing that it is time to push down the cafetiere's plunger are examples of things that one could say are occurrences: both can be said to be happenings of some sort. But much like beliefs and episodes of watching differ in terms of their temporal characteristics, my watching the coffee grounds sink and my spotting that it is time to push down the plunger exhibit significant temporal differences. My watching the coffee grounds sink to the bottom of my cafetiere has what we might call temporal breadth or extension to it: it is something that I can be said to be doing over an extended period of time. But the same is not true of my spotting that it is time to push down the cafetiere's plunger. The latter appears to lack temporal extension: it makes little sense to say that I was

noticing or spotting that it was time to push the cafetiere's plunger down or to ask for how long I was noticing or spotting that. My noticing or spotting that it was the right time to push the plunger down did not go on for a period of time, it, on the face of it, lacks temporal extension. My noticing or spotting that it is time to push the plunger down is an example of what is often called an achievement: a sort of occurrence that does not fill time even though it can be said to happen.

Finally, there is what might be called an 'aspectual' distinction to be drawn between temporally extended occurrences. Consider, for instance, the difference between strolling and a stroll. Both strolling and a stroll have temporal breadth to them: strolling is something that takes some amount of time, just as a stroll will always be a stroll that took some amount of time. Neither strolling nor a stroll can be said to be examples of achievements, then. But there are important differences between strolling and a stroll. For one, as Mourelatos (1978, 426-7) points out, strolling and a stroll are quantified in different sorts of way: we talk of some amount of strolling, whereas we talk of *a* stroll. That is, one can count strolls, but one cannot count strolling. Relatedly, one can, as one is strolling, do more strolling, as Thomas Crowther (2011) notes, but a stroll is complete and cannot have more strolling added to it. The distinction between strolling and a stroll is the distinction between a process, something imperfective and ongoing, and an event, something complete and which can be counted, respectively. The exact nature of this distinction remains a topic of debate, but as the distinction has no distinctive role to play in the context of this chapter or thesis, I will leave it to one side (cf. Crowther, 2011; Steward, 2013, Stout, 2016).

With this outline of a classificatory scheme in hand, we can turn to the question of where wakeful consciousness finds its place within it. At first glance, the answer to how wakeful consciousness relates to time is obvious. Much like the belief in some proposition is not something that one can be said to be doing or be said to be something that is happening, it does not seem that wakeful consciousness can be said to be an occurrence. One cannot answer the question of what is happening by saying, for instance, that 'T.K. is being wakefully conscious'. On the face of it, wakeful consciousness would appear to be a paradigmatic exemplar of a state, something which usually comes to obtain at some point in time once someone or something wakes up and which ceases to obtain when the someone or something in question goes to sleep or is knocked out. Wakeful consciousness is not, on the face of it, an occurrence.

Interestingly, however, O'Shaughnessy demurs, writing the following about wakeful consciousness and its temporal shape in the second chapter of *Consciousness and the World*:

[F]or what it is worth, we *speak* of consciousness as a state But how seriously should we take this terminology?

Whatever its general category, consciousness is essentially occurrent in type, for each instant of consciousness is an occurrent renewal of what has been 'going on' from instant to instant. Thus consciousness can no more 'mark time' than can experience. This is because all that goes to make it up takes occurrent form.

(O'Shaughnessy, 2000, 96)

O'Shaughnessy's conclusion in this passage is nuanced: while he does not explicitly deny that wakeful consciousness is a state, he goes on to suggest that all that 'goes to make up' wakeful consciousness is essentially occurrent in form. Here is how O'Shaughnessy continues:

[W]hen we include rationality in its [i.e., wakeful consciousness'] analysis, we are not referring to the mere capacity which distinguishes man from other animals. Rather, we mean its actual employment in each instant in which consciousness continues. Indeed, what would it be for rationality (or its absence) to characterize (say) coma?

(O'Shaughnessy, 2000, 96)

So, according to O'Shaughnessy, one of the occurrent components of wakeful consciousness, i.e. one of the aspects that makes it a phenomenon that is essentially occurrent, is the fact that it involves the occurrent exercise of the capacity for rationality. Indeed, O'Shaughnessy seems to suggest that this is one of the individuating features of wakeful consciousness, setting it apart from contraries of it like coma.

We can tease out a line of reasoning here that will make clearer why there is good reason to agree with O'Shaughnessy and take it that wakeful consciousness is an essentially occurrent phenomenon. Let's begin with O'Shaughnessy's suggestion that wakeful consciousness is differentiated from its contraries such as coma precisely by essentially involving the exercise of one's capacity for rationality. What O'Shaughnessy means by this is a bit clearer when we take him to be assuming that a capacity for rationality is one of the essential and distinctive features of humans; something which sets them apart from other creatures. And if that is right, it follows that what is distinctive of human coma, i.e., what makes it the kind of coma that may obtain in humans as opposed to the sort of coma that might obtain in a dog, say, is that it is the

state of a rational creature. And if that is right, then a capacity for rationality trivially enters into the definition of what is distinctive of the sort of coma that obtains in humans.

In the passage just quoted, O'Shaughnessy can be seen to be suggesting that the relation between the capacity for rationality and wakeful consciousness is altogether more intimate. Where the distinctive sort of coma that might obtain in humans as opposed to dogs involves the capacity for rationality in the loose sense that humans are distinguished from other creatures in virtue of being rational, O'Shaughnessy suggests that wakeful consciousness essentially involves the exercise of the capacity for rationality. And it is this, O'Shaughnessy suggests, that is sufficient to show that wakeful consciousness is an occurrent phenomenon.

We can actually clarify O'Shaughnessy's reasoning by returning to some of the examples of impaired wakeful consciousness discussed in the previous section. Take the case of the person in the grips of a psychotic episode who is addressing a herd of cows as if they were angels. What the person is doing in that case is, it seems fair to say, irrational and the state of mind that obtains in the psychotic subject is arguably one of irrationality – as we have already discussed. But even the psychotic subject's state of mind, an impaired form of wakeful consciousness, is more intimately related to the capacity for rationality than the state of mind of being comatose. A person who is in a coma is in an a-rational state of mind: it, precisely because it is a coma, involves no exercise of the capacity for rationality. It only makes sense to describe a state as one of occurrent irrationality if it is a state which is, in its non-impaired form, characterized by the exercise of a capacity for rationality. That is, the state of mind of the psychotic subject is impaired because the state of mind that they are in essentially involves the exercise of a capacity but which, in the case of the psychotic subject, involves an absence or misfiring for a capacity for rationality. In this it differs from coma, which does not involve any kind of exercise of the capacity for rationality.

We will return to the sense in which the psychotic subject might be said to be in a state of mind characterized by occurrent irrationality in chapter 4, but we can start to see what O'Shaughnessy means by the case above. We can expand the point to the case of the shellshocked soldier. What makes it the case that the soldier is 'shellshocked' or suffering from a 'combat stress reaction' as militaries have come to call it, is that there is a sort of interruption in the functioning of the soldier's mind. Certain processes, such as responsiveness to what is going on in one's environment or the ability to make sense of sensory input, are inhibited and, as a result, the shellshocked soldier is wakefully conscious only in an impaired way. So while

wakeful consciousness is, at first glance, a state, it is a state that in some way essentially involves the occurrence of certain mental phenomena, as indicated by the fact that wakeful consciousness comes to be impaired when those phenomena do not unfold or are in some way impaired.

With these points, what O'Shaughnessy means when he suggests that wakeful consciousness is essentially occurrent in form becomes much easier to understand. What impaired states of wakeful consciousness indicate is that wakeful consciousness essentially involves mental occurrences of the right sorts going on, such that if those occurrences are inhibited, the resulting state of wakeful consciousness is impaired or defective. So wakeful consciousness, if it is a state, would appear to be a highly distinctive sort of state, one which essentially depends on the occurrence of phenomena of the right sort. Matthew Soteriou (2013, ch. 2) has introduced a term for this sort of state: an 'occurrent state'. So we can understand O'Shaughnessy to be saying that wakeful consciousness is, in Soteriou's terminology, an occurrent state.

All of this raises a question, in what sense, if any, is an occurrent state a state at all? Or, put differently, why take it that talk of wakeful consciousness is not just talk of a state in an extremely minimal sense, such that to say that someone is wakefully conscious is just shorthand for saying that some set of occurrences is going on? O'Shaughnessy seems, at first glance, happy to accept this idea, given that he notes that we should not make too much of the fact we talk of wakeful consciousness as if it were a state. This is suggestive of a way of thinking about wakeful consciousness' metaphysical structure that is akin to a naïve understanding of what happens when a liquid like water boils. To say that some portion of water is in the state of boiling on this crude understanding just is to say that its constituent particles are moving at a certain velocity and not much more. This crude picture is false, because boiling is more complicated than the mere movement of molecules and not obviously reducible to it, but it is an analogy that is sometimes employed by those interested in the relations between states and occurrences, such as Soteriou (2013, 63) and Helen Steward (2018, 115).⁸ Put differently, what reason is there to think that wakeful consciousness is anything over and above the joint occurrence of some set of mental phenomena, such as the occurrent exercise of a capacity for rationality?

⁸ See Needham (2009) for an extensive discussion of whether temperature can be reduced to the movement of particles.

The obvious answer to this question is that we take the fact that someone is wakefully conscious to be an explanation of why someone is exercising their capacity for rationality. Consider, for instance, what we might say of someone who is sleepwalking and acting irrationally as they do so. We can, and do, explain the irrational behaviour of the sleepwalker by appealing to the fact that they are not awake and thus not conscious; just as we explain the irrational behaviour of the person in the grips of a psychotic episode by appealing to the nature of the state of mind they are in. If states of mind like wakeful consciousness were nothing more than the occurrence of some set of mental phenomena, then it is not clear how or why these explanations would work: they would, after all, simply respond to the question of why someone is acting irrationally by saying that they are behaving irrationally.

Clearly, something more is going on. Consider again the case of the psychotic subject. When we say that they do not know what they are doing, we clearly aren't merely saying that the psychotic subject is not exercising a capacity for rationality, say. We are saying that the prevailing condition in the mind of the psychotic subject is such that the exercise of a capacity for rationality is not even in the offing in this case. Saying that the psychotic subject does not know what they are doing is to say that their mind is in a condition such that it is not even in principle capable of sustaining an awareness of the true character of actions performed, as opposed to merely indicating that there is a lack of awareness of the true character of actions performed in this particular instance.

What these kinds of explanation suggest and seem to require in order to actually explain anything is that the relation between a state of mind like wakeful consciousness and the sorts of occurrence it essentially involves is one of interdependence. On the one hand, wakeful consciousness essentially depends on the unfolding of events/processes of the right sort, such as an occurrent exercise of the capacity for rationality in the human case. But the obtaining of wakeful consciousness also explains why those very same events/processes occurs: that is, it is because a person is wakefully conscious that they are engaged in the exercise of their capacity for rationality. On this understanding, wakeful consciousness induces the occurrences on which it essentially depends in obtaining. It, as it were, lays its own foundations.

This may seem puzzling and circular, but this kind of relation is, in fact, fairly mundane and widespread across nature. A candle's burning is an excellent example. For a candle to burn, a continuous set of combustion events must be occurring at the microscopic level. Crucially, however, the flame that is produced induces the convection that attracts the oxygen necessary

in order for those same microscopic combustion events to occur over time. In this way, the burning of a candle sets the stage for its own continuation. The candle's flame and the microscopic combustion events stand in a relation of explanatory interdependence: the one explains the other and vice versa.⁹

The case of wakeful consciousness would appear to be analogous. As a candle's flame causes the convection necessary for the microscopic combustion events on which its existence depends to occur, wakeful consciousness and states of mind like it are, if our ordinary explanatory practices are anything to go by, responsible for the occurrence of the processes on which they essentially depend. Wakeful consciousness, then, would appear to be an example of an occurrent state in which the occurrent and stative components stand in a relation of causal and arguably essential interdependence. In this way, wakeful consciousness can be thought of as being similar to the condition of being well-nourished. Being well-nourished requires the occurrence of digestive processes, but cannot be reduced to them. Severely malnourished individuals, for instance, can undergo what is dubbed 'refeeding syndrome', where the malnourishment is so severe that the body can no longer induce the digestive processes necessary to digest any food that is consumed. In this way, a certain state of being nourished is a *sine qua non* for the occurrence of the digestive processes on which it, as a state of nourishment, depends (cf. Crook *et al*, 2001).

Over the course of this chapter, I have advanced three major suggestion with regard to wakeful consciousness. First of all, I suggested that wakeful consciousness is to be understood as a state of mind, which is to say that to be wakefully conscious is to be in a certain sort of general or overall state of mental functioning. Second, I highlighted that our ordinary ontology of mind makes room for defective or impaired instances of wakeful consciousness and that this is indicative of the fact that wakeful consciousness is deemed to have a proper function, which I suggested was unsurprising given the fact that wakeful consciousness is a condition of organisms. Third, and finally, the cases of impaired wakeful consciousness give us an indication of the metaphysical structure of wakeful consciousness. Wakeful consciousness can be understood as an example of an occurrent state which is characterized by the fact that a relation of causal and perhaps even essential interdependence obtains between its occurrent and stative components. Armed with this preliminary characterization of wakeful consciousness, I now turn to the next issue: is it right to say that wakeful consciousness really

⁹ Of course, in the case of the candle, the relation might be merely causal, whereas there is reason to suppose that the relation of interdependence in the case of wakeful consciousness is more intimate.

is overlooked in the literature on consciousness? I address this question in the next chapter, where I compare and contrast the notion of wakeful consciousness and what it designates with the notions of consciousness which have tended to command the limelight in recent debates about consciousness.

Chapter 2: *Senses of Consciousness*

Introduction

Armed with a preliminary characterization of wakeful consciousness, the focus of this chapter is on comparing and contrasting consciousness in the wakeful sense with the phenomena with which the extant literature on consciousness has overwhelmingly been concerned. Doing so is helpful for two reasons. First, it will help situate the account of this thesis with respect to the traditional literature and debates about consciousness. While wakeful consciousness is, or so I will suggest, not identical to or reducible to any of the phenomena that have commanded the limelight in those debates, there are reasons to believe that wakeful consciousness is not unrelated to the sorts of phenomena with which debates about consciousness have been concerned. Second, by contrasting wakeful consciousness with the various phenomena orthodox approaches have seen fit to label as forms of consciousness, it will become clear that wakeful consciousness really has been largely overlooked and ignored by philosophers.

As noted at the outset of the previous chapter, orthodoxy has it that there is a rather sizeable set of phenomena that can be said to be forms of consciousness in one sense or another, and I cannot hope to discuss all of them here. Instead, I will touch on four putative kinds of consciousness: creature consciousness, phenomenal consciousness, access consciousness, and self-consciousness. The reasons for comparing and contrasting wakeful consciousness with phenomenal, access, and self-consciousness should be obvious: these three phenomena, and phenomenal consciousness in particular, have been central to debates about consciousness in recent decades. Creature consciousness, by contrast, is barely discussed. In fact, creature consciousness is only really mentioned by David Rosenthal (1993; 2002) and even Rosenthal only mentions it to set it aside and focus on phenomenal consciousness. The reason for discussing it here, however, is that it is the notion of consciousness that arguably comes closest to that of wakeful consciousness, although it is, I will suggest, ultimately not equivalent to it.

The chapter is structured as follows. The first four sections will compare and contrast wakeful consciousness with one of the four kinds of consciousness mentioned each: creature consciousness in the first section; phenomenal consciousness in the second; access consciousness in the third; and self-consciousness in the fourth. The fifth and final section will be concerned not with yet another kind of consciousness but with the suggestion that a creature's being wakefully consciousness may simply be nothing over and above its instantiating some combination of phenomenal consciousness in addition to, say, access

consciousness, self-consciousness, or both. This conception of wakeful consciousness is, I suggest, inadequate because it lacks the means to explain why those kinds of consciousness are co-instantiated in different sorts of ways across different states of mind.

1: *Creature Consciousness*

References to creature consciousness are dotted around the literature on consciousness, but the philosopher who seems to have coined the phrase and who refers to it most consistently is almost certainly Rosenthal. Here is how he tends to characterize it:

The most general phenomenon we call consciousness is a property of creatures. Being conscious in this sense is, roughly, the opposite of being asleep or knocked out; we describe a person or other animal as being conscious if it is awake and if at least some of its sensory systems are receptive in the way normal for a waking state. Otherwise we say it is unconscious. For convenience we may call this property *creature consciousness*.

(Rosenthal, 1993, 355)

Or again:

One such phenomenon [that we call consciousness] is closely related to simply being awake. We describe people, and other creatures, as being conscious when they are awake and their sensory systems are receptive in the way normal for a waking state. I call this phenomenon *creature consciousness*.

(Rosenthal, 2002, 406)

And finally:

A creature is conscious if it is awake and responsive to sensory input, as against being asleep, anaesthetized, or otherwise unconscious. There is no doubt that an organism's being conscious has many important functions; its being conscious enables it to interact with its environment in ways that greatly enhance its well-being and survival.

(Rosenthal, 2008, 830)

Rosenthal typically follows his characterization of creature consciousness by remarking that it is, in fact, of limited if not negligible philosophical interest. What is of philosophical interest, according to Rosenthal, is what he calls the issue of 'state consciousness', the question of what

makes it the case that mental states or occurrence like perceptual experiences or imaginings are conscious (Rosenthal, 1993, 356; 2002, 406; 2008, 830). Somewhat puzzlingly, Rosenthal also implies that creature consciousness is ‘a biological matter’, whereas state consciousness is not, but given that he does not clarify what he means by this remark to any significant extent, I will leave this feature to one side for now (cf. Rosenthal, 2002, 406).

As Rosenthal characterizes creature consciousness, a creature is conscious in that sense if (and, one presumes, only if) that creature is (i) awake, and (ii) receptive to perceptual input in the way and to the extent that is typical for a creature that is awake. There are two ways of reading (ii) which I’ll call the ‘occurrent’ and ‘dispositional’ reading. On the dispositional reading of Rosenthal’s notion of creature consciousness, all that is required for creature consciousness is being awake and being in a position to respond to sensory input; on the occurrent reading, what is required is that the creature not just be capable of responding to sensory input, but that it actually be receiving sensory input. At first glance, this suggests that Rosenthal’s notion of creature consciousness is very close to the ordinary, wakeful notion of consciousness: indeed, Rosenthal seems to suggest that it is what he calls creature consciousness that we mean when we describe a creature as conscious in the ordinary sense. And what Rosenthal calls creature consciousness does seem to approximate the ordinary notion of consciousness: as Rosenthal stresses, what he calls creature consciousness takes sleep, unconsciousness, coma and the like as its contraries, and the same is true of wakeful consciousness.

But it is clear that what Rosenthal calls creature consciousness is not, in fact, what we ordinarily call consciousness and thus not the same as wakeful consciousness on either the dispositional or the occurrent reading of Rosenthal’s specification of creature consciousness. It is easy to see why creature consciousness on the occurrent reading would fail to capture what it is wakefully conscious. As we already touched on in the previous chapter, it seems that wakeful consciousness is perfectly consistent with having one’s sensory system damaged to the point that one no longer receives any meaningful input. This is the situation in which the protagonist of Trumbo’s *Johnny Got His Gun* (1939) finds himself, his sensory systems having been damaged beyond repair by artillery fire, but nevertheless wakefully conscious. The possibility of such cases, combined, perhaps, with more fanciful science fiction scenarios, such as brains floating in vats but nevertheless sleeping or being wakefully conscious, suggests that it cannot be a necessary condition for being wakefully conscious.

So what about the dispositional reading of Rosenthal's notion of creature consciousness, can that be said to be equivalent to the notion of wakeful consciousness? On the dispositional reading, recall, all that is needed in order to count as being creature conscious is that one be awake and that one be responsive to sensory input in the extent that one normally is when awake. There is doubtless some similarity between creature consciousness understood in this way and wakeful consciousness: one of the hallmarks of wakeful consciousness is surely a certain sort of responsiveness, a kind of readiness to respond to whatever sensory input might come one's way, even if it might not come.

This being said, it seems that one could fail to be properly wakefully conscious while meeting the requirements set out by Rosenthal's description of creature consciousness on the dispositional reading of it. Take, again, the case of the person who is wakefully conscious and delusional and who does not know what they are doing. Such a person, I argued in the previous chapter, can be described as not knowing what they are doing, and in doing so, we are staking a claim about the person's state of mind: we are saying that they are wakefully conscious, but that there is something wrong with the way in which they are wakefully conscious. But what makes it the case that they are not properly wakefully conscious does not seem to be that they are not responsive to stimuli in the normal sort of way. Depending on one's understanding of what a delusion is, they may either be hallucinating or hold an irrational and recalcitrant propositional attitude, but they do seem to be responsive to sensory input.

So it seems that what Rosenthal calls creature consciousness is instantiated by everyone who counts as wakefully conscious, but there is clearly more to being wakefully conscious than Rosenthal's creature consciousness. The difficulty with Rosenthal's account is that it does not give us the resources to explain why different instances of wakeful consciousness are defective or not. And that opens up space for doubt about whether Rosenthal's account gets to the heart of the matter. It is natural to think that defect involves the absence of something that is important to the functioning of something, that something is defective when something essential has broken down. And that suggests that Rosenthal's notion of creature consciousness leaves out important features of wakeful consciousness.

This is not to repudiate the idea that the function of wakeful consciousness is that of putting us in touch with reality in some way or other, which is clearly just below the surface of Rosenthal's characterization of creature consciousness, but as we will see in later chapters, that is not because wakeful consciousness requires occurrent perceptual contact with reality or because it

involves being in a position to respond to sensory input, but because wakeful consciousness is to be understood as a kind of epistemic orientation or a way of comporting oneself epistemically in such a way that one is in a position to apprise oneself of how things stand in the world given perceptual contact with that environment. Alternatively, we might say that the function of wakeful consciousness is to provide a creature with the mental wherewithal necessary for its sensory apparatus to offer it a view of the environment or world. These points will have to wait until the account of the function of wakeful consciousness in chapter 4, however. Regardless, it seems fair to suspect that what Rosenthal calls creature consciousness leaves out something important about wakeful consciousness.

2: Phenomenal Consciousness

Of all of the senses of consciousness discussed in this chapter, it is without a doubt phenomenal consciousness that has received the lion's share of philosophical attention. It is, in fact, not uncommon to find philosophers use 'consciousness' as shorthand for 'phenomenal consciousness' and when there is talk of "the problem" of consciousness or similar, it is invariably the problem of phenomenal consciousness that is meant. Where our ordinary, unstudied talk equates the notions of consciousness and wakefulness, the shape of debates about consciousness has led it become common for philosophers to equate the notions of consciousness and phenomenal consciousness.

Phenomenal consciousness has, it seems fair to suspect, been the object of philosophical attention in one way or another for as long as philosophy has been done, but the twentieth century in particular saw a surge of interest in phenomenal consciousness as phenomenal consciousness. The reasons for this are complicated and varied, with Paul Livingston (2004), for instance, tracing the interest back to debates among members of the Vienna Circle about the exact nature of the relationship between public, linguistic meaning and sensory experience. But there is no doubt that it was Thomas Nagel's 'What Is It Like To Be A Bat?' (1974) and Frank Jackson's 'Epiphenomenal Qualia' (1982) which pushed phenomenal consciousness in particular to the centre of debates about consciousness more generally.

Nagel is, of course, the one who introduced the terminology by means of which phenomenal consciousness is typically introduced. A creature, in Nagel's familiar terminology, is phenomenally conscious when 'there is something it is like to *be* that organism' because that creature is the subject of 'conscious experience' (Nagel, 1974, 436). Nagel then continues to identify there being something it is like for an organism with the organism being possessed of

a perspective on the world, ultimately arguing that the nature of the perspective on the world enjoyed by creatures different from us is largely beyond our grasp, as the nature of the distinctive perspective that humans enjoy is beyond the grasp of other creatures (Nagel, 1974, 439-40). As Nagel presents things, then, being phenomenally conscious or not is a matter of there being something it is like for one in the sense that one has a certain sort of perspective.

As M.G.F. Martin (1998) has pointed out, there are, in fact, two distinct sort of ways of taking remarks like Nagel's. One approach, which Martin detects in the work of, e.g., David Chalmers (1996) and Daniel Dennett (1988), emphasizes the 'there being something it is like' for something aspect of phenomenal consciousness, resulting in a distinctively monadic conception of phenomenal consciousness, where it is a matter of something's being modified in a certain way. But there is also another approach, which highlights a different sort of aspect of phenomenal consciousness detectable in Nagel's approach and arguably tracing back to G.E. Moore (1903), which emphasizes the relational character of phenomenal consciousness and the notion of having a point of view on something.¹⁰ Unsurprisingly, the differences between the monadic and relational conceptions are profound, with Martin suggesting that the monadic conception is ultimately untenable for broadly epistemological reasons. Obviously, this is not the place to adjudicate the correct way of understanding phenomenal consciousness, but as we will see, the distinction between the monadic and relational conceptions will be relevant to discussing the distinction between wakeful consciousness and phenomenal consciousness.

On the face of it, there is an obvious reason for denying that phenomenal consciousness is equivalent to wakeful consciousness. Most of us, after all, have undergone the experience of dreaming, during which we seem to be phenomenally conscious as we sleep. There is, on the face of it, something it is like for a dreaming subject and we may also think that the dreaming subject has a point of view on something: the dream-world. As we will see, however, both the idea there is something it is like for the subject and the idea that the dreaming subject occupies a certain sort of point of view on something are contentious.

This view, according to which we, when asleep, sometimes undergo dream experiences and are thus phenomenally conscious has been challenged by a small number of philosophers and scientists, starting with Edmond Goblot (1896) and reiterated by others like Norman Malcolm (1959), Daniel Dennett (1976), and most recently Tom Stoneham (2019). In one way or

¹⁰ For some further discussion of how Nagel seems to, at times, flit between a more monadic and a more relational conception of phenomenal consciousness, see Hoerl (2015).

another, Goblott, Malcolm, Dennett, and Stoneham reject the idea that dreams are actually experiences that occur during sleep. Instead, they tend to favour the view that the dreams that we remember are confabulations: dreams, on that sort of view, are not actually experiences we undergo, but what appear to be memories of experiences that we did not in fact undergo that are generated rapidly during the transition from sleep to wakefulness.

Whether or not this view of dreams as confabulations can be defended is the subject of significant debate. Defenders of conceiving of dreams as confabulations or false memories of experiences undergone during sleep tend to point to the fact that the best measure for determining whether or not a subject is the subject of experience and thus phenomenally conscious is the subject in question reporting on the experience as it unfolds (cf. Stoneham, 2019, 157). But a sleeping person cannot, or typically cannot, verbally report on their dreams as they occur. This, proponents of the dreams-as-confabulation view tend to point out, suggests that dreams are purely private experiences, the idea of which was famously meant to have been problematized by some of Wittgenstein's thought experiments (cf. Wittgenstein, 1953, §243).

Defenders of the dreams-as-confabulations theory also tend to point to what they take to be pre-cognitive experiences in sleep. Dennett, for instance, claims to have had dreams which, *qua* narratives took perceptual input occurring just before waking up – like the beep of an alarm clock – as their climax (Dennett, 1976, 157). Dennett suggests that such 'pre-cognitive' dreams are more easily explained if we assume that dreams are confabulated very quickly upon waking. If we assume that dreams are experiences, after all, how could the narrative of the dream be leading up to a perceptual stimulus – like an alarm clock going off – which we were not aware was going to happen? Unless we are willing to attribute the ability to predict the future to the dreaming subject, Dennett suggests the existence of such pre-cognitive dreams should lead us to adopt the view that dreams are, in fact, confabulations generated at the point of waking, which would neatly explain how a perceptual stimuli at the end of the dream fits into its narrative structure.

These kinds of claims are, however, disputed and not obviously in keeping with empirical evidence. Take the case of Dennett's pre-cognitive dream first. Dennett's case there revolves around taking it that his dream had a definite narrative structure, the climax of which happened to be related to his alarm clock beeping. But this is surely a counterfactual judgement that it is not obvious Dennett has any grounds for: Dennett's case turns on it being the case that his dream would have ended at that point even if his alarm clock had not gone off and woken him,

that his dream really reached its climax at that point. It may, of course, well seem to Dennett that his dream had reached its conclusion just as he woke, but it is well known by all those familiar with dreams that they hang together in a loose and somewhat disorganized way: events in dreams need not follow a neat narrative pattern. Or, more specifically, while dreams are obviously narratable, it is far from obvious that they have a narrative structure in the sense that they are “building up” to a conclusion in the way that a novel or play might. As O’Shaughnessy notes in his discussion of dreaming in ‘Dreaming’ (2002), dreams are often held together merely by an ‘and then’ structure, akin to how a small child might tell a story, where events do not follow one another for clear reasons: they just occur one after the other. And this raises the question of how Dennett could possibly know that his dream would not simply have continued on had he not been woken by his alarm: his dream may have continued beyond what Dennett took to be a natural conclusion. But Dennett says nothing to rule out this possibility, meaning that there is a perfectly natural way of explaining why there is nothing “pre-cognitive” about his dream.

There are also good reasons to be at least somewhat sceptical of the starting point of those who reject the view that dreams are phenomenally conscious episodes that occur during sleep: that sleeping subjects are, while asleep, not able to report on their dreams as they occur. There are, first, some studies in which experienced lucid dreamers seemed to be able to perform a pre-agreed signal with their eyes as soon as they started dreaming (cf. LaBerge, 1985; 2000). Those studies seem to add evidence that dreams are experiences, as opposed to being confabulations produced upon the moment of waking. But there is, as is ever the case, room for debate about these results: Stoneham, for instance, suggests that the case of the lucid dreamers is so unique and exceptional that it should be treated as an exception or, perhaps, even lead to the conclusion that lucid dreaming actually involves waking up, making it a case of daydreaming (Stoneham, 2019, 161-4).

Even if we accept that LaBerge’s lucid dreamers are so exceptional as to not be significant evidence for the idea that dreams occur during normal sleep, there is empirical and strong anecdotal evidence to undermine the idea that subjects can never report on their dreams as they occur. The extremely widespread phenomenon of sleep talking seems to undercut that assumption. Studies estimate that 66.8% of people talk in their sleep at multiple points in their lifetimes, making it an extremely common occurrence (cf. Bjorvatn *et al*, 2010, 1033). Sleep talking can also occur during all stages of sleep and can occur without any measurements suggesting that the sleep talking subject is, in fact, awake (Alfonsi *et al*, 2019, 12-3).

The phenomenon of sleep talking on the face of it simply cuts the legs out from under the view that dreams are confabulations generated in the process of waking: the most straightforward explanation of sleep talk is that the subjects engaged in it are speaking from and expressing the experience they are undergoing. To the best of my knowledge, however, none of the defenders of the view that dreams are confabulations have addressed this issue to any significant extent. The defenders of the dreams as confabulations theory might try and hold that the vocalizations are random and do not reflect anything the subject is undergoing. But this would be to occupy a position that is dialectically rather weak: by far the most simple explanation for the phenomenon of sleep talk is that the subject is expressing something about the nature of the experience they are undergoing as they sleep.

But one might wonder whether a dreaming subject is phenomenally conscious for another reason, particularly if one endorses a relational conception of phenomenal consciousness, on which what is crucial to being phenomenally conscious is that it involves someone or something having a perspective on something. Just as there are philosophers who would deny that dreams are experiences, there are philosophers who are arguably committed to denying that a dreaming subject are phenomenally conscious in the sense of having a point of view on something. This idea seems implicit in, e.g., the discussions of dreaming of Ernst Sosa (2005) and Thomas Crowther (2018), both of whom stress the idea that dreams are imaginative experiences. According to Crowther, ‘dreaming does not involve sense-perceptual experience, but involves the perceptual imagination of properties, objects, or events’ (2018, 256) and it is natural to think that a corollary of this view is that a dreaming subject merely imagines that they have a point of view on something, instead of actually occupying a point of view. And if one is committed to the idea that being phenomenally conscious involves more than just being modified in some way and must also involve occupying a point of view, a consequence would be that the dreaming subject is not phenomenally conscious.

There are, however, other cases where a subject clearly does occupy a point of view but is not wakefully conscious, suggesting that phenomenal consciousness is not equivalent to wakeful consciousness even on a relational or perspectival conception of it. The most obvious example of this comes from somnambulism, which involves people who are either asleep or not properly speaking awake performing actions of various sorts, from movements in bed to actually getting up and performing complex tasks like preparing meals and, in some cases, even driving across town or committing acts of violence (Broughton *et al*, 1994; Remulla *et al*, 2004; Zadra *et al*, 2013). Now, it may be that somnambulism involves significant imaginative content and that

the somnambulist has a point of view on their environment that is profoundly limited in various ways – an idea to which we will return in chapter 4 – but it is clear that they do have some point of view on their environment: they clearly have some sort of perceptual experiences of their immediate environment, for otherwise it would be impossible to explain how they successfully navigate that environment.

Wakeful consciousness and phenomenal consciousness, then, are clearly distinct phenomena. Phenomenal consciousness is arguably present in somnambulating subjects, and arguably also in the case of dreaming subjects. There being something it is like for one or the occupying of a certain point of view on something are phenomena that are instantiated by subjects who are in states of mind other than wakeful consciousness, such as sleep or whatever state of mind is involved in somnambulism. That is not to deny that there is some important link between wakeful consciousness and phenomenal consciousness, of course: it is difficult to imagine what it could be to be wakefully conscious and yet not be phenomenally conscious, at least in the human case. But that is no reason to conflate the two phenomena: wakeful consciousness is clearly distinct from and more complicated than phenomenal consciousness, because there can, as we have already seen, be cases of wakeful consciousness that are defective despite involving phenomenal consciousness, as in the case of the subject who does not know what they are doing.

3: *Access-Consciousness*

So, there are good reasons for denying that either creature consciousness or phenomenal consciousness are the same thing as wakeful consciousness. So what of yet another putative form of consciousness that one commonly finds discussed in the literature, so-called ‘access-consciousness’. The notion of access consciousness was coined by Ned Block in an attempt to delineate the different concepts that he takes the ordinary notion of consciousness to equivocate over (Block, 1995, 227). Access-consciousness is to be contrasted with phenomenal consciousness and is, on Block’s conception of it, a feature of mental states as opposed to being a property of creatures. Now, this already suggests that Block’s notion of access consciousness is not the equivalent of wakeful consciousness, which is a condition of creatures, but I will leave this to one side for the moment.

A mental condition or occurrence being access conscious is, Block argues, a matter of the condition or occurrence meeting the following conditions:

A state is access-conscious (A-conscious) if, in virtue of one's having the state, a representation of its content is (1) inferentially promiscuous ..., that is, poised for use as a premise in reasoning, (2) poised for rational control of action, and (3) poised for rational control of speech. These three conditions are together sufficient, but not all necessary. I regard (3) as not necessary because I want to allow that non-linguistic animals, for example chimps, have A-conscious states.

(Block, 1995, 231)

On Block's notion of access-consciousness, then, a mental state's being conscious in the access sense depends on whether or not it is available for use in reasoning as a premise and for the rational control of action more generally. A state can be both phenomenally conscious and access-conscious: I might act in light of what I am phenomenally conscious of perceiving, for instance. But a state can also be access-conscious without being phenomenally conscious. My knowing that I am wearing socks does not, it seems, have anything like a 'proprietary' phenomenal character; there is nothing 'it is like' for me to know that I am wearing socks. But despite not being phenomenally conscious, my knowledge that I am wearing socks is a state on which I can draw in reasoning and which can guide my actions.

Clearly, the ability to draw on and act in light of information one possesses is related to wakeful consciousness. Indeed, it is difficult to imagine a subject that is wakefully conscious but who is nevertheless not in possession of any access-conscious states: it is simply not clear in what sense such a subject could meaningfully be said to be wakefully conscious. But it is also clear that access-consciousness cannot be said to be the same as or equivalent to wakeful consciousness. Much as was the case with phenomenal consciousness, there is more to being wakefully conscious than having access-conscious states alone: if this were not the case, it seems that one could be wakefully conscious without being phenomenally conscious, which does not seem to be the case when it comes to human wakeful consciousness. It is difficult to imagine how someone who is not phenomenally conscious could be said to be wakefully conscious as it seems natural to think that wakeful consciousness comes with having a certain sort of perspective.

There is also another reason for thinking that wakeful consciousness does not consist in the mere having of access-conscious states: it is highly plausible that certain forms of parasomnia or sleep disorder seem to involve access-conscious states. The most obvious example is provided by somnambulism or sleepwalking, as it is commonly known. Sleepwalking subjects

seem to be capable of, to some extent, acting in a rational manner, guided by mental states or occurrences (cf. Windt, 2015, 95-7). A sleepwalking subject might, for instance, get up, make their way to the refrigerator and make themselves a sandwich or perform other actions, with sleep-related eating disorders being a familiar ailment (Schenk & Mahowald, 1994). Clearly, their doing this would be impossible if they did not have access to the mental states that they have which encode information about where the refrigerator is, how to open it, and how to successfully go about the serial operation of constructing a sandwich.

Performing an action of that sort, which anecdotal as well as empirical evidence suggests is well within the range of things that sleepwalkers do, seems to require access-conscious states. But it is far from obvious that sleepwalkers can be said to be wakefully conscious. Indeed, sleepwalking is treated as a parasomnia, a disturbance in sleep as opposed to the wakeful condition, in scientific and clinical contexts. This strongly suggests that access-conscious states can obtain in subjects who are not wakefully conscious and thus that the mere having of access-conscious states does not amount to the same thing as being conscious in the wakeful sense. Even if we were to treat the sleepwalking subject as being awake, however, sleepwalking is clearly a very heavily impaired form of wakefulness, something that is particularly clear in the way that certain forms of sleepwalking might involve violence that is unknowingly directed at the loved ones of a sleepwalking subject (cf. Cartwright, 2004). And if sleepwalking involves access-consciousness but a heavily impaired instance of wakefulness, then we once again have reason to deny that the mere having of access-consciousness is not the same as wakeful consciousness, because it suggests that some important and essential feature of wakeful consciousness is absent in the sleepwalking subject.

The phenomenon picked out by Block's notion of access-consciousness, then, is simply not the same thing as wakeful consciousness for broadly the same reasons that phenomenal consciousness did not amount to the same thing as wakeful consciousness. As was the case with phenomenal consciousness, there is more to being wakefully conscious than the mere having of access-conscious states. In addition, there is a case to be made that neither phenomenal consciousness nor access-consciousness are uniquely instantiated by wakefully conscious subjects. Both phenomenal consciousness and access-consciousness can, it would seem, be instantiated by a sleepwalking subject and is thus not identical to wakeful consciousness. In the next section, I consider a final sense of consciousness – self-consciousness – which plausibly is only instantiated by the wakefully conscious and consider whether self-consciousness and wakeful consciousness might not amount to the same thing.

4: *Self-Consciousness*

Self-consciousness is typically understood in one of two ways in the philosophy of mind. There is what we might call an intellectualist or conceptualist conception of self-consciousness, where being self-conscious requires competency with the first-person indexical and the capacity to conceive of oneself as oneself (cf. Castañeda, 1966; Anscombe, 1975; Perry, 1979). Some, however, like e.g. Jose Bermudez (1998) and Christopher Peacocke (2014) have argued that there is also a way in which the self can implicitly show up in experience without explicitly involving the first-person indexical or, indeed, any concepts whatsoever. On such accounts, experiences can implicitly involve some awareness of the self as such because the experiences present objects in an egocentric way: by, for instance, presenting an object as being to the left, or as within reach; or because experience necessarily involves an awareness of one's own body. This latter sort of view would make self-consciousness a more prevalent phenomenon than it would be if self-consciousness required the capacity to frame thoughts the content of which includes the first-person indexical because various sorts of creatures and, of course, human infants, lack that capacity, but may well be thought to represent or experience their environment in something like an implicitly egocentric or action-oriented sort of way.

So there are two questions to be answered: is wakeful consciousness equivalent to the capacity to conceive of oneself as oneself or is it, perhaps, equivalent to a more minimal kind of self-awareness as embodied in an experience with egocentrically organized spatial content, such as the fact that experience may present an object as being to the left or within grasping distance? Let's take the latter option first, because we might think that the ability to conceive of oneself as such is too demanding, given that children can be wakefully conscious but nevertheless be incapable of conceiving of themselves as such, lacking a grasp of the first-person indexical. It should be immediately obvious, however, that there is much more to being wakefully conscious than merely being aware of egocentric spatial relations, such as that a vase is within one's reach or that there is a wall next to one's right arm. To return, once again, to the case of somnambulism: it is clear that even a somnambulist is aware of themselves in this very minimal way. Indeed, it is difficult to see how they might navigate their environment if they were not, but they are not wakefully conscious and if they do count as being awake it is only in an anaemic sense.

Wakeful consciousness, then, is clearly not the same sort of thing as a minimal sort of self-awareness, which can be instantiated by non-wakefully conscious subjects. But what about the

more intellectually demanding sort of self-consciousness, which involves the capacity to frame thoughts of oneself as oneself? It is true that children seem to have the capacity for being wakefully conscious without having the capacity to think of themselves as such, but that may simply reflect the fact that the sort of wakeful consciousness of which small children are capable is comparatively simple when compared to the kind of wakeful consciousness one can find in adults. At first glance, self-consciousness in the more intellectually demanding sense at least seems to be more closely connected to wakeful consciousness than the different putative sorts of consciousness that we have discussed so far. It seems right to say that wakeful consciousness in humans does involve the capacity to frame thoughts about oneself as oneself. Perhaps we can even go further: if imagination theorists about dreaming, like Sosa and Crowther, are right, then it seems that dreaming may only involve imagined beliefs or acts of judgement, such that dreaming subjects when dreaming would not, in fact, be capable of thinking thoughts about themselves as themselves. If that is right, then it may well be the case that only wakefully conscious subjects are in a position to entertain thoughts about themselves as themselves.

But it is clear that wakeful consciousness is not a matter of merely being able to frame thoughts of oneself as oneself using the first-person indexical. Take the example of someone suffering from Cotard's syndrome, sufferers of which believe that they are either dead or do not exist (cf. Berrios & Luque, 1995; Enoch *et al*, 2021). Despite being associated with rather extreme symptoms, like starving oneself, analgesia, and self-mutilation, those suffering from Cotard's syndrome do retain the capacity to refer to themselves as themselves (cf. Billon, 2017). Those who suffer from Cotard's syndrome clearly cannot be said to know what they are doing: they are the bearers of a state of wakeful consciousness that is not functioning as it should. But they are nevertheless capable of referring to themselves as themselves, reflecting their capacity to frame the relevant thoughts. This, not very surprisingly, suggests that there is more to being wakefully conscious than being able to think of oneself as oneself: the fact that a case of wakeful consciousness can be defective despite involving the capacity to think of oneself as oneself suggests that something is left out of an analysis of wakeful consciousness that identifies it with a capacity to frame thoughts using the first-person indexical.

Once again, however, there is clearly a tight connection of some sort between wakeful consciousness and self-consciousness in the human case. Indeed, it is natural to think that what goes wrong in Cotard's syndrome is precisely something to do with self-consciousness, but in a very broad sense. Part of what goes wrong in the case of Cotard's syndrome, or so it would

seem, is that those who suffer from it are in some way confused or in the dark about the kind of thing that they are, either believing that they are a corpse or simply do not exist. The tendency to starve oneself found in Cotard's syndrome seems to be a way of acting on that belief. This is a topic to which we will return in the fourth chapter, which is devoted to a discussion of the function of wakeful consciousness.

5: Wakeful Consciousness as a Conjunctive Condition

I take it that I have now made a case for denying that the notion of wakeful consciousness is equivalent to a number of notions of consciousness prominent in the philosophical literature on consciousness. Wakeful consciousness is not, I have argued, plausibly construed as amounting to the same thing as creature consciousness, phenomenal consciousness, access-consciousness, or self-consciousness. But there is a possibility on which I have not yet touched: that being wakefully conscious is, in fact, a matter of these other senses of consciousness obtaining simultaneously in a subject. There are aspects of the discussion so far which suggest that there is something to this idea. While wakeful consciousness is not equivalent to phenomenal consciousness, access-consciousness, and self-consciousness, it seems that wakeful consciousness, or at least human wakeful consciousness, essentially involves all of these phenomena: being wakefully conscious, as a human being, does seem to involve being phenomenally conscious, as well as having access-conscious states, and being self-conscious. So might the ordinary notion of wakeful consciousness not simply be the equivalent of a conjunction of some of the other notions I have already discussed?

There is some evidence to suggest that something like the conjunctive conception of wakeful consciousness is, in fact, the dominant one in the philosophical literature on consciousness. It is commonly claimed, and almost always without argument, that the ordinary notion of consciousness is ambiguous, and that it fails to pick out anything like a unitary phenomenon. A claim of this sort is endorsed in some form by Rosenthal (1993, 355), by Block (1995, 227); by Chalmers (1996, 6; 2010, 3); by Uriah Kriegel (2003); and Rocco Gennaro (2017, 6) for instance. But a more important reason for thinking that orthodox debates about consciousness start from an assumption that our ordinary notion of consciousness does not pick out a unitary phenomenon is to be found in the very way that the debate about consciousness have been set up. As anyone familiar with that debate will be aware, phenomenal consciousness is often presented as something of a frontier, the idea being that while physicalistic and, more

importantly, functional explanation may account for most of what we ordinarily call consciousness but, crucially, that such accounts fail for phenomenal consciousness.

But to make this assumption, to separate out questions about phenomenal consciousness in particular from questions about consciousness of all other sorts requires that we think of conditions which involve phenomenal consciousness, like wakeful consciousness and sleep, in a particular sort of way. It requires that we think of the latter sort of conditions as being made up of components which can be specified and accounted for independently: it requires that we conceive of phenomenal consciousness as something that stands in no essential relationship to conditions like wakeful consciousness. And if that is true, then it seems that wakeful consciousness cannot but be a conjunctive sort of condition, a condition that obtains because some other set of phenomena which are essentially independent of it happen to obtain in a subject. If we take it that questions of phenomenal consciousness are wholly independent of issues about wakeful consciousness or sleep, we are in the business of making the assumption that the latter phenomena are in some way constituted out of further phenomena which can be separated out without explanatory cost. And this leads to a conception of the ordinary notion of consciousness as just picking out when it is the case that some number of independently specifiable conditions are instantiated by a subject.

A full analysis of why the conjunctive conception of wakeful consciousness is mistaken will have to wait until the final chapter of this thesis, as it requires a discussion of the distinctive way in which organisms are unitary, but the less than attractive consequences of committing to the conjunctive view are not difficult to see. As I have stressed throughout this chapter, there is no doubt that there are important relations between wakeful consciousness and phenomenal consciousness, access consciousness, and self-consciousness: being wakefully conscious arguably involves being phenomenally conscious, access conscious, and self-conscious. But it does not follow from that that being wakefully conscious is just a matter of just being phenomenally conscious, access conscious, and self-conscious.

The most pressing question that the conjunctive view of wakeful consciousness raises is obvious: why is it that the conditions it tries to break wakeful consciousness up into are co-instantiated? That is, why is that wakeful consciousness involves instantiating phenomenal consciousness, access consciousness, and self-consciousness? It is presumably not mere happenstance that wakeful consciousness involves precisely that combination of specific conditions and not others. But if wakeful consciousness is taken to be a mere conjunction of

those phenomena it is difficult to see what explanation could be offered of that fact: the conjunctive account seemingly has nothing more to offer in terms of that question than a shrug of the shoulders.

This difficulty ramifies when we notice that wakeful consciousness is only one state of mind and that there are others which also involve phenomenal consciousness, access consciousness, and self-consciousness, as we have already seen. But these other states of mind, such as sleep, or trance, or somnambulism seem to involve distinctive sorts of phenomenal consciousness, access consciousness, and self-consciousness. Take the case of sleep first. It may well be that the sleeping brain is in principle capable of producing experiences with the same phenomenal character as the waking brain, as Antti Revonsuo (2006, 71-84) has argued, but it is also clear that the structure of dream experiences tends to be quite drastically distinct from the experiences we have when we are wakefully conscious. We already touched on one such characteristic feature of dream experiences in the discussion of Dennett's defence of the confabulation view of dreaming: the fact that dream experiences often unfold without obvious rhyme or reason, one event or part of the dream following the next in a haphazard fashion. This is reflected in the way we talk: we can describe experiences and other events as dreamlike. So it seems that sleep, which can involve phenomenal consciousness on at least certain conception of phenomenal consciousness, involves a sort of phenomenal consciousness that is distinct from the sort we find in wakeful consciousness in at least some of its structural features.

A very similar sort of point can be made with respect to the state of mind involved in somnambulism, on which we have touched at multiple points throughout this chapter. The somnambulist is arguably phenomenally conscious and access conscious in some sort of way, and self-conscious in some sort of way: if they were not, it would be difficult to see how one could account for the fact that the somnambulist is capable of successfully bringing off complicated actions. But it can scarcely be doubted that the way in which the somnambulating subject is access conscious and self-conscious is distinct from the way in which a wakefully conscious subject is access conscious and self-conscious. The somnambulating subject is clearly not aware of what they are doing or, indeed, of themselves in the way that a fully wakefully conscious subject is. And that is surely something that ought to be explained: why is it that conditions like phenomenal consciousness, access consciousness, and self-consciousness vary in character across different states of mind?

A conjunctive conception of wakeful consciousness will struggle to offer an explanation of this fact. If we take it that being wakefully conscious is just a matter of co-instantiating a number of independently specifiable phenomena, it is difficult to see why it should be that those phenomena seem to exhibit some kind of dependence on the states of mind in which they occur, with different states of mind involving different sorts of phenomenal consciousness, access consciousness, and self-consciousness. If there is nothing more to those state of minds than the co-instantiation of these independently specifiable phenomena, this looks difficult to explain and it seems that the conjunctive conception will be committed to treating these sorts of differences as primitive and without further explanation.

As will become clearer towards the very end of the thesis, there is, in fact, an even stronger charge to be levelled at the conjunctive conception: it is, or so I will argue in chapter 5, arguably guilty of a kind of category-mistake in dealing with the complexity of wakeful consciousness in the way it does because it fails to take into account the fact that we are dealing with an organically and functionally integrated whole, the parts of which owe their nature to the way in which they are integrated into that whole. Making this point, however, will require a good deal of discussion of wakeful consciousness and, more specifically, of the biological context in which it should be placed if it is to be understood. The next chapter begins the task of situating wakeful consciousness in that vital context: arguing that wakeful consciousness, as a feature of organisms, is to be understood in terms of the purposive place it occupies in the context of the characterizing form of life of organisms of a certain sort.

Chapter 3: *Vital Context: Wakeful Consciousness and the Business of Living*

Introduction

In the previous chapter I argued that consciousness in the wakeful sense is not, in fact, the same as the sorts of consciousness on which the current philosophical literature on consciousness has tended to focus and that it is also not plausibly understood as being a conjunction of those sorts of consciousness. So far, however, my characterization of wakeful consciousness has been largely preliminary and stayed at the level of appearances. In this chapter, I take up the task of outlining a more developed account of the nature of wakeful consciousness. More specifically, in this chapter I will argue that developing a satisfactory account of wakeful consciousness involves assigning it the right purposive place within a specific sort of context, that of the characterizing forms of life of organisms. Or, put differently, I will be outlining and defending the claim that getting to terms with wakeful consciousness requires getting to grips with the distinctive metaphysical characteristics of organisms.

The first half of the chapter will be concerned with introducing and fleshing out the metaphysical framework for conceiving of organisms and their features, providing the broader context in which wakeful consciousness is, I will argue, to be assigned a purposive place. Section one introduces the central concepts of that framework, most importantly that of an organism's characterizing form of life. The second section fleshes out that framework more fully, focusing in particular on the question of what is involved with a creature instantiating its characterizing form of life or flourishing.

The second half of the chapter addresses what might seem like obvious worries about the metaphysical framework outlined here from the perspective of post-Darwinian biology. The account of the metaphysics of organisms outlined in this chapter is overtly teleological and it is often assumed that Charles Darwin's theory of evolution showed that teleology has no role to play in accounting for organisms and their features. I address two of these worries in section three and four as a way of both defending the teleological account of the metaphysics of organisms here and discussing the nature of the relationship between the teleological account and the information that evolutionary biology provides us about the origins of organisms and their traits.

1: *The Individuation of Organisms*

One striking feature of wakeful consciousness is just how widespread it is. The discussion of my thesis so far has largely been focused on the human case, but there are many, many more types of creature to which it seems right to ascribe a capacity for being wakefully conscious. Cats certainly seem to possess that capacity, as do dogs, but also mice, birds, tigers, bears, whales, elephants, and platypuses. Indeed, there seems reason to suspect that wakeful consciousness may, in some form or another, even be present in comparatively simple creatures, like spiders or insects of various sorts. The reason for this is that it makes sense to think of such creatures as being capable of being knocked out or rendered unconscious: in the course of caring for or experimenting on invertebrates of various sorts, veterinaries and scientists regularly anaesthetize them.¹¹ And we may think that this possibility of being ‘knocked out’ indicates, if not necessarily full-blown wakeful consciousness, at least structural analogues or simple forms of it. And this may well be thought to raise a question: what is involved in a tarantula’s being wakefully conscious? While it is difficult to imagine that a mammal could be wakefully conscious without also being phenomenally conscious, it is perhaps easier to imagine that this is the case for insects.

Even if we limit ourselves to the sorts of creatures that obviously have a capacity for wakeful consciousness, such as mammals, what should give us pause is the sheer variety of ways of being wakefully conscious it presents. There are doubtless significant differences between what it is for a human being to be wakefully conscious and what it is for a goat to be wakefully conscious: goats, if they are self-conscious at all, are only so in a minimal sense. Nor do goats seem to possess a capacity for rationality or mental action, both of which seems to go hand-in-hand with human wakeful consciousness. Nor can a goat engage in temporally ambitious and extensive projects quite like wakefully conscious humans can. A capacity to plan and give structure to one’s activities in a highly general sense seems crucial to being wakefully conscious in the case of humans: the wakefully conscious are in a position to plan and reason out courses of action. But goats do not seem to have this capacity, or at least not in quite the way that humans do.

There are, of course, also other and far more straightforward cases of variation. If all goes well, it seems wakeful consciousness in the human case comes with a rather rich sense of self-consciousness, which involves not just the capacity to conceive of oneself as oneself, but some

¹¹ See Cooper (2011) for a discussion of the various ways in which invertebrates are anaesthetized.

sense of the sort of thing that one is and the time and place in which one finds oneself. This is arguably something that is damaged or altered for the worse in cases of Cotard's delusion, for instance. But the same simply does not seem to be the case when it comes to wakeful consciousness in the case of, e.g., your average cat. In being wakefully conscious, it may well be the case that cats have a perspective on their environment that is self-conscious in the minimal sense of involving egocentric orientation. But wakeful consciousness in cats is certainly not plausibly thought of as having a tie to a capacity for the cat to conceive of itself as itself or some further quite rich sense that it is what it is. Indeed, a capacity for complex self-consciousness seems to be involved in being wakefully conscious for only a small sector of the known organic world.

But there was another kind of variability to wakeful consciousness on which we touched in the first chapter. One striking feature of wakeful consciousness is that there can be impaired instances of it. The example of an impaired state of wakeful consciousness discussed in chapter 1 was that of a person who could not be said to 'know what they are doing' in the sense that their present state of mind was such that they were not in a position to be in touch with the true character of their actions. A person in that sort of condition is clearly wakefully conscious, but there is clearly something wrong with their state of mind: the state of wakeful consciousness of which they are the subject is not as it should be in order to function properly. It is an example of a state of wakeful consciousness that lacks something that is essential to wakeful consciousness successfully fulfilling its function, whatever that function might be exactly. This introduces another way in which states of wakeful consciousness are variable: some of them are impaired or dysfunctional, whereas others function properly. And what it means for a state of consciousness to function properly again seems to vary across species: lacking a rich sense of self-consciousness seems to be enough to make a state of wakeful consciousness an impaired one in the human case but the same is obviously not true when it comes to platypuses or newts.

Bringing these points together, wakeful consciousness appears to be a widespread phenomenon which is part of the life of organisms of a large variety. It is, furthermore, natural to think that what it is to be properly wakefully conscious is something which differs from species to species: human wakeful consciousness differs from the kind of wakeful consciousness that might obtain in bees, which again differs from the sort of wakeful consciousness of which cats are bearers, and all of the former differ from what it is for an orca to be wakefully conscious, and so and so forth. That there can be such thing as impaired states of wakeful consciousness introduces even further variability, such that two creatures of the same kind can be such that

both are wakefully conscious but not in quite the same way. Faced with this high degree of variability, it is natural to wonder what it is that makes cases of wakeful consciousness cases of the same sort of condition. That is, what, given the species-relative nature of wakeful consciousness, is it that all cases of wakeful consciousness have in common? What makes it the case that a cat and a human can both be said to be wakefully conscious in a single sense?

That this question should arise about wakeful consciousness is, in fact, not at all surprising. Wakeful consciousness is, as has been stressed in previous chapters, a condition of organisms, and questions like the one just raised about wakeful consciousness can, in fact, be raised about practically any feature of organisms. Consider, for instance, wings. Wings come in a dazzling variety of shapes, sizes, colours, and materials. There are significant and readily apparent differences between, for instance, the wing of a European robin and those of a turkey vulture: where the wings of a robin are compact and noticeably curved, the wings of turkey vultures are broad and straight. But birds are, of course, far from being the only creatures with wings: consider, for instance, the differences between the wings of a bat and those of a bird. Or, indeed, the differences between the wings of bats and birds and the wings of various kinds of insect. Indeed, there are vast differences between wings of different insects: the differences between the brightly coloured wings of a butterfly and the delicate diaphanous wings of a dragonfly could hardly be more pronounced. And this is not even to consider the wings of species that are now extinct, like pterodactyls or archaeopteryx.

Or consider another case: that of sleep. Sleeping is something a wide range of organisms do, but what sleeping involves differs vastly from species to species. Humans, for instance, require a relatively large amount of sleep every day, usually ranging from anywhere from four to eight hours, divided into periods of both REM and non-REM sleep. Research strongly indicates that the sleep of platypus is similarly divided, but that platypus, when compared to virtually any other creature, spends much more time each day in a REM-like sort of sleep, marked by rapid eye movement and twitching (cf. Siegel, 1999). Birds and cetaceans are also plausibly examples of creatures that sleep, but again do so in ways that are vastly different from the way in which humans sleep. Certain species of dolphin, for instance, seem to suffer no ill effect from sleep deprivation lasting as long as five days, even though the effects of such extensive sleep deprivation would have hugely deleterious consequences for human beings (Ridgway *et al*, 2006). Killer whales or orcas also show significant flexibility in their sleeping behaviour, with female orcas seemingly going without sleep for periods as long as months after giving birth (Lyamin *et al*, 2005).

Similar points can be raised about a panoply of other appendages and behaviours. What makes the hibernation of bats and grizzly bears hibernation despite vast differences? And how is it that both jellies and octopuses can both be said to have tentacles? But the questions can also go in an opposite direction. Take a case discussed by Michael Thompson (2008, 55). Both amoebae and humans replicate their cells, but when an amoeba divides its cell to form a novel cell, it is a case of the amoeba reproducing itself. By contrast, when a human cell undergoes division, that is not a case of the human reproducing itself, despite the fact that the cellular mechanisms whereby human cells and amoebae divide themselves are basically the same. So why the difference? Why is it that basically the same process counts as reproduction in one case, but not in another? These questions become even more pronounced when we consider the possibility of life on planets different to ours: might there, for instance, not be creatures which engage in a process chemically identical to the process whereby we digest our food, but which is such that it is used to produce a repellent liquid to be released as a defence mechanism rather than being nutritive, as Thompson (2008, 54) also asks?

This sort of relativity of appendages and behaviours is connected to the individuation of organisms as such. Take the case of the amoeba duplicating itself again: what makes it the case that an amoeba doing that is a case of reproduction is the fact that it is an amoeba, as opposed to a human cell, that is dividing itself. So identifying some behaviour as one of reproduction involves identifying what sort of thing it is that is performing the behaviour in question. An amoeba duplicating itself is reproduction because it is an amoeba: the question of individuation about the behaviour is tied to issues to do with the individuation of organisms as a whole. The same goes for wings: what makes a dragonfly's wing a wing is not independent from the fact that it is an appendage of a dragonfly. Questions about the individuation of features or parts and behaviours of organisms go hand in hand with questions about the individuation of organisms as such.

The sort of species-relativity and variability in the case of wakeful consciousness, then, is arguably an instance of a more general phenomenon associated with organisms, their characteristics, and their behaviours. Just as we may ask what it is that makes what are, on the face of it, very different sorts of condition one and all examples of states of wakeful consciousness, we can ask what makes the panoply of appendages we classify as wings one and all examples of wings, or what makes states of organisms with vastly different features one and all cases of sleep, and so on and so forth. Or, put differently, the question raised by the variability and species-relativity of wakeful consciousness, viz. what it is that makes *prima*

facie importantly different states all examples of states of wakeful consciousness, is a specific case of a question about the individuation of organisms and their features. That is, what is it, exactly, which makes it the case that what there is in some region of spacetime is something like a wing or sleep or reproduction?

In the post-Darwinian world, the answer to this question may seem blindingly obvious: what makes wings wings, sleep sleep, and wakeful consciousness wakeful consciousness is simply their causal history, i.e. what caused those things to evolve over the course of time. That is, one takes it that what makes a wing a wing is, quite simply, that it has a certain sort of evolutionary function, something it evolved to do. So a buzzard's wing and a dragonfly's wing would both be wings because they both have the evolutionary function of facilitating flight. By far the most prominent elaboration of an account of these lines is the so-called etiological account of function, which is strongly associated with the work of Ruth Millikan (1984; 1993) and Karen Neander (1991a; 1991b), although its origins can arguably be traced back to the work of Ernst Mayr (1961). Their respective approaches to the issue of the function is etiological because they understand the function of features of organisms in terms of the causal history of these appendages. Their approach would take it that some appendage is a wing just in case that appendage was selected for in the course of evolution because it facilitates flight and flight contributed to the fitness of the organism's ancestors (Millikan, 1993, 35-6; Neander, 1991b, 459). Or, to cite Millikan's gloss of the view:

[I]tems have functions when their being there depends on reproduction from ancestors having similar traits, these traits having been causally efficacious in helping produce these items, and these traits having been selected at some point in history for their capacity to make this sort of contribution.

(Millikan, 1993, 41)

Now there are important discussions to be had about how, exactly, the etiological account is to be spelled out, but abstracting from those issue it would seem like the etiological account, regardless of the exact elaboration of it, offers us an answer to the question I have raised. What would make it the case that different cases of wakeful consciousness, for example, are all cases of wakeful consciousness is just that it is a condition that was selected for in the course of evolution because it produces a certain sort of effect. In the wake of the Darwinian revolution, such an approach has significant appeal: it can scarcely be doubted, after all, that evolutionary history has an important role to play in determining why organisms are the way they are.

In truth, however, the etiological account is not up to the task of answering the question I have raised, which concerns the conditions under which organisms and their features are to be individuated. In fact, the etiological approach presupposes a way of individuating organisms and their features: it is not, in and of itself, capable of giving us an account of the individuation of organisms. The difficulty lies in the fact that the etiological account requires that we have some way of picking out those entities which are what they are in virtue of having the evolutionary causes that they do from those which are not like that. The etiological account rightly takes it that the organisms we observe are the way they are because of their evolutionary history, but that does not provide us with an account of how we pick out organisms and their features in the first place.

Take the case of wings again. Given an etiological account, something is a wing if its presence is explained by the fact that it was selected for in the course of evolution because it produces flight. But this just raises the question of what it is for something to be selected for in the course of evolution. Presumably, given our current understanding of evolution, this will involve the emergence of some genetic pattern in some organism that led it to form an appendage that facilitates flight at some point in the past which was then passed along by it as it reproduced. But this just raises the question we raised above: what is it for an organism to reproduce? The way in which an amoeba reproduces is, after all, entirely different from the way in which a human being reproduces. Say, for instance, that we described reproduction as the process whereby an organism passes along genetic information to its descendant.

Why is it, we might ask, that a human cell dividing does not constitute a case of reproduction? A new cell is, after all, formed and genetic information is passed along. Errors in cell duplication, furthermore, can have important effects: when certain genes are damaged, cell duplication can lead to drastic changes in the cells produced, which are then duplicated further, as occurs in the case of carcinogenesis.¹² But we do not take it that any sort of reproduction or evolution occurs when this happens to human cells. Now it might be pointed out that the difference is that a single human cell is not an organism, but an amoeba is. But that just raises the question of why this is so. How, in other words, are we to determine whether or not a case of reproduction has taken place? What criterion are we meant to employ to determine whether

¹² For some further discussion of the mechanisms involved and the ways in which cell duplication can go wrong, see Wood *et al* (2001). More discussion follows below.

an organism has given rise to a new organism and passed along its genetic information and thus, over the course of generations of organisms, whether or not evolution has occurred?

The difficulty faced by the etiological account and why it presupposes as opposed to provides a method for the individuation of organisms and their features is that its method of individuation depends on having a grasp on the process of evolution, which involves, if it involves anything at all, the transmission of genetic data from generation to generation of organism. But one cannot specify when or where that sort of process goes on unless one is already equipped to pick out organisms and their features. The case of cell division in the human case brings this out: why is it that a human cell's dividing does not count as a process of evolution, particularly if it involves an alteration in the genetic information encoded in the DNA of those cells? The answer is, of course, that a human cell's dividing is not a case of a human being reproducing themselves and giving birth to offspring. But that sort of answer is only available to one if one has a grasp on what it is for a human being to produce offspring. One can only make sense of evolution, in other words, if one has some means of picking out organisms and some grasp on what it is for those organisms to produce offspring. And this issue ramifies: what it is for an organism to reproduce is going to be importantly related to what sort of thing that organism is, whether it is a mammal, a bird, and so on and so forth. So the etiological account in fact presupposes that we already have a sophisticated understanding of organisms of different sorts.¹³

Crucially, the issue concerning reproduction is not isolated. As will be touched upon at numerous points in the remainder of this thesis, organisms are unitary in a distinctive sort of way. How an organism reproduces is very closely tied to the rest of the features and behaviours it exhibits. How an organism reproduces depends on how it feeds itself, which in turn depends on how it moves across the environment, which in turn depends on the environment it inhabits, which in turn depends on the sorts of psychological capacities it has. Identifying some behaviour as one of reproduction is not independent from questions about the rest of an organism's features, and in fact presupposes an ability to individuate an organism as a whole. Identifying something as being a case of a turkey vulture reproducing involves having a grasp of what turkey vultures are like and what sorts of features they have, and will thus also require one to have some idea of how to individuate wings, beaks, necks, digestive tracts and so on

¹³ This same argument undermines the kinds of approach to evolutionary biology that attempts to do away with phenotypical characteristics altogether, like those discussed by Moosavi (2020). Crucially, such accounts still require some grasp of when it is the case that genetic information is passed along, i.e. some grasp on what reproduction involves.

and so forth. Because individuating reproduction involves individuating an organism and having some grasp of what the organism is like, an account that presupposes an ability to individuate reproduction in fact presupposes an ability to individuate organisms and their features in general.

Further pressure can be put on the etiological account by considering the origin of life itself. Unless one wishes to adopt a form of pan-vitalism, which takes life to be a primitive of some sort, one will be committed to the idea that life is something that came to exist at a certain point in time. At some far-flung point in time in the past, perhaps at a hydrothermal vent deep in a primordial ocean, the first organism on earth came to exist. But that organism cannot have evolved, because there was nothing for it to have evolved from. Instead, complex thermodynamic conditions probably interacted with certain sorts of chemical compound to produce a simple organism. For the etiological account, however, it would be impossible to individuate that original organism as such. If we take it that organisms and features are what they are in virtue of their evolutionary history, then there is no way in which organisms could have emerged in the first place. It may be that all organisms that are still around or which happened to be preserved in the fossil record are the result of evolution, but it simply cannot be true that organisms and their features are all the result of evolution unless one takes it that life is somehow a metaphysically primitive property, which, on the face of it, is deeply implausible.

So the etiological account simply cannot give us what we need: it is inadequate as an account of how to individuate organisms as such. It is, however, not the only account to which we might turn. There is also what is often dubbed the ‘organizational’ account of function, recently proposed by Matteo Mossio, Cristian Saborido, and Alvaro Moreno (2009). On the organizational account of function, what makes sleep sleep or a wing a wing is that sleep and wings are to be understood as components of what is dubbed an ‘organizationally closed system’, i.e. one that maintains its own boundaries, that play some role in the system maintaining itself (Mossio *et al.*, 2009, 824-5). So the thought is that a dragonfly, for instance, is one closed system that maintains itself and a buzzard is another. What makes the appendages of dragonflies and buzzards both examples of wings is that they are functional components of both with the same function and produced by the system in order to fulfil that function: that of allowing dragonflies and buzzards to maintain themselves by facilitating flight (Mossio *et al.*, 2009, 828).

The organizational account is, on the face of it, more successful than the etiological account as an account of how to individuate organisms. It does not, for instance, suffer from the issue of not being able to individuate organisms that did not occur via evolution, because all that is needed for some entity to count as an organism is that it be a self-maintaining and closed system. But this account too is inadequate. The difficulty is that there are various traits of organisms which seem to play no role in the organism's maintaining itself. Semen and ova are examples. Being unable to produce semen does not seem to have any effect on whether or not a human being is capable of maintaining itself. Instead, semen and ova play some role in creatures of various kinds reproducing themselves. Or consider the various behaviours engaged in by parents as their infants learn to speak: parents will, in order to facilitate this process, subconsciously simplify the way in which they speak – avoiding sentences that are complex syntactically, for instance (cf. Elmlinger *et al*, 2019). This behaviour does little to help the parents to maintain themselves qua closed systems and instead benefits their offspring.

Defenders of the organizational account have attempted to respond to this issue by taking it that the organization in question in fact incorporates multiple generations of animal:

The process of reproduction, in this sense, simply constitutes one of the functions through which the organization succeeds in maintaining itself beyond the lifespan of individual organisms. Since the encompassing system composed by reproducer and reproduced organism possesses a (temporally wider) self-maintaining organization, reproductive traits are subject to organizational closure, and their functions are correctly grounded by the organizational account.

(Saborido *et al*, 2011, 600)

This move may well serve to help the organizational account stave off worries about reproductive behaviours, but it clearly will not do for the purposes of the question being raised in this section. That question, after all, concerns whether or not the organizational account provides us with the means necessary to individuate organisms. But now it looks as if it does not, as it requires identifying something like a causal chain of which the organism is part. But clearly, and as we have already seen in the case of the etiological account, this presupposes rather than provides us with a way of individuating organisms. In fact, this move seems tantamount to turning the organizational account into a form of etiological account.

In addition to this, the organizational account is going to face difficulties given the sheer potential variety of life. For the organizational account, recall, what makes some feature of an

organism the sort of feature that it is is that it is a feature that was produced by the organism *qua* system to fulfil a function of a certain sort. But it is not difficult to imagine cases where there will be little to no similarity by the function played by, e.g., wakeful consciousness. Take the sentient ocean of Andrei Tarkovski's *Solaris*. If we are happy to think of Tarkovski's sentient ocean as an animal or organism, it does not seem unthinkable to attribute a capacity for wakeful consciousness to such an entity, particularly if it also exhibits a sleep-wake cycle or periods of unconsciousness. But it is difficult to see how such a condition could play the same functional role in a sentient planet-covering ocean and a human being: considered as systems, they seem too radically distinct for this to be the case.

An alternative to this account is on hand, however, which can be found at or close to the surface in some of the work of G.E.M. Anscombe (1981a), Philippa Foot (2001), and Thompson (2008). To introduce this account, which is, in fact, largely descriptive in nature, consider how we might go about answering the questions that have been raised here in our day-to-day lives. Say someone, pointing at a buzzard's wing, asked what makes that appendage an example of a wing. The answer to that question is, in fact, fairly straightforward and obvious: what makes that appendage a wing is the fact that its use is that of facilitating flight. What the person has picked out is a wing because the appendage indicated is one that has the function of facilitating flight, that it is what certain organisms use to fly. What makes a wing a wing on this account is very straightforward: it is an example of an appendage that occupies a purposive place in the context of the life that characterizes animals of a certain sort.

This brings us to what can reasonably be called the central explanatory concept of the account of wakeful consciousness developed here: that of a characterizing form of life. To introduce that concept, it is helpful to return to the explanation mentioned in the previous section in more detail. The explanation was simple: some appendage is a wing because it has the function of facilitating flight in organisms of a certain sort. Note that this explanation does not require that the appendage indicated actually be capable of fulfilling that function. We might, for instance, imagine that the appendage indicated is, sadly, a badly damaged and defeathered buzzard's wing, one incapable of facilitating flight. That appendage would be a wing not in virtue of its actual functionality, but because the appendage is what is used by buzzards as a sort to facilitate flight. That is, what makes the appendage a wing is that it has a proper function in the context of the life of buzzards considered as a kind of organism. Buzzards go about the business of living in a certain sort of way, which is what makes them buzzards as opposed to kestrels, say, and the indicated appendage is a wing if it play a certain sort of role in buzzards living that

way: it is what it is in virtue of what it is for. That is, buzzards have a *characterizing form of life*, a way in which they go about the business of living, and their appendage is a wing because of the role it plays in that characterizing form of life.

This may, at first glance, seem like a novel idea, but it is, in fact, part and parcel of the conceptual framework we employ in individuating organisms, their features, and their behaviours. Consider, as Thompson (2008, 70-1) does, the role played by generic statements in nature documentaries. While a buzzard is being depicted, the narrator might say something like ‘The buzzard hunts its prey by ambushing it.’ The truth of that statement does not require that all buzzards hunt by ambush, nor that most buzzards hunt by ambush. Instead, to make the generic claim that buzzards or the buzzard hunts its prey by ambushing it is to lodge a claim about how buzzards characteristically or characterizingly hunt. It is to take up a teleological understanding of what buzzards are and to make intelligible the features that buzzards have and the behaviour they exhibit by situating it within that teleological context. That is, in characterizing organisms by means of generic propositions, we are characterizing it as having a characterizing form of life at which organisms of that sort aim.¹⁴

These sorts of claims also come through in everyday contexts. We might, for instance, explain to a child that it ought not pick up a duckling by saying that it is ‘not good’ for the duckling to be picked up. In so doing, we are trying to explain to the child that picking up the duckling is something they should not do because it in some way interferes with the duckling going about the business of living the sort of life that ducks live, perhaps because the mother of the duckling will reject it after it has been in contact with a human being. Or we might say that one should make sure that a plant receives plenty of direct light. Such a claim, again, makes sense in the context of thinking of the context as the plant in question as something that goes about the business of living in a certain sort of way, with which an absence of direct light would interfere.

These sorts of claims and explanations reflect a view of organisms as entities that are directed towards a goal of a distinctive sort and which are the way they are because they are directed towards that goal. It is a conception of organisms as being what they are and the way they are because they are directed towards instantiating a characterizing form of life; a way of going about the business of living that is distinctive of organisms of the sort that they are. And the question about what it is that makes wings wings, sleep sleep, and so on and so forth is answered by means of this conception: what makes an appendage of an organism a wing is

¹⁴ This also emerges in discussions of the semantics of generic statements, as in Nickel (2016).

simply that it occupies a purposive place of a certain sort within the life of organisms of that sort, that it has a certain function or role to play in allowing the organism in question to instantiate the characterizing form of life of its kind. In the case of wings, that role will plausibly be that of facilitating a certain kind of movement.

This allows us to accommodate the possibility that wings could be had by a virtually endless range of creatures, regardless of whether they or their evolutionary histories resemble those of the creatures with which we are familiar on earth. A creature inhabiting a gaseous planet could easily be said to have wings on this kind of view, regardless of whether it bears much in the way of resemblance to the creatures with which we are familiar in terms of their evolutionary history. What matters is not how the appendages of those creatures came to be, but whether or not they occupy a purposive place in the context of the characterizing form of life of creatures of its kind of the right sort: i.e. that of facilitating flight. And the same goes for behaviours like sleep, migration, hunting, and so on and so forth. And, of course, wakeful consciousness: the sentient and intelligent creature inhabiting the titular planet of *Solaris* could be said to be wakefully conscious as long as it is in a state that plays a certain sort of role in the context of the characterizing form of life for creatures of its kind.

Nor is there any issue with accommodating cases of reproduction or reproductive behaviours. It is simply part of the way in which organisms of a certain sort go about the business of living that they reproduce themselves in a certain way and that they care for their offspring in a certain way. Such behaviours are among the things that characterize organisms of a certain kind. Nor does the account make life into a metaphysical primitive: what is required to be an organism, on this view, is not that something have an origin of the right sort, but that it is an entity that is directed or oriented around going about the business of living in a certain sort of way, a certain sort of pattern of sustaining and developing its own being.

And with that we have a straightforward explanation of why it is that features of states of wakeful consciousness can differ significantly across species and even lack some features that would appear to be essential to them and remain instances of wakeful consciousness. What makes it the case that all those states are instances of wakeful consciousness is, on the conception of organisms being outlined here, that those states are states of organisms which have a certain purposive place in the context of the characterizing form of life of organisms of a particular sort. That is, what makes a state an instance of wakeful consciousness is, on this proposal, a matter of whether or not that state is such that it plays some role or has some

function in the context of allowing organisms to instantiate the characterizing form of life of their kind. And that is consistent with particular instances of wakeful consciousness being impaired and not being capable of fulfilling that role: those instances will still have the proper function of fulfilling that role, even if that particular instance of it is impaired.

So, here, then, is the central suggestion of this section. The variability in the features possessed by states of wakeful consciousness, such as whether or not they essentially involves some form of phenomenal consciousness, is a reflection of the fact that wakeful consciousness is a condition of organisms. Wakeful consciousness, like wings, sleep, and other characteristics of behaviours or organisms essential to their going about the business of living, are to be individuated in terms of the role they fulfil in making it possible for organisms to instantiate the form of life which characterizes the kind of organism of which it is an example. So what makes a state that obtains in an organism one of wakeful consciousness as opposed to a state of, say, sleep or unconsciousness, is a matter of whether or not the relevant state has the proper function of facilitating what it is that wakeful consciousness facilitates in the context of the characterizing form of life of the kind of organism of which the bearer of the state is a member.

This proposal is bound to strike many as deeply controversial, mostly because it proposes a teleological conception of organisms, their characteristics, and behaviours. Those features and behaviours are, or so I have suggested, to be understood teleologically: in terms of what role they fulfil in allowing an organism to instantiate the form of life, the way of going about the business of living, that characterizes its kind. The individuation of such features as wings, sleep, and, indeed, wakeful consciousness, then, involves assigning them a purposive place within the context of the characterizing form of life of organisms of a certain sort or of certain sorts. The commitment to teleology in particular will, at first glance, seem controversial: teleology, it is often suggested, was rendered obsolete by Darwin's theory of evolution. This is a concern I will address in due course, but before doing so, I want to spend the next section offering a more extensive elaboration of the account of the metaphysics of organisms that I have begun to sketch here. With a fuller characterization of that account in hand, I will turn to a discussion of the relation between it and post-Darwinian evolutionary biology.

2: *The Shape of Life and Flourishing*

The aim of this section is to offer a further characterization of the notion of a characterizing form of life, and to give some indication of what is and what is not involved in instantiating it or flourishing. As I indicated in the previous section the account of the metaphysics of organisms I outlined there is far from novel: not only does it have a good claim to capture some aspect of our ordinary metaphysics, it has featured in the work of philosophers like Anscombe, Foot, and Thompson. In both Anscombe's and Foot's case, however, the notion of a characterizing form of life is left largely implicit and is never fully developed. Thompson, however, elaborates upon the notion of a characterizing form of life somewhat, and it is helpful to contrast his conception of it with the one I presented in the previous section.

The account of the metaphysics and individuation of organisms that I outlined in the previous section is overtly teleological: I argued that classifying something as a wing, a case of sleeping, a tentacle and the like involves assigning the thing in question a purposive place in the context of the characterizing form of life of organisms of a certain sort. What is distinctive of wings, on this picture, is that they are for something; they have a role to fulfil in allowing an organism to live the sort of life that characterizes its kind. This conception helps make sense of what I suggested was a notable feature of wakeful consciousness: that there can be impaired or improperly realized instances of it. On the account of the metaphysics of organisms I have outlined, the potential for such states is tied to the idea that wakeful consciousness has a proper function, and that a case of wakeful consciousness which lacks the features necessary to fulfil that function can be classed as impaired or imperfectly realized.

There is significant overlap between my views and Thompson's, although Thompson approaches the same issue by focusing on the logical form of the judgements by means of which we characterize organisms, touching, in particular, on the importance of generic propositions (cf. Thompson, 2008, 63-7). I have, for reasons of space, avoided approaching the issue in this manner because of the difficult technical issues raised by the semantics of generics. But Thompson's account and the one I have outlined resemble each other in various respects: Thompson too stresses that the individuation of organisms, their characteristics, and behaviours requires a grasp of the characteristic form of life of the kind of organisms in question and stresses that otherwise vexed questions in the philosophy of mind should be approached with these considerations in mind (cf. Thompson, 2004).

There is, however, a respect in which the account I have endorsed markedly differs from Thompson's: Thompson denies what I suggest is a central feature of the metaphysics of

organisms, that organisms and their characterizing form of life are to be understood teleologically. Thompson allows that we make judgements of deficiency, such as when a wing is broken, but denies that this sort of judgement possesses any normative force and instead does nothing more than note that there is some aspect in which a particular organism diverges from the characterizing form of life of its kind, without that sort of divergences carrying any normative significance (Thompson, 2008, 73-6). So, on Thompson's view, there is nothing teleological about the conception of organisms as individuated in terms of a characterizing form of life: divergence from a characterizing form of life does not, on Thompson's view, imply impairment or any other negative connotation.

As Foot notes in her discussion of Thompson in *Natural Goodness* (2001), there is good reason to think that this aspect of Thompson's view is not tenable. The difficulty with Thompson's view as it stands, Foot points out, is that it fails to capture the distinction between features that creatures of a certain sort characteristically possess and those which play a part in the life of organisms of that sort (Foot, 2001, 30). She offers the example of a blue tit's having a blue spot on their head, something which plays no role in allowing blue tits living their characterizing form of life, and a male peacock's having brightly coloured tailfeathers (ibid.). On the face of it, there is, as Foot points out, an important difference between a blue tit's head lacking colour and a male peacock's having drab tailfeathers, which Thompson's account cannot accommodate: lacking a blue spot on top of their head does not hamper a blue tit, but having drab tailfeathers certainly hampers a male peacock in going about the business of living as male peacocks characterizingly do. Both the blue tit without the spot and the peacock with drab plumage diverge in some sense from what blue tits and peacocks are characteristically like, but there is a clear difference between the two cases that Thompson's non-teleological view cannot accommodate.

So there is reason to suppose that the account of the metaphysics of organisms that individuates them in terms of characterizing forms of life needs its teleological component. Not only that, it is part and parcel of our ordinary way of thinking about organisms that they are teleological entities: we take it that organisms aim at a distinctive sort of life and will routinely make judgements about those organisms and their behaviours based on what we take that distinctive sort of life to be like.¹⁵

¹⁵ Clearly, moreover, such judgements do not rest on statistical generalizations: say, for instance, that, due to some historical contingency, no grizzly bear was ever allowed to hibernate. It would still be true that grizzly bears characterizingly hibernate.

All of this being said, it is not difficult to see why Thompson is hesitant to commit to a teleological conception of organisms. Some of these reasons will be addressed later in this chapter and in the more general defence of teleology in chapter 5 of this thesis, but in the remainder of this section I want to touch on a slightly different sort of worry about assuming that organisms are teleological entities which aim at instantiating the characterizing form of life distinctive of their kind: that such a view will, particularly in the human case, be prescriptive in an objectionable sort of way. The idea that there is something like *the* characterizing form of life of human beings certainly sounds objectionably prescriptive on the face of it, something that is worth addressing. Not in the least because, as Boris Hennig (2018, 232) notes, part of, e.g., Aristotle's misogyny seems to be rooted in endorsing a claim of exactly this sort.

A first point to be made in response to the worry that the view of organisms as aiming towards something like *the* characterizing form of life of its kind is overly prescriptive is that there is good reason to take it that the characterizing form of life of very many organisms is a determinable.¹⁶ That is, talk of *the* characterizing form of life is talk of something that can be realized in a number of different ways, similar to how something can have the property of being red by being scarlet or by being crimson. There are various reasons to believe this, but one of the most obvious reasons is the fact that various sorts of organism are sexually differentiated in a sometimes dazzling number of ways: take, for instance, the schizophyllum commune fungus, which is often described as being sexually differentiated into thousands of different sexes (Kothe, 1999). Differently sexed organisms of a species exhibit different behaviours and will often be possessed of different features and accommodating this observation requires that we allow that instantiating the characterizing form of life of a species can be done in a number of ways, as opposed to a single way.

The point that characterizing forms of life are most plausibly thought of as not only a determinable but, in many cases, as a determinable with a potentially huge varieties of determinates – such as in the case of the schizophyllum commune fungus – already goes some way in undermining the idea that the teleological conception of organisms I have been outlining is particularly prescriptive. The characterizing form of life of humans is, much like various other characterizing forms of life, going to be hugely determinable in a number of respects not just because of the various ways in which human beings can be sexually differentiated, but

¹⁶ For an in-depth discussion of determinables, see Funkhouser (2014).

because the characterizing form of life of human beings plausibly involves their inhabiting not just the natural world, but a social world of some kind constructed by themselves and other humans. That is, in the course of going about the business of living in the way that human beings characterizingly do, human beings construct social worlds of various sorts, dependent on the various social and historical circumstances in which they find themselves.

This adds another level of determinability to the characterizing form of life of human beings, and in addition helps clarify what does and does not follow from judgements of deficiency. Given the teleological conception of organisms I have been outlining, there is something faulty or wrong with an organism that is incapable of instantiating its characterizing form of life. But it should be stressed here that, for creatures such as ourselves, the mere non-functionality of some of our features does not and need not imply any kind of deficiency. Take the case of poor eyesight. The wide availability of glasses as a remedy to this, a feature of the kind of social world we inhabit, has the effect of making it the case that poor eyesight can hardly be called a deficiency: to those humans who find themselves in social circumstances where glasses are readily available, poor eyesight does not pose an obstacle of any meaningful sort in their going about the business of living.

This point is worth stressing, because it suggests that phenomena like disability are not, on the teleological picture of organisms I have been defending, straightforwardly natural phenomena when it comes to social creatures: the phenomenon of disability will be importantly social in that the social world in which a creature like a human finds itself may serve to make certain features an obstacle to instantiating the characterizing form of life of a human being or not. Or, put in slightly different terms, a characteristic like having poor eyesight is an obstacle to a human being's flourishing only in certain social contexts, it is not an obstacle in and of itself.

There is another point to be stressed in response to the worry about whether the teleological conception of organisms defended here is overly prescriptive. Taking it that human beings have a characterizing form of life is consistent with the idea that human beings are, in some way, self-constituting creatures.¹⁷ That is, one can hold both that human beings have a characterizing form of life and that what is distinctive of the characterizing form of life of human beings is the fact that human beings determine the shape and contents of that characterizing life to a significant extent. This is just the thought that part of what it is to flourish as a human being, i.e. what it is to instantiate the characterizing form of life of a human being, is that one have a

¹⁷ For this kind of idea, see, in particular, Korsgaard (1996).

degree of agency over how one goes about the business of living. So the thought that there is something like a characterizing form of life for human beings can go hand-in-hand with the thought that what is distinctive of human beings is precisely that they are, in various ways, free to choose how they go about the business of living.¹⁸

Taking the view that there is something like the characterizing form of life of a human being does come with a commitment to the idea that a human being can, in various ways, fail to function properly and thus fail to instantiate the characterizing form of a human being or, put differently, flourish *qua* human being. But the high level of determinability of the characterizing form of human life, and the fact that it is a form of life situated within a social context, means that determining what is and what is not an impairment of functioning and thus an obstacle to flourishing is not something that can be settled from the armchair: human functioning is importantly socially constituted.

All of this being said, however, there must be some level of commonality amongst all determinates of the determinable characterizing form of life of a human being: a common core that remains fixed throughout all characterizing forms of life of human beings, features that are necessarily part of any life that is recognizable as that of a human being. A capacity for agency, for instance, seems essential to any life that can count as characteristically human. Similarly, we might think that someone who is starving simply cannot be flourishing, such that successfully going about the business of living as a human being must involve access to food and so on. Finally, we may well think that anyone who is wholly a- or immoral cannot really be said to be flourishing *qua* human being and that being responsive to the requirements of morality to at least some degree is a necessary part of any distinctively human life.

Again, however, it pays to be careful here. Consider, for instance, the case of someone who is on hunger strike as a way of highlighting some injustice. As Anscombe remarks in the closing pages of her paper ‘Modern Moral Philosophy’, ‘it is a bit much to swallow’ that someone who is starving and in pain can be said to be flourishing, even if they can be said to be acting as virtuously in a moral sense as is possible (Anscombe, 1981b, 41). What this highlights, as Edward Harcourt (2016) notes, is that it is important to distinguish between what might be called dimensions of flourishing, or different aspects of characterizing forms of life. The case of someone who has gone on hunger strike as an act of protest against an injustice can be said to flourish in one respect, i.e. the moral one, but fail to flourish in another, i.e. in the nutritive

¹⁸ As Hardie (1965) reads Aristotle, this is, in fact, part and parcel of Aristotle’s views in the *Nicomachean Ethics*.

sense. Or consider another case, a person who is in excellent physical condition, but who is an inveterate conspiracy theorist who believes that the world is ruled by lizard aliens. Such a person could be said to be flourishing in the sense that they are exceptionally healthy physically, but we might well think their deeply conspiratorial mindset indicates that they are not managing to instantiate the epistemic aspects of the characterizing form of life of a human being.

Instantiating a characterizing form of life, then, is not an all-or-nothing affair: an organism may instantiate certain aspects of the characterizing form of life of its kind and fail to instantiate others, and may do so, furthermore, to differing extents. Of course, there will be tight connections between aspects of a characterizing form of life: take the case of a buzzard with a broken wing. The most immediate divergence from the characterizing form of life of buzzards in the case of this unfortunate buzzard is that of not being able to fly. But the buzzard's not being able to fly will likely serve to make it impossible for the buzzard to hunt, and lead to the buzzard's failing to flourish nutritively as it fails to feed itself. Or take the human case: someone who is entirely vicious epistemically or in a deeply deluded condition is likely to fail to be sensitive to the demands of morality in a given situation; their failing to instantiate the epistemic components of the characterizing form of life of a human being leads to their being unable to instantiate moral components.

More generally, there is good reason to suppose that characterizing forms of life are tightly unified. Consider again the case of a buzzard. The way in which the buzzard goes about moving through its environment is informed by what it eats, which determines and fixes certain features about the nature of its digestion, which determines various other features like body shape, mating practices, the way in which it tends to its young, whether or not it migrates, and so on and so forth. Even if it is possible to identify distinct aspects of the characterizing form of life of a buzzard, those aspects are interdependent. As James Lennox (2010) stresses, organisms are functionally integrated wholes: the different parts and behaviours of organisms, while functionally differentiated, are to be understood in terms of the contribution they make to the flourishing of the organism as a whole, and not in isolation from one another.

This idea, of dimensions of flourishing, will be crucial to the argument of the next chapter, where I outline a hypothesis concerning the nature of the purposive place occupied by wakeful consciousness in the context of the characterizing form of life of human beings. Identifying the nature of the purposive place occupied by wakeful consciousness involves identifying in what

respect a human being fails to flourish when they are the bearer of an impaired state of wakeful consciousness. By considering the way in which being the bearer of an impaired state of wakeful consciousness constitutes an obstacle to instantiating the characterizing form of life of a human being, we can get a sense of a central aspect of the function of wakeful consciousness. For now, however, I want to turn to some of the objections that the view of the metaphysics of organisms that I have outlined here might be thought to face, beginning with the widespread, but false, idea that one can only conceive of organisms as teleological entities if one commits to the idea that organisms were designed to go about the business of living in a certain way.

3: Teleology without Design

As I have made clear throughout this chapter, the account of the metaphysics of organisms that I have outlined is, unlike e.g. the similar account developed by Thompson, teleological in nature: it starts from the idea that the individuation of organisms involves having a grasp of the characterizing form of life of organisms of its kind. Organisms, on this conception, are purposive entities, entities possessed of an end: that of instantiating their characterizing form of life and thus to flourish. As I already noted, the idea that organisms are to be understood in teleological terms, i.e. that they are to be individuated in terms of the characterizing form of life at which organisms of the relevant sort aim, is apt to strike many as a major sticking point of my account: teleology has, over the course of recent centuries, received something of a bad rap.

In this section I want to address one reason that is sometimes given to explain why it is objectionable to think of organisms in teleological terms: the thought that thinking of organisms in that manner implies that organisms are designed to go about the business of living in the way that they do. And this, of course, implies that there is something like a designer, some kind of purposive force, that designed organisms. As everyone will know, this kind of view was once widely endorsed in various parts of the world for various reasons. The idea being that some kind of divine or supernatural entity designed the various sorts of organisms to be and behave in the way they do.

Famously, of course, this is the sort of view which was orthodoxy around the time that Darwin published his *On The Origin of Species* (1859), which argued that organisms were not, in fact, designed by some kind of divine entity, but that organisms are the way they are and behave in the way they do because of a process of evolution by means of natural selection, making it possible to account for why organisms seem perfectly adapted to going about the business of

living in a certain sort of way without having to appeal to some non-natural force or agent. It would not, in fact, be until the early twentieth century that Darwin's theory of evolution would become orthodoxy, after it was synthesized with Gregor Mendel's theory of heritability, but it is now nigh universally accepted.¹⁹

I mention these points here because it is sometimes suggested that it was Darwin who finally did away with teleology in biology. This claim is advanced, for instance, by Michael Ghiselin in a number of his writings. According to Ghiselin, '[b]iologists have the unteaching of teleology as one of their major responsibilities', suggesting that a belief in teleology is akin to a belief in astrology (Ghiselin, 2002, 490). In his paper 'The Darwinian Revolution as Viewed by a Philosophical Biologist' (2005), Ghiselin goes into some further detail as to why he takes it that all teleology is to be expunged from our thinking of organisms. Darwin, Ghiselin argues, delegitimized what Ghiselin dubs 'theosophy', which he understands as 'reasoning as if the world were the reflection of Divine Providence or anything like it' (Ghiselin, 2005, 129). It follows, Ghiselin argues, 'that teleology must be rejected categorically'; that there is no further place for it in the post-Darwinian world and that it is, in fact, 'part of the intellectual Kitsch that has come down to us from antiquity' (Ghiselin, 2005, 129-30).

Ghiselin does not explicitly say why he takes it that the delegitimization of theosophy implies that teleology is to be categorically rejected, but it is easy enough to put it together from Ghiselin's more general remarks about how he understands Darwin's theory of evolution. Crucial to Darwin's insight, according to Ghiselin, is that evolution is not a telic process, one that proceeds towards some aim: instead, evolution is, as Ghiselin sees it, a thoroughly blind and mechanical process, which produces novel kinds of organism and novel properties in organisms 'in a sense by accident' (Ghiselin, 1997, 153). If organisms and their features are the output of a non-telic process, then it obviously a mistake to think of organisms as designed in any meaningful sense: things that happen by accident per definition do not happen by design.

Now, there is ample space to ask questions about Ghiselin's characterization of evolution as an entirely blind process. Advancements in understanding of molecular biology, particularly concerning the processes where by organisms repair their DNA from damage, and the rise of so-called 'niche construction' theories of adaptation both suggest that the purposive behaviour of organisms is, in fact, a force that drives evolution into certain directions to at least some

¹⁹ For some discussion of the development of Darwin's theory and the birth of modern evolutionary biology, see Provine 2001.

extent, lending credence to the idea that evolution is not entirely blind.²⁰ Say, however, that we put these points to one side, and accepted Ghiselin's claim that evolution truly is an entirely blind process. Does it follow from accepting that claim that one needs to categorically reject teleology, as Ghiselin suggests? Or, more specifically, does it make sense to think of organisms in teleological terms only if one thinks of them as entities that were in some sense designed to live the kinds of lives that they do?

The answer is, of course, a resounding no. Merely thinking of some entity as teleological or purposive does not require that we think of it as being designed to fulfil that purpose. This much was already obvious to Aristotle. While Aristotle is well-known to have held that organisms are typically produced by means of a telic process of reproduction from other organisms of the same kind, he also thought that certain kinds of organisms, i.e. certain shell-fish, were generated by means of blind necessity (cf. Ransome Johnson, 2005, 200). That is, Aristotle allowed that blindly necessary material processes could produce teleological entities, organisms like shell-fish which have a characterizing way of going about the business of living which it is their purpose to instantiate.

Ghiselin's claim that teleology only has a foothold as long as we think of organisms as the product of purposive processes and thus as designed to live in a certain sort of way reflects a failure to distinguish between two sorts of ways in which something can be teleological. There is, on the one hand, what we might call extrinsic teleology. This is the sort of way in which a hammer might be said to have a purpose: its purpose is that of, say, facilitating the nailing together of wood and other materials in virtue of the fact that it was designed in order to fulfil that purpose. But there is another way in which an entity might be said to be teleological, by being intrinsically teleological. Organisms are teleological in this sense on the view I have outlined: they are teleological in virtue of the fact that they aim at maintaining themselves and living a certain kind of life. But this is perfectly consistent with organisms being the output of a blind process: it would just be a matter of pure happenstance that the process had thrown up an entity that is thus directed and purposive.

There is, then, a difference between an entity's being teleological or having a purpose because it was designed to have the purpose and an entity's being teleological simply because it is an

²⁰ See Shapiro (2013) for a helpful discussion about the ways in which organisms alter their DNA over the course of their lives in the process of repairing the damage undergone by DNA during cell division and because of environmental stresses; see Laland et al (2016) for an introduction to the idea that organisms create their own environmental niches.

entity of a particular sort. Even if we follow Ghiselin in thinking that evolution is a wholly blind process, that is perfectly consistent with organisms being purposive in the latter sense: it would not commit us to the idea that organisms are designed, but merely that evolution had, by accident, come to produce entities which are purposive in the way that organisms are. Once we distinguish between extrinsic and intrinsic teleology, it is easy to see that Ghiselin is too quick to claim that there is some sort of tension between Darwin's discoveries and teleology: such a tension only exists if we not only accept Ghiselin's gloss on evolution as entirely blind, but if we also take it that an entity cannot be teleological or purposive without having been designed. But as we already saw, there is no need to follow Ghiselin in endorsing that idea: as we saw, even Aristotle – arguably *the* philosopher of teleology – allows that teleological entities can come about by means of a blindly necessary material process.

So, there is no reason to follow Ghiselin in supposing that taking it that organisms are purposive or teleologically individuated is in tension with Darwinian theories of evolution, even if we assume, as Ghiselin does, that the process of evolution is blindly necessary and that its output are more-or-less accidental. In the next section, I want to go a step further. Not only does post-Darwinian evolutionary biology do nothing to rule out a teleological conception of the metaphysics of organisms, evolutionary biology is, in fact, complemented and in a significant sense dependent upon the teleological conception of organisms I have outlined in this chapter: the teleological conception is necessary in order to individuate the features of organisms that evolutionary biology offers explanations of even if we assume that evolutionary biology provides us with non-teleological explanations of those features.

4: *Teleological Explanation & Evolutionary Explanation*

By way of conclusion, I want to address a topic which I have not, so far, raised: that of the relation between the teleological conception of organisms on which they are to be understood as aiming to instantiate the characterizing form of life of their kinds and the explanations of organisms and their characteristics thrown up by evolutionary biology. This basically returns us to the etiological account discussed in the first section. As pointed out earlier, endorsing the teleological account of the individuation of organisms does not require that one think of those organisms as designed: one can conceive of organisms as individuated teleologically while also allowing that they are the products of a non-teleological causal process, as Aristotle already recognized. So there is no difficulty between taking it that the organisms and their features can be explained in the causal terms employed by evolutionary biology. But this does not tell us a

great deal more than that there is, in principle, no tension between the teleological account I have been outlining over the course of this chapter and the explanations offered up by evolutionary biology, and thus does not give us an account of how and if the two fit together.

The issue with the etioloical account, according to which the function of some feature of an organism depends on whether it was selected for in the course of evolution because it produces a certain sort of effect, I suggested, was that it requires that we be able to individuate organisms and, more specifically, what it is for organisms to reproduce. That is the case because identifying when and where some feature is selected for in the course of evolution by means of natural selection requires that we have a grasp on what is for evolution to occur, which minimally seems to involve one generation of organisms passing along their genetic information to a new generation of organisms. Unless one is able to individuate organisms, then, one cannot identify when and how evolution occurs and any account of how a feature of an organism evolved thus presupposes an ability to pick out organisms. The teleological account, I have suggested, can be understood to fulfil this role.

So evolutionary explanations, i.e. explanations of how features of organisms emerged over time by means of natural selection, requires the teleological account: evolutionary biology rather unsurprisingly cannot get off the ground unless one can individuate organisms. It is worth spending some time on this point because, while it is, on the face of it, fairly innocuous, it is a claim that is at least somewhat controversial in the light of the way in which biology developed as a discipline over the course of the twentieth century. It is not entirely uncommon, for instance, to find some biologists and philosophers of biology go so far as to either deny that organisms exist or argue that organisms have no significant explanatory role to play in evolutionary biology. Perhaps the most popular, if not necessarily most sophisticated, expression of this kind of view is due to Richard Dawkins, who, in his popular-scientific work *The Selfish Gene* (1976) describes organisms as nothing more than ‘survival machines – robot vehicles blindly programmed to preserve the selfish molecules known as genes’ (Dawkins, 1976, xxi).

Dawkins can be understood as a populariser of what is often dubbed a ‘genocentric’ conception of evolutionary biology. On such conceptions, which became popular over the course of the twentieth century, evolution is to be understood as nothing more than the shifting genetic profile of a population of organisms. If one conceives of evolution in this way, it may seem as if one need not talk about organisms at all in studying evolution: all that there is to evolution

is tracking a change in which genes are present within some population and how prevalent they are. The organisms are, on this account, epiphenomena: they are automata, the behaviour and development of which is fixed by the genetic information with which they are born – Dawkins' robot vehicles.

Such a conception of evolution is vulnerable to the same sort of worries that affected the etiological account. Namely, evolution manifestly involves more than the occurrence of some genetic change. Say, for instance, that a nuclear device of some sort detonated and caused huge genetic variations to occur within some population of organisms: new genetic information is introduced via these variations and the prevalence of others decreases, and so on and so forth. But we would not, in this case, say that the population of organisms has undergone evolution. For evolution to occur, that population of organisms must reproduce and pass along genetic information to the offspring that joins the population upon being born. And with that we are back at the question of what it is for an organism to reproduce itself and we are back to where we started: the teleological account of organisms, which affords reproduction a certain sort of purposive place in the context of the typifying form of life of organisms of a certain sort. Indeed, consider what is involved in so much as individuating a gene: what makes a gene a gene is arguably that it plays a certain role in reproduction, and just like that we are back to square one.

There is another, empirical reason to be sceptical of genocentric views which turn organisms into mere automata, acting out some pre-given and fixed genetic programme encoded in their DNA. There is strong empirical evidence in favour of the idea that organisms do, in fact, alter their own genetic information over the course of their lives. The most prominent example comes from the fact that DNA is routinely damaged, both by external factors – like radiation or toxins – and internal factors, like errors in cell replication (Ciccio & Elledge, 2011). It is estimated that each cell in the human body suffers as many as 10^5 DNA lesions per day (Hoeijmakers, 2009). Such cellular damage, if left unrepaired, can cause hugely deleterious effects for organisms. And this is presumably why organisms possess a complex suite of mechanisms which have the function of repairing DNA lesions: these mechanisms might kill off cells which contain damaged information, or they can even splice and put together strands of DNA, thereby heading off the effects faulty genetic information might have for the health of the organism (Friedberg, 2003). Crucially, this means that the organism cannot just be running off a pre-programmed genetic code: in the course of repairing its DNA, an organism in effect shapes its own genetic pattern in a number of ways. Some, such as James Shapiro

(2017) have even suggested that organisms repairing their own DNA by means of various mechanisms is an important driver of evolution. The Dawkins-style view of organisms as mere automata acting out a genetic programme, then, does not seem to stand up to what we have learned about organisms.

So where does that leave us with respect to the question of the relation between evolutionary biology and the teleological account? In order to answer that question, consider the following scenario. Say that there is a species of corvid living along the coast of western Siberia, which feed by using their beaks to crack open shellfish that are left behind when the tides recede. The corvids in question are far from the only birds in the region who feed on the same shellfish, which happen to be extraordinarily plentiful. Say, however, that the beak of the corvids is quite unlike the beak of any of the other birds in the region that feed on the same shellfish, even though there is nothing in the way in which the corvids go about the business of living to require a beak shaped in the distinctive way that theirs is shaped.

This is an obvious case in which evolutionary biology in particular might be uniquely suited to explain why the beak of the corvids is shaped in the particular way that it is. It might become clear from the fossil record, for instance, that the corvids are relatively recent arrivals to the shores of Siberia, originally having arrived on the heels of a group of Paleolithic hunter-gatherers. The beak of the corvids might have its distinctive shape, then, because the corvids in question originally went about the business of living by feasting on the scraps left behind by hunter-gatherer groups only to, say, become stranded in Siberia and resort to feeding on plentiful shellfish. In such a case, an evolutionary explanation can offer an explanation of why organisms are the exact way they are, illuminating why they have the distinctive characteristics that they do. But while such evolutionary information can help us understand why organisms have the characteristics they do in just the way they do, it does not tell us what those features are, and as such there is no tension between it and the teleological account I have defended. No account that takes evolutionary processes as its starting point for the individuation of organisms can succeed, even in principle, because individuating evolutionary processes presupposes that one be able to individuate organisms.

Having spelled out the teleological framework for the individuation of organisms, I now turn to what is, in effect, the central task of the thesis: to offer up an account of the function of wakeful consciousness. I develop this account by discussing three cases of impaired wakeful consciousness, cases in which wakeful consciousness – for one reason or another – is not

adequate to fulfil its proper function. What emerges from that discussion is a hypothesis concerning the purposive place that wakeful consciousness should be understood to occupy within the context of the characterizing form of life of humans in particular and organisms with a capacity for wakeful consciousness more generally.

Chapter 4: *The Function of Wakeful Consciousness*

Introduction

In the previous chapter, I outlined a teleological conception of organisms in terms of which their characteristics and behaviours are to be understood and accounted for: they are to be understood in terms of the purposive place they occupy in the context of the characterizing form of life of the relevant sorts of organisms. In this chapter, I employ the metaphysical framework of the previous chapter and turn to what is, in effect, the central question of this thesis: what is wakeful consciousness? As wakeful consciousness is a condition of organisms, answering this question is a matter of determining what wakeful consciousness is for in the context of the characterizing form of life of organisms. It is, in other words, a matter of determining what the proper function of wakeful consciousness is in allowing organisms to instantiate their characterizing form of life and to thus flourish *qua* the sort of organisms that they are. In what follows, I argue that wakeful consciousness can be understood as having an epistemological function: that of putting its bearers in touch with reality. Wakeful consciousness, or so I will suggest, can be understood as a type of epistemological stance or comportment, which has the proper function of acquainting organisms with their world.

Before outlining and defending that claim, it will be necessary to deal with some methodological preliminaries and clarify in what sense there can be talk of anything like *the* function of wakeful consciousness given both the unity and the high level of determinability of the characterizing forms of life involved. These issues are addressed in section one. Sections two to four develop an account of the nature of the impairment in three impaired cases of wakeful consciousness as a way of homing in on wakeful consciousness' function. In section five, I draw on these cases of impaired consciousness to put forward a hypothesis about the nature of the function that is fulfilled by wakeful consciousness: that its function is epistemic in character in that its role is that of facilitating contact with the world. In section six, I critically discuss two other proposals concerning wakeful consciousness, due to James Stazicker and Matthew Soteriou respectively. Finally, I discuss how the account I have outlined can be expanded to include organisms other than humans in section seven.

1: *Methodological Preliminaries*

In the second section of the previous chapter, I highlighted a number of ways in which the characterizing form of life of organisms can be a kind of determinable. In the case of sexually differentiated organisms, organisms of different sexes are likely to have characterizing forms of life that differ in certain sorts of ways. But there are also cases where organisms of the same sort fulfil different sort of roles: worker bees have a different characterizing form of life than a

queen bee, for instance. In the case of humans, this determinability is even more pronounced. This is so, I suggested, because humans characterizingly inhabit not just the natural world, but social worlds of their own collective construction, suggesting that the characterizing form of life of human beings will differ across different historical and social circumstances. In addition, it is natural to think that part of what is distinctive of the characterizing form of life of human beings is that they have some degree of agency over the shape of their own lives: they are not, as other simpler creatures are, bound to live a determinate sort of life.

In addition, it is worth highlighting that characterizing forms of life are unitary in quite a strong sense, in that the characteristics of behaviours of organisms are strongly interdependent. Take the case of a buzzard's beak. The beak of a buzzard is the way it is, of course, because buzzards are raptors, which procure sustenance by hunting and killing prey. But the beaks of buzzards also play a role in their reproduction, in that it plays a role in their feeding their offspring. And the way in which buzzards reproduce will, in turn, depend on such things as their habitat, the way in which buzzards construct nests, and so on. All of this will also depend on the nature of the buzzard's internal processes: the way in which a buzzard's digestive system is set up will be dependent not just on what it eats but also on its circadian cycle and so on. All of this is to say that determining the proper function of some characteristic or behaviour of some organism will of necessity involve taking into account its characterizing form of life as a whole, as the various characteristics and behaviours of organisms are essentially interdependent.

These points coalesce to raise an important question for the purposes of this chapter: how does one go about the business of determining something like *the* function of a phenomenon like wakeful consciousness? At first glance, any such talk is bound to be overly simplistic. Take, again, the case of buzzard's beak. It is of course correct to say that a buzzard's beak has the function of tearing flesh and breaking bones by means of a scissor-like movement and thus has the function of allowing the buzzard to feed itself. But as we already saw, this is only true at a certain level of abstraction. A buzzard's beak also has a role in its reproduction, in that it uses it to feed its newly hatched offspring. In addition, a damaged beak would inhibit the buzzard's ability to groom itself, and rid itself of whatever parasites or insects might try and make a home among its feathers. Finally, damage to the beak may well inhibit a buzzard's ability to vocalize and thus to make its presence known to other buzzards. On reflection, then, it seems that the purposive place of a buzzard's beak in the context of a buzzard's life is a complex one, making it too simplistic to claim that its function is just that of tearing flesh and crushing bone.

Much like a buzzard's beak, wakeful consciousness' proper function is predictably complex – something on which we will touch in subsequent sections. And this brings into question whether it so much as makes sense to talk of anything like *the* unique answer to the question of what something like a beak or wakeful consciousness is for and whether it is, instead, preferable to think of those things as having a number of functions. There is something right about this worry, because it is obvious that it is simply false to assume that something like a buzzard's beak, or indeed any feature of complex organisms, has just one use, such as that of tearing flesh. But accepting this much does not mean that there is no sense of talking about something like the core function in these cases: the claim that a buzzard's beak has the proper function of tearing flesh does, after all, have the ring of truth about it. So what is required is some way in which we can sift through the complicated proper functions of characteristics of organisms like beaks or wakeful consciousness and find a way of identifying something like the core function of those features.

To answer this question, it is helpful to highlight a difference between the ability of the different functions of a buzzard's beak to explain what makes it the thing it is in the first place. It is, given the point made above, not false to say that what there is in some region of spacetime is a buzzard's beak because it has the proper function of facilitating the grooming of feathers: that is one of the functions of a buzzard's beak. But note that the facilitating of grooming is not in and of itself sufficient to make something a beak. Octopuses have beaks, but they do not use them to groom themselves; and there are plenty of appendages that have the function of facilitating grooming without being beaks. That the appendage has the proper function of grooming is certainly part of what makes a buzzard's beak what it is, i.e. a buzzard's as opposed to an octopus' beak, but it does not explain what makes a buzzard's beak in the first place.

The case of the buzzard's beak makes clear that there is a distinction to be drawn between what might be called primary and secondary functions of organism's characteristics and behaviours. The primary function of the characteristics and behaviours are what make the characteristics and behaviours the characteristics and behaviours that they are. That is, it is because an appendage has the function of tearing flesh and breaking bone by means of a scissor-like motion that the appendage is a beak. Further functions, such as facilitating grooming, the feeding of offspring, and so on and so forth, also have a role to play in individuating the appendage, but do not make it the sort of thing that it is, i.e. a beak, in the first place: instead, these further functions make the appendage in question a beak of a particular sort. That is, the

further functions play a role in making the beak a buzzard's beak as opposed to a beak of a different sort.

These points are helpful for making clearer what a satisfactory account of wakeful consciousness must achieve. Ideally, such an account will put forward the primary function of wakeful consciousness, the function that makes a condition of a creature one of being wakefully conscious. This will involve determining which of the functions fulfilled by wakeful consciousness in the case of an organism are secondary, and serve to make a case of wakeful consciousness a particular kind of wakeful consciousness, such as human wakeful consciousness as opposed to, say, bottlenose dolphin wakeful consciousness or the kind of wakeful consciousness of which a bee might be the bearer. We will touch on one such secondary function in the case of human wakeful consciousness. Wakeful consciousness in the human case has, or so I will suggest, a distinctive role to play in facilitating a person's acting in light of their prudential and, more importantly, moral values. That function, however, is, or so I will argue, secondary to the primary function of wakeful consciousness: that of enabling contact between an organism and its world.

There is another methodological point to discuss, related to the fact that the function of wakeful consciousness in humans may well be socially determined to at least some extent. There is, as already discussed at some length in chapter one, a connection between wakeful consciousness and the idea of a state of mind, in the sense invoked in, for instance, the legal context. An impaired state of wakeful consciousness can be understood as an inhibition to general mental functioning. And it can hardly be doubted that conceptions of proper mental functioning have shifted over time. But the fact that there is an element of historical contingency to human functioning does not entail that there is not some core to that functioning that is responsible for making it distinctly human. Of course, this core will be quite general, such as that human functioning requires a capacity for agency of various sorts. This being said, I will, throughout the chapter, offer some indications of the ways in which there are aspects of the function of wakeful consciousness that may be socially determined.

In what follows, I make the case that the primary function of wakeful consciousness is epistemic by considering three impaired cases of it, with each being arguably more impaired *qua* state of wakeful consciousness than the former: severe drunkenness, the case discussed in chapter 1 of 'not knowing what one is doing' as it obtains in a person in the grips of a delusional episode, and, finally, a case that straddles the divide between wakefulness and sleep,

somnambulism. While the three cases of impaired wakeful consciousness differ in various respects, the impairments considered together offer a strong indication of the primary function of wakeful consciousness. What is common to the three cases and arguably what makes them impaired, at least *qua* state of wakeful consciousness, is that they involve an inhibition in the capacity to find out how things stand in the world.

2: Drunkenness

Compared with the other two cases of impaired wakeful consciousness discussed in this chapter, the case of impaired wakeful consciousness discussed in this section is wholly mundane and common across a variety of cultures and historical circumstances: drunkenness. Alcohol has been consumed by a huge variety of cultures for at least 10,000 years (cf. McGovern *et al.*, 2004), and with that comes inebriation or drunkenness. The fact that drunkenness is such a familiar condition can serve to obscure the fact that it is a condition associated with a truly staggering array of sometimes apparently inconsistent symptoms. Anecdotal evidence as well as various studies show that consumption of alcohol and drunkenness is associated with increased aggressiveness, but can also serve to increase altruistic tendencies; that it can relieve feelings of anxiety but also increase them; that it can inflate a person's ego in one case but depress them in other cases (cf. Steele & Josephs, 1990, 921).

The generally accepted way of explaining why the consumption of alcohol produces such a wide range of effects is that drunkenness is an importantly cognitive phenomenon (cf. Sher *et al.*, 2005, 92-99). The effects of alcohol consumption vary depending on the nature of the mental phenomena that obtain or go on in the person consuming alcohol. The consumption of alcohol influences a subject's state of mind, altering what goes on within it in various ways. In what follows, I consider the nature of the state of mind of a drunk person and consider what it is about drunkenness that makes it an impaired state of wakeful consciousness. What is it, in other words, that sets apart the state of mind that obtains in a drunk but nevertheless wakefully conscious subject from the state of mind in one whose wakeful consciousness is not impaired: how does the mental situation of the inebriated person differ? The answer, I will suggest, lies in a certain sort of carelessness on the part of the inebriated person; a kind of underutilization of their mental resources, which in turn causes the epistemic grip of the inebriated person on the world to loosen.

Consider the sort of things a drunken person might do which we put down to the fact that they are drunk. O'Shaughnessy discusses the following case, involving a drunk person finding themselves in a drawing room they often frequent in London in 1900 (O'Shaughnessy, 2000, 126). Stumbling over to the drinks cart, the drunken person somewhat wildly reaches for a decanter full of whisky and fails to notice that their sleeve is caught on a stack of priceless, delicate coffee cups, leading them to smash the priceless porcelain objects all over the floor of the drawing room. The subject's drunkenness is clearly relevant to what goes on in this sort of case, but in what sort of way? One tempting answer points to the well-known fact that the consumption of even a small amount of alcohol decreases hand-eye coordination and reaction speeds. So we might put the person's knocking over a stack of priceless porcelain cups down to their simply lacking appropriate hand-eye coordination for the task of retrieving the whisky without incident.

There is something to this answer, in that a loss of hand-eye coordination clearly plays some role in making the drunken person knock over the porcelain cups. But that sort of explanation does not really go far enough and arguably does not capture the systematic nature of the influence of alcohol on a person's mind. That alcohol makes one more clumsy is something of which one could scarcely fail to be aware if one were a denizen of Victorian England, which was marked by high rates of alcoholism and political debate about the effects of widespread alcohol consumption (cf. Hands, 2018, ch. 1). If we assume that the person so clumsily reaching for the decanter of whisky has some awareness of the effects of alcohol, we might wonder why the person does not take extra care to offset the effects of alcohol given the circumstances they are in. Why, we might ask, is the person not extra cautious in reaching for the decanter full of whisky?

This question points us in the direction of a more complete explanation of the behaviour of the drunken person. What goes wrong in the case described by O'Shaughnessy involves more than a mere decrease in hand-eye coordination on the part of the drunken subject. The issue is more general than that: there is something wrong with how the drunken subject comports themselves more generally. Assuming, as per the description of the case, that the drunken person often frequents the relevant drawing room, they can scarcely fail to be aware of the fact that a drawing room of the Victorian era is bound to be filled with delicate and expensive objects. We can also assume that they are aware of the fact that there is a certain way in which the mores of the time require one to behave in a drawing room of the sort that they are now in.

O'Shaughnessy himself proposes the following analysis of the situation in which the drunken subject finds themselves because of their drunkenness. There is, O'Shaughnessy argues, a distinction to be drawn between the tensed orientational and indexical knowledge of one's current situation and more general knowledge of drawing rooms (O'Shaughnessy, 2000, 126-7). The drunken subject stumbling around the drawing room, O'Shaughnessy argues, has a good deal of tensed and orientational knowledge: assuming they aren't 'blind drunk', the drunken subject can be said to know various things, such as that they are in the particular drawing room they are in, that the current year is 1900, that they travelled there in a horse-drawn carriage, and that the alcohol is on the opposite of the drawing room, and so and so forth. Where things go wrong, O'Shaughnessy argues, is in the drunken subject's failure to connect up their tensed orientational knowledge with their more general knowledge about drawing rooms (O'Shaughnessy, 2000, 127). The behaviour of the drunken subject, O'Shaughnessy suggests, can be understood in terms of their failure to connect their indexical orientational knowledge with their more general knowledge of drawing rooms.

Normally, a person possessed of a good deal of general knowledge of the drawing rooms of the Victorian era, such as that they are apt to be filled with costly objects and that conduct within them is governed by the stifling structures of Victorian mores, will, upon realizing that they are now in such a drawing room, expect that the table on which they see the whisky decanter is also home to other valuable objects. They will, furthermore, realize that they have entered a place in which it is expected that one behave in a certain sort of manner. This combination of orientational knowledge with general knowledge allows a person to adjust their comportment: to take extra care, for instance, when reaching for whisky decanters precisely because Victorian drawing rooms are full of delicate and expensive objects; and to move in a measured and controlled manner through the room. On O'Shaughnessy's analysis, drunkenness involves a failure to integrate orientational knowledge of one's present situation with general knowledge about the circumstances in which one finds oneself: in coming to know that they have entered a drawing room, the drunken subject fails to draw on the body of general knowledge they have of drawing rooms, and thus do not act in light of that more general knowledge, leading them to behave in a way that is inappropriate given that they are in a room filled with delicate and costly objects (O'Shaughnessy, 2000, 127).

It is interesting to note that O'Shaughnessy's analysis is remarkably similar to one of the most influential cognitive models of drunkenness: the so-called 'myopia' theory of the effects of alcohol, proposed by Claude Steele and Robert Josephs (1990). On the myopia theory of the

effects of alcohol, what alcohol consumption does is lead to what Steele and Josephs term 'short-sighted information processing', which, in turn, causes the drunken subject to become less inhibited and more extreme in their behaviour (Steele & Josephs, 1990, 922). So, in the case we have been discussing, Steele and Josephs would suggest that the drunken subject's behaviour and knocking over of the priceless porcelain cups is a consequence of the subject's short-sighted processing of information: the subject simply sees the decanter full of whisky and reaches for it, without considering where they are and what the consequences of their actions might be. Nor do they consider that their overt drunkenness in the context of a Victorian drawing room might lead to social consequences and so on.

There is, in fact, a more colloquial way of putting the points made by O'Shaughnessy and Steele and Josephs respectively: that the drunken subject behaves in the way they do because they fail to think about what it is that they are doing or that they aren't thinking 'straight' as it is sometimes put. What is meant here when there is talk of thinking is not what philosophers tend to mean when they discuss thinking, where it is primarily conceived of as an act involving the active consideration of propositions and the relations that obtain between them (Geach, 1954). Instead, a more general notion of thinking, one stressed by Gilbert Ryle across his later writings (cf. Ryle, 1971, chs. 32; 34; 36; 37), is in play here, where to say that the drunken subject fails to think about what they are doing is to say that they fail to have their wits about them; that they fail to do what they do thoughtfully. It is to say that the drunken person is acting stupidly or rashly, without heed for the context in which they find themselves. That is, the drunken subject fails to draw on sections of their knowledge in acting as they do, leading them to behave in ways that are inappropriate and making them prone to accidentally smashing priceless porcelain cups.

This notion of thought and thinking what one is doing remains somewhat underexplored in the philosophy of mind. It can involve the kind of activity that philosophers tend to refer to as thinking, i.e. the grasping and manipulation of propositions or contents more generally. The notion of thinking what one is doing or doing something intelligently, as Ryle sometimes also puts it (cf. Ryle, 1949, 30-39), involves performing an action in a way that draws on all of one's mental resources relevant to what one is trying to do. It involves drawing on one's existing stock of knowledge in one's perceptual and agential interactions with the world, being sensitive to the context in which one finds oneself, and keeping one's wits about oneself. The drunken person fails to do this: while they know full well that drawing rooms of the sort which they are now in are stocked with precious objects, they fail to draw on that knowledge as they act,

leading them to miss the porcelain cups, to behave in a way that is inappropriate, and so on and so forth.

Drunkenness, then, can be understood as a distinctive sort of epistemic phenomenon: a kind of carelessness on the part of the drunken subject, who does not draw on the epistemic resources available to them in their interactions with the world. Unlike the sober subject, the drunken subject does not, in entering a drawing room, realize that they have entered a place filled with delicate and costly crockery and glassware. They fail to think about what it means to find themselves in a drawing room, to think about what sort of place a drawing room is and what might be found there. As a result, the drunken person behaves in a way that is inappropriate given the circumstances in which they find themselves. Rather than moving with care and checking whether they can safely reach the decanter of whisky without knocking anything over, the need to behave in this manner simply does not occur to the drunken subject. The drunken subject fails to utilize a mental resource available to them, i.e. their knowledge of what drawing rooms are like and how they ought to behave there.

It might be asked, however, why one should understand the case of drunkenness as a case of underutilization of mental resources, as opposed to a lack of mental resources. That is, why not simply say that the drunken person who knocks over the priceless porcelain cups is clumsy and thus, in some way, say they couldn't help but do so. On this analysis, it's not that the drunken person is careless, but that they are simply clumsy and uncoordinated. There is likely something to be said for this analysis in cases of extreme drunkenness, but it is less obviously true for less extreme cases. Someone who is drunk can, after all, try and hide their drunkenness: they might move with extra care to hide the fact that they are drunk, or try and think deep and hard before reaching for the decanter. What this indicates is that drunkenness cannot simply involve a lack of mental resources: if the mental resources were simply unavailable, a drunken person would not be able to act in a way that compensates for their drunkenness. What the possibility of attempting to hide one's drunkenness indicates is that the mental resources are not absent, but that the drunken person simply lets them go unused: a person who is not blind drunk can in principle do things thoughtfully, it just so happens that they are careless and do not tend to do so.

We get an inkling of an important property of wakeful consciousness here and what it means to be in touch with the world. What we see in the case of drunkenness on the analysis I've been outlining is a failure on behalf of the drunken subject to muster their mental resources. The drunken subject does not have 'their wits about them' as they interact with the world and as a

consequence, the epistemic fecundity of those interactions with the world decreases. For a sober subject equipped with some general knowledge concerning the drawing rooms of the Victorian era, one comes to know that one is in a place filled with costly objects simply in coming to know that they have entered a drawing room of the Victorian sort. The same thing is simply not true of the drunken subject: as they stumble into the drawing room, what they learn is just that they are in the drawing room, without the thought that this means that they are in a place filled with expensive porcelain crockery so much as crossing their mind – not because they are ignorant of what drawing rooms are like and what they are filled with, but because they exhibit a kind of alcohol-induced carelessness and failure to pay much in the way of heed to where find themselves.

We can think of this as a reduction in the breadth of what might be dubbed the epistemic horizon of a subject, brought on by the excessive consumption of alcohol. A sober subject's interactions with the world are fruitful in a way that the drunken subject's interactions are not because the sober subject, in interacting with the world in a careful and thoughtful manner, can leverage their mental resources in order to learn about their environment: their general knowledge of drawing rooms will help prime them to spot the porcelain cups that their sleeve is caught on as they reach for the whisky and stop them from smashing them. Inebriation, on the other hand, narrows the epistemic horizon of a subject by making it difficult for them to draw on what they know in interacting with the world in the way they do. In extreme inebriation, this takes on the form of a subject who is entirely bereft of a sense of where they are, other than, perhaps, a purely egocentric orientational understanding of it. There is a sense, then, in which the world can be said to recede from the inebriated person's view, as they fail to draw on what they know about the world in a general sense.

The case of drunkenness is illuminating in another respect: it highlights what we might think of as one of the secondary functions of human wakeful consciousness. One well-known effect of the consumption of alcohol is, as mentioned earlier, a lowering of inhibitions. A person who is careful to respect those around him may, under the influence of alcohol, tell a joke that is hurtful to those around him or use a slur they would never use while sober. Similarly, a person may engage in violence far more readily while drunk than they would while sober. These kinds of facts highlight that there may well be an important moral component to wakeful consciousness. The otherwise respectful and kind drunken person who callously uses a slur to refer to someone can be said to do so precisely because they are not thinking about what they are doing: they are failing to act in light of the values they hold. Or, as O'Shaughnessy puts it

at one point, drunkenness – particularly of an extreme kind – can come with a failure ‘to utilize a basic mental resource, one’s ‘table of values.’ (O’Shaughnessy, 2000, 131)

The fact that drunkenness comes with a certain epistemic carelessness, then, has consequences for the ability of a person to act in a way that is consistent with the values they hold and in this sense wakeful consciousness can be understood to have a function that is at least partly ethical. Given that human beings are ethical creatures, in that their behaviour may be judged to be moral or immoral, wakeful consciousness plays some role in making ethical action possible: the properly wakefully conscious subject is in a position to act in light of their values in a way that simply isn’t possible for a subject who is asleep or unconscious. Drunkenness gives a first hint of how the ability to act in light of one’s values can be diminished in impaired states of wakeful consciousness: the epistemic carelessness and failure on the part of the drunken subject to muster their mental resources leaves them out of touch with aspects of their system of values.

The discussion of drunkenness has given us a first indication of how we might think of the function of wakeful consciousness. The epistemic carelessness found in the case of the drunken subject suggests something crucial about wakeful consciousness in that it suggests something about the way in which wakeful consciousness puts us in touch not just with our current context, but to draw on our more general knowledge of the world to understand where we find ourselves and what it is like. Wakeful consciousness, or so I have suggested, is in some way connected to the capacity to draw on one’s mental resources – one’s skills and knowledge of the world – in one’s transactions with the world. For the drunken subject, the world is receding in an important sense: their failure to draw on what they know about the world leaves their current interactions with the world narrow in a peculiar sort of way, informed more by whatever dispositions they may happen to have than their grasp on what is the case around them. And there is also an indication of one of what one of the secondary functions of wakeful consciousness might be thought to be: that of making it possible for a subject to act in light of their values.

Many of these ideas will emerge again in subsequent sections, but before moving on, I want to briefly touch on a sense in which there is an element of historical contingency in our understanding of wakeful consciousness here. The analysis of drunkenness I have proposed is bound to come across as negatively charged or involving some kind of negative attitude towards drunkenness, something that is apt to smack of moralism of the worst Victorian sort. Indeed, in his review of O’Shaughnessy’s *Consciousness and the World*, Johannes Roessler

makes exactly this point in raising the question of whether O'Shaughnessy's analysis of drunkenness, on which I have drawn, does not amount to a cheap bit of moralizing (Roessler, 2004, 166).

This question is worth taking seriously not necessarily because of there being an open question about whether or not drunkenness is something of which we should take a dim view, but because there are plenty of examples of cultures in which hallucinogenics are employed in a way that is taken to be revelatory of how things actually stand or stand in a non-physical or spiritual world (Winkelman, 2021). And this might be thought to introduce a kind of cultural relativity into our judgements about what constitutes an impaired state of waking. What strikes us, as denizens of a particular cultural world, as a deeply impaired state of wakeful consciousness brought on by the consumption of some hallucinogenic may, to denizens of a cultural world quite unlike ours, seem like a non-impaired and, indeed, superior state of wakeful consciousness.

So does this mean that a discussion of drunkenness or impaired states of wakeful consciousness cannot reveal anything about the state of wakeful consciousness other than what we, given our current historical circumstances, happen to think about it? Such a judgement would arguably be too rash, because the disagreement here boils down more to a disagreement about the nature of the world and its constitution than it does to a disagreement about the nature of wakeful consciousness. That is, the belief that a hallucinogenic might actually help wakeful consciousness fulfil its function is contingent on the idea that the consumption of that hallucinogenic opens up some new, perhaps more significant, epistemic domain; such as a spiritual world, say. But this is consistent with the idea that wakeful consciousness has the function of putting us in touch with the world: the disagreement here is about whether or not what we might call the (no pun intended) mundane world is the only world or the only aspect of the world.

One can, in order to avoid cultural absolutism in this case, conditionalize the conclusion being drawn here: that drunkenness and other states of mind caused by the consumption of mind-altering substances count as impaired states of wakeful consciousness given the assumption that the mundane world is all there is. Our assumptions concerning reality are, of course, far from neutral and are, in fact, the output of a complex historical process, and it pays to be aware of this fact. When the claim is conditionalized in this way, one makes clear that judgements of wakeful consciousness are at least partially constituted by the social worlds in which human

beings happen to find themselves, without thereby giving up the idea that there is a primary function to wakeful consciousness: that of putting us in touch with the world.

3: *Delusional Wakeful Consciousness: Not Knowing What one is Doing Revisited*

In this section, we return to a case of impaired wakeful consciousness already discussed in chapter 1: the sort of wakeful consciousness that obtains in someone who is, to borrow O'Shaughnessy's phrase, in an 'occurently delusional' state of mind. Where the emphasis in the discussion in chapter 1 was on elaborating the idea that there can be impaired states of wakeful consciousness, however, the emphasis in the discussion here will be on the nature of the condition that obtains in someone in the grips of a delusional episode and on getting clear of the way in which wakeful consciousness is impaired in such cases. As we will see, the nature of the impairment differs quite drastically from the one found in drunkenness. Where the drunken subject's condition is one of epistemic carelessness and a failure to properly draw on the mental resources available to them, this is not at all true of the subject in the grips of delusion: indeed, someone who is in the grips of a delusional episode may well be utilizing all their mental resources! The impairment in the cases of delusional wakeful consciousness lies not in laziness, but in having a representation of the world that is riven with deep inconsistency of a particular sort which this section explores, meaning that the subject is no longer in a position to ascertain how things truly stand both with regards to themselves and with regard to the world.

It is also helpful to point out what I am not trying to do: I am not, here, trying to offer an account of the nature of delusions. There is substantive disagreement about both what delusions are and how they arise. While there is, for instance, a venerable tradition according to which delusions are a form of propositional attitude or sort of belief, and this is how delusions are described in the DSM-5 (American Psychiatric Association, 2013), for instance. But there is plenty of disagreement to be had about that claim: in their book *Recreative Minds* (2002), for instance, Greg Currie and Ian Ravenscroft propose that delusions are, in fact, not propositional attitudes but episodes of imagining which a person mistakes for propositional attitudes. Yet other people, such as Shaun Gallagher (2009), propose hybrid-accounts of delusion, where delusions are to be understood as a confluence of cognitive factors and the phenomenological qualities of experience. There are also complicated issues about how delusions arise in neurophysiological terms, and what puts one at risk for suffering from delusions. I will not attempt to address these questions in what follows.

My emphasis will, instead, and as already mentioned, be on cases like the one discussed by O'Shaughnessy and in chapter 1 of this thesis: a case where someone's delusions are such as to make it the case that a person can be said to be in a state of mind which is such that they cannot be said to know what they are doing. To bring out how that question is distinct from the question of the nature of delusions, it is helpful to point out that the mere having of a delusion – whatever exactly delusions are – does not immediately suffice to make it the case that a state of mind of not knowing what one is doing obtains.

Say, for the sake of argument, that delusions are, in fact, a form of hallucination – an impingement of the sensory imagination upon perceptual experience, say. For it to be the case that one is in a state of mind of not knowing what one is doing, the mere having of such a hallucination is insufficient, because it seems eminently possible that someone might be aware of the fact that they are hallucinating. There is empirical evidence to suggest that those who suffer from hallucinations in fact often do have insight into the fact that their hallucinations are hallucinations: according to the findings of Collerton *et al* (2005), for instance, a good chunk of persons who actually suffer from hallucinations are, in fact, aware of the fact that their hallucinations are hallucinations. Thus it seems possible that, if there are delusions which take the form of peculiar phenomenologically conscious episodes, that one could be the subject of a delusion without thereby being in a state of mind of not knowing what one is doing.

The same point can be made if we assume, again for the sake of argument, that delusions are a form of propositional attitude. Here, for instance, is how the DSM-5 characterizes delusions:

Delusions are fixed beliefs that are not amenable to change in light of conflicting evidence. Their content may include a variety of themes (e.g. persecutory, referential, somatic, religious, grandiose). [...] The distinction between a delusion and a strongly held idea is sometimes difficult to make and depends in part on the degree of conviction with which the belief is held despite clear or reasonable contradictory evidence regarding its veracity.

(DSM-V, American Psychological Association, 2013, 87)

The mere having of a belief, or even many beliefs, that are not amenable even in the face of evidence that suggests they are false is, however, clearly not sufficient for someone to be in a state of mind of not knowing what they are doing. Indeed, it seems highly likely that most human beings harbour some numbers of such beliefs, without it thereby following that they are the subject of a defective state of wakeful consciousness.

Consider the events that took place on the 6th of January 2021 in Washington DC, where a large group of supporters of Donald Trump stormed the Capitol Building in an attempt to frustrate the procedure whereby the senate ratifies the presidential elections, which Trump had lost. Many of those who stormed the Capitol did so, in part, because of their belief in the so-called ‘Q-Anon’ conspiracy theory.²¹ The Q-Anon conspiracy is, at its core, a recycling of antisemitic blood libel conspiracies, and its core tenet is that Trump is the figurehead of a movement of patriotic Americans who are seeking to overthrow a ‘deep state’, made up of political figures and Hollywood celebrities, who Q-Anon conspiracists believe traffick children for paedophilic purposes and blood sacrifice. But the Q-Anon conspiracy embraces much more than that: many Q-Anon conspiracists believe that John F. Kennedy Jr., who died in an aeroplane crash in 1999, in fact faked his own death as a way of escaping an assassination plot by Hilary Clinton and that Kennedy Jr. would become Trump’s vice-president during Trump’s second term as president. Yet other sections of Q-Anon believe that Trump’s teenaged son is, in fact, a time-traveller equipped with technology developed by Nikola Tesla around the end of his life.

At the time of writing – mid-2021 – the Q-Anon conspiracy continues to thrive, despite the fact that Trump long ago left the White House and Joseph Biden was inaugurated as president. Many, including elected officials like Marjorie Taylor-Greene and Matt Gaetz continue to insist that the presidential election was fraudulent and that Trump in fact still is, or will soon once again be, made president of the United States. Indeed, Q-Anon symbolism is a common sight at the various protests against the lockdowns meant to prevent the spread of COVID-19, with many Q-Anon conspiracists seeing the spread of that virus as an operation or hoax by the Chinese government to thwart the uncovering of the deep state human trafficking scheme. Many continue to believe that they are unique amongst others: that they are part of a small group of the patriotic elect who are engaged in a secret war against anything ranging from the World Health Organization to the global forces of communism.

Q-Anon conspiracists believed these outlandish conspiracies strongly enough to risk storming the seat of American government. But the Q-Anon conspiracists who stormed the Capitol Building in Washington DC were not in a condition of not knowing what they were doing: their representation of the world was entirely twisted, but there is no reason to suppose they weren’t capable of knowing what they are doing. That is, there is no reason to suppose that the Q-anon conspiracist is the bearer of a defective state of wakeful consciousness. This is worth stressing

²¹ For a detailed discussion of Q-Anon, see Rothschild (2021).

because what is believed by the Q-Anon conspiracist is no less bizarre than what one might find in the case of a delusional subject, like the person who, in the midst of a delusion about being the god of the Abrahamic tradition, addresses a herd of cows as if the latter were angels. It may be that the delusional person is suffering from some sort of hallucination whereas the Q-anon conspiracist is not, but, again, the mere experiencing of hallucinations is not sufficient to be in a state of not knowing what one is doing.

All of this is to say that there is a question to be raised about how to understand a case of delusional wakeful consciousness that is not, or at least not directly, a question about the nature of delusion: the mere having of delusions, whatever delusions are, is not sufficient for someone to count as being in a state of mind that is characterizable as being one of not knowing what they are doing. So how are we to understand what makes a delusional state of wakeful consciousness a defective case of wakeful consciousness? What sets apart the case of the person addressing a herd of cows, apparently in the grips of what is called a ‘grandiose delusion’ in the psychological and psychiatric literature (cf. Knowles *et al*, 2011), from the case of the Q-anon conspiracist storming the seat of government? What makes it the case that one can be said to not know what they are doing but not the other?

The answer, or so I want to suggest, is to be found not so much in whether or not someone is the subject of delusions but in whether and how the delusion interacts with the broader set of beliefs and items of knowledge that the person suffering from delusion has, which, ultimately, will help clarify the nature of wakeful consciousness. One notable, if very obvious, characteristic exhibited by wakefully conscious creatures is that they are active in a certain sort of way: the wakefully conscious can and typically do interact with the world in a coordinated way. In the human case, this type of interaction involves reliance on a vast mass of beliefs and items of knowledge: one has beliefs about where one can find one’s hat, and not only that, one has beliefs and one knows such things as how to move in a way that avoids obstacles, what sorts of things are and aren’t obstacles to one’s movement, what sorts of things are likely to be found in certain contexts, what those objects are like, as well as beliefs about what sort of thing one is, and so on and so forth. All of these cohere into an epistemic structure that is one’s total representation of the world.

When it comes to drunkenness, or so I argued in the previous section, we have a sort of epistemic carelessness: the drunk subject fails to utilize or draw upon aspects of their representation of the world, such as what objects there are in elegant drawing rooms, or their

beliefs about what is appropriate or moral behaviour. The issue in the case of the person who does not know what they are doing or who is occurrently delusional is not epistemically careless in this manner: instead, their situation can be understood as being a consequence of a delusion opening up a rift in their representation of the world, which means that that representation comes to be incoherent.

Take, again, the case of the Q-Anon conspiracy theorist. There is no doubt that someone who believes the Q-Anon conspiracy theory has a grossly distorted representation of the world: there is, after all, no reason to believe that there truly is a shadowy cabal that secretly controls the world, nor that Donald Trump did not, in fact, lose the election to Joe Biden. But these beliefs, outlandish as they may be, are fundamentally consistent with what one might dub the practical core of our representation of the world: the portion of our representation of the world concerned with such things as, e.g., when and how to eat, how to move through space, how to keep track of time, what one's emotions signify, how to prepare a meal, and so on and so forth.

This practical core of our conception of the world consists of our views about what sort of actions we can perform, how to perform them, and what we, given the sort of thing that we are, need and the sort of capacities that we have. This practical core is made up of the kinds of things J.L. Austin mentions in 'A Plea for Excuses' (1956, 8): the stock of beliefs, distinctions, and practical know-how that humans form in the course of going about the business of living, as opposed to being formed in the armchair. It is practical in that this core is, at root, a conception of ourselves and our capacities and what is good or desirable for us and what is not given the sort of creatures that we are, it is the fundamental conception we need of ourselves in order to pick our way through the world. The content of the Q-anon conspiracy is at odds with very many things and sensible beliefs, but it is not inconsistent with the set of one's beliefs about how to make a sandwich or catch a bus, or with the idea that a human being needs sustenance.

Take, for instance, the belief that the sun is rising – something a child may actually believe literally occurs while also believing that the sun is at the centre of the universe. While this is an inconsistency, it is not such as to fly in the face of the primitive beliefs we all share about what sorts of things we can see. Or take the case of someone who is self-deceived, and thinks that they are far more handsome and capable than they in fact are. This self-deceived individual may act more brashly than is prudent, but they still have a conception of themselves as being a human being, a creature of a certain sort, equipped with certain agential capacities and with

certain needs, it is just that they fancy themselves a cut above the rest of humanity. But that, again, is perfectly consistent with the practical core of beliefs we, as humans, form concerning our own most basic agential capacities *qua* human being.

It's precisely at this point that a person who cannot be said to know what they are doing differs from the Q-Anon conspiracy theorist, even though both have a grossly distorted conception of the world. Take the case of the person discussed by O'Shaughnessy, who is suffering from a grandiose delusion according to which they are the god of the Abrahamic tradition – whether this is due to a hallucination of some form or a belief of some sort, what matters in this case is that there is a deep inconsistency between the practical core of the representation of the world and the delusion of being the *maximum ens* of the Abrahamic tradition. If one conceives of oneself as an infinitely powerful entity with inhuman capacities of some sort, one will struggle to square that with the fact that one is not, in fact, invulnerable, or that what is in front of one is not the angelic host but a bemused group of bovines. That is, part of the practical core of our representation of the world is a conception of ourselves as a being of a certain sort, and that conception of ourselves informs how we behave: if one knows one is a human and vulnerable in various respects, one can make sense of why one's actions play out in the way they do; but if one takes oneself to be a god of some sort, matters are entirely different.

This is particularly evident in cases of Cotard's delusion, sufferers of which appear convinced that they are dead or somehow do not exist, on which we already touched in chapter two (cf. Enoch & Trethowan, 1991; Berrios & Luque, 1995). Those who suffer from Cotard's delusion sometimes cease to feed themselves or engage in extremely risky behaviour and even self-mutilation (DeBruyne *et al*, 2009). What can be seen at work in such behaviour, from the perspective of a discussion of wakeful consciousness, would appear to be an attempt to come to terms with what is deeply inconsistent: on the one hand, the conviction that one is dead, and on the other the fact that one is wakefully conscious and one is interacting with the environment and people in various sorts of ways. There is a deep and insurmountable rift between on the one hand taking it that one is dead and decaying and sitting in a chair talking to a psychiatrist on the other, with those suffering from Cotard's delusion often offering complicated and convoluted explanations trying to square these two facts (cf. Billon, 2017).

This gives us a way of understanding in what sense someone suffering from a grandiose delusion or Cotard's delusion cannot be said to know what they are doing: their delusion, whether that delusion is taken to be a propositional attitude, hallucination, or imaginings

mistaken for propositional attitudes, introduces a rift in the representation of the world that they, like any human being does, employ in the course of making sense of what it is that they are doing. And in this sense, the state of mind of not knowing what one is doing is a rational phenomenon of some sort: it is an attempt to make sense of what one is doing and what is happening around one utilizing an epistemic structure, i.e. one's representation of the world, that is riven with inconsistency.²² As a result, it is not possible for the subject in question to make sense of what they are doing and they are not in a position to recognize either the true character of their own actions or the world.

Where the drunk person fails to utilize their representation of the world, then, the person who does not know what they are doing or who is occurrently delusional is not failing to utilize that representation: instead, the defect lies in the fact that their representation of the world has fractured and that there are deep inconsistencies between different aspects of that representation. Insofar as that representation is one on which one needs to draw in order to make sense of what one is doing and what is happening, one is no longer in a position to be in touch with the true character of either.

The point here is not that this conception needs to be largely veridical, indeed, it can contain massive falsehoods of various sorts: such as that the sun rotates around the earth, say; or that the world is ruled by a cabal of malevolent aliens. Crucially, however, it cannot be such as to be wholly inconsistent with what we know about the world we inhabit or those features that are essential to our going about the business of living in the way we do. There is a network of perfectly mundane beliefs and, indeed, knowledge that we have relevant to our picking our way through the world and interacting with it and others and it is precisely here that the delusional subject faces an insurmountable task of squaring the delusional belief that they are, e.g. the God of the Abrahamic tradition: the latter belief, and the network of further beliefs that is needed to shore it up in the face of all evidence to the contrary, conflicts with the system of beliefs and items of knowledge on which we rely in going about the business of living.

In the case of the person who does not know what they are doing, we have a case of someone who is, in some significant sense, in the dark about what they are. This misunderstanding is practical as opposed to theoretical. The Q-Anon conspiracist believes a variety of deeply irrational things, but they are not in the dark about whether they, as a human being, need to eat, nor are they confused about how to go to the store. What we see in the case of the subject who

²² See also Karl Jasper's discussion of delusion, as discussed in Gorski (2012) and Maj (2013).

does not know what they are doing is not just a theoretical inconsistency, but an inconsistency between the practical core of their representation of the world – made up of the various beliefs that dictate something as simple as how to respond to a feeling of hunger or how to avoid an obstacle – and their delusions.

In the next section, I discuss one more impaired state of mind, one that falls into the ambiguous region dividing sleep and waking: the state of mind that obtains in a sleepwalker or somnambulist. As will be discussed in the next section, it is doubtful whether this state of mind is one of wakefulness. Indeed, it at best seems to amount to something like a state of quasi-wakefulness. Nevertheless, reflecting on the nature of the mental dynamics unfolding in the sleepwalking subject will prove helpful for our discussion of the nature of wakeful consciousness in that it makes clear the difference between being in touch with an environment and being in touch with the world.

4: *Somnambulism*

Sleepwalking or somnambulism is a well-known and not entirely uncommon phenomenon. It is most common among children – with up to 15% of children between the ages of 5 and 12 engaging in sleepwalking – but it also occurs occasionally among adults, with as much as 2 to 3% of the adult population sometimes sleepwalking (cf. Plazzi *et al*, 2005, 194; Bjorvatn *et al*, 2010). It is also associated with certain sorts of neurological diseases: REM-behavioural disorder (RBD) – a form of sleepwalking that can come with violent symptoms – for instance, is associated with diseases like Parkinsons (Windt, 2015, 97). Sleepwalking can involve the person sleepwalking doing mundane or comparatively ordinary things, such as, say, making a sandwich or cleaning the kitchen. But sleepwalkers can also sometimes engage in violent behaviours, with some beating, strangling, or even killing other people while sleepwalking (cf. Kotagal, 2009; Howell, 2012; Windt, 2015, 94).

As mentioned earlier, it is doubtful whether those who sleepwalk can be said to be wakefully conscious. Indeed, as its very name suggests, sleepwalkers or somnambulists are usually taken to be asleep while sleepwalking. Somnambulism seems to occupy an ambiguous place, somewhere in between wakefulness and sleep, with the somnambulist's behaviours being reminiscent of those exhibited by the wakeful, but their mental situation being quite unlike that of a properly wakefully conscious person. It is perhaps best understood as a state of quasi-waking, or a state that is neither one of sleep nor of wakefulness. That there are such states, which seem to defy straightforward categorization, should not surprise us: given the

metaphysics of organisms outlined in the previous chapter, this is something we should expect given that function and functioning is very rarely a simple matter and instead comes in gradations. That there can be states of mind that straddle the divide between sleep and wakeful consciousness, then, should not surprise us.

An immediate point of interest about sleepwalkers, which sets them apart from a subject who is sleeping soundly, is the nature of the perceptual capacities they possess. Sleep does not involve a total absence of perceptual capacities: some sort of perceptual monitoring of the environment typically continues during sleep, which is why a sufficiently strong perceptual stimulus can rouse someone from sleep. Someone who is sleepwalking, by contrast, can be assumed to have a far more sophisticated battery of perceptual capacities. It is difficult to imagine how someone who is sleepwalking could perform a complicated task, like getting up, going to the kitchen and making themselves a sandwich, for instance, without possessing the capacity to not only see, hear, and feel various sorts of things but also to watch, listen, and feel for various sorts of things. That is, it is difficult to see how one could account for the capacity for complicated multi-step tasks exhibited by sleepwalkers without ascribing to them not merely the passive perceptual capacities associated with sleep, but also a capacity for perceptual agency of some sort.

This claim may be received with scepticism by some, because it might be assumed that ascribing some sort of capacity for agency to a somnambulist means that we also need to hold them accountable for their actions. But this, of course, is not something we do, even in extreme circumstances: a person who, during an episode of sleepwalking, killed his parents in law in Canada, for instance, was found not guilty because he was sleepwalking (cf. Broughton et al, 1994). And it might be thought that ascribing capacities for agency to sleepwalkers means that we would need to find sleepwalkers responsible for what they do, and that the fact that we do not do this implies that it must be a mistake to attribute any kind of capacity for agency to sleepwalkers. Ernst Sosa (2005) employs a similar line of reasoning in order to deny that we can form beliefs while dreaming, for instance.

This line of argument is, of course, far too hasty, for reasons already discussed extensively throughout earlier in the thesis. Much like the delusional subject addressing the herd of cows, the somnambulist can of course be said to be doing something and doing it intentionally when they butter bread for their sandwich, but they are clearly in the condition of not knowing what they are doing: they are not in touch with the true character of their actions because they are

not in the right state of mind to be. The nature of the sleepwalker's state of mind prevents them from knowing what it is that they are doing. This is relevant to the case of the killings committed by the somnambulist mentioned in the previous paragraph. We do not hold the person in that case not responsible for what they did not because there was no 'doing' on their part, i.e. not because they don't have a capacity for agency, but because they were not in a position to know what they were doing when they did what they did. Or, more specifically, they were able to know what they were doing only under a very limited description: not, for instance, under the description, 'I, person so-and-so, am driving across my hometown at time t, X, with the aim of murdering my father-in-law, so-and-so' but under a description that is far more truncated, like the description 'driving across town to kill something'. That is, the somnambulating subject might be aware of what they are doing in driving across town, but lack any sort of occurrent awareness of why they are doing so or who they are or who they are setting out to kill.

This being said, there are ways in which the state of mind and cognitive circumstances of the somnambulist importantly differ from that of the subject in the grips of a delusional episode in important respects. The person who is in the grips of an occurrently delusional episode is, despite their impairments, still wakefully conscious. As mentioned earlier, it is not obvious that a somnambulist is awake. Indeed, recordings of the brain activity of sleepwalkers can be practically indistinguishable from those of a person who is sleeping soundly (cf. Schenck, 2007, ch. 8). And this brings us what is arguably an important difference between the occurrently delusional subject and the somnambulist: the occurrently delusional subject, while not in touch with the world, is at least epistemically oriented towards it; whereas the same is not obviously true of the somnambulist.

The somnambulist is clearly aware of their environment, of course, but it is far from obvious they manage to be aware of anything beyond that environment. The occurrently delusional subject has a grossly inconsistent and importantly misleading conception of reality, but still takes it that their perceptual contact with their environment reveals something about the world, even if their conception of it is false. That is, the occurrently delusional subject is aware of what is given to them by means of the exercise of their perceptual capacities is to be understood as providing information about some sector that is part of a more general world. It is not obvious, however, that the same thing can be said about the somnambulist.

Take again the case of the somnambulist who rises and makes himself a sandwich. Clearly, the somnambulist, in doing so, exhibits awareness of where their kitchen and fridge are. But is it right to say that they are aware, for instance, that the fridge is *their* fridge, or that the kitchen is in *their* house? Or that their fridge and house are at a certain determinate location of space and that their action takes place at some determinate time? There does not seem to be any reason to ascribe awareness of any of these sorts of facts to the somnambulist as they sleepwalk: they do not seem to have an awareness of anything beyond where the fridge is, where the kitchen is, and so on: there seems to be no reason to attribute to them the awareness that the fridge is their fridge or that it is in their house which is in say, Kenilworth, and that they are doing what they are doing at some particular time.

In this they markedly differ from the occurrently delusional subject. The delusional subject might be deeply deluded about where they are – they may believe that their bedroom orbits some distant star, say – but they are aware that they are somewhere within the world and that they are at some definite point in time. The delusional subject who does not know what they are doing is, in this way, still orientated towards the world: they still take themselves to be somewhere and somewhen within the world, even if their conception of the world is deeply mistaken. There does not seem reason to ascribe this kind of awareness to the sleepwalking subject: it is certainly true that they act within the world, but there seems no reason to suppose that they are aware that they are somewhere and somewhen within the world. There is a narrow sort of awareness of their immediate environment and, perhaps, things they know how to do and navigate by habit, but that is all.

That is not to say that the perceptual capacities of the somnambulist do not put some part of the world into view. Their home, which they navigate in their episode of sleepwalking, is firmly a part of the world. The perceptual experiences of the somnambulating subject are perceptual experiences of some sector of the world, but they are not in the right state of mind to make use of this in order to learn about the world. The state of mind of the somnambulist is impoverished to the extent that they lack the mental resources necessary in order to slot what they learn about their environment into their representation of the world because that representation – composed of a mass of beliefs and items of knowledge – is simply not available to them or operative during their episode of sleepwalking. The world has, in a sense, dropped out of their view. Or, more specifically, while the somnambulist may well know where they in fact are and would be able to access that knowledge and their broader representation of the world if they were

properly wakefully conscious, they lack access to their representation of the world while sleepwalking.

As O'Shaughnessy puts it in his discussion of somnambulism, there is a sense in which the somnambulist resembles an automaton in that it is 'unnatural to speak of self-determination' in cases of somnambulism: instead, O'Shaughnessy suggests, 'it is as if earlier stages of his mental life are the locus of causal forces which 'wound him up' and set him to doing what he now does' (O'Shaughnessy, 2000, 255). The somnambulist acts but it cannot be said that they determine what they do: in fact, it is not clear that the somnambulist has the sense of who, what, where, or when they are to know what they are doing. While somnambulists can sometimes remember what occurred during their episode of sleepwalking, they often report that the experience had a distinctly dream-like quality in that the episode felt like a dream rather than feeling like an experience of reality (Windt, 2015, 96).

There is a sense, then, in which somnambulism is importantly distinct from the situation in which the occurrently delusional subject finds themselves. But it is perhaps not entirely different from the sort of state of mind that obtains under extreme drunkenness. In extreme cases of drunkenness, the world might also 'drop out of view', leaving the drunken subject with only the most basic and egocentric awareness of their environment, entirely unable to draw on their store of information about where and when they are, their levels of self-awareness reaching its nadir. The situation of the sleepwalker is the same: they have an environment, which, for them, is not part of a world in which they find themselves because they cannot be said to have access to their representation of the world. It is not that they live in their own world, as we might say of someone prone to flights of fancy, but that they lack the cognitive wherewithal to situate anything in the world at all. And it is this what makes the case of the sleepwalker so different from the drunken subject or the subject in the grips of a delusional state of mind. While the world is receding from view for both the drunk and delusional person, they are still oriented towards the world and are at least still capable of grasping the fact that their occurrent perceptual contact with their environment is a view from somewhere at sometime by something which is revelatory of the world – even if their conception of the world is deeply mistaken.

The case of the somnambulist brings yet another distinctive aspect of wakeful consciousness into view: that of being oriented towards the world. The somnambulist can be presumed to know how things stand in his immediate environment and is capable of performing actions in light of that information. But his perceptual episodes are revelatory of his immediate

environment alone and not of the world as such: the somnambulist does not have the capacity to situate themselves within the world – they have no awareness of who, where or when they are; all these ingredients needed in order for one to learn about the world are absent. Their perceptual episodes reveal something about the world to the somnambulist, but they are not in a position to seize on that fact and can instead only really be said to learn about their immediate environment; they are adrift from the world.

5: *A Hypothesis: Consciousness and its Horizon*

Having discussed the cases of drunkenness, delusional wakeful consciousness, and the epistemic situation in which the somnambulating person finds themselves, I now want to draw the points that emerged from those discussions together and put forward a hypothesis concerning the primary function of wakeful consciousness. In his work on the function of myth, *Arbeit am Mythos* (1979), Hans Blumenberg imagines what the experience of the first hominid to raise itself up on two legs might have been like. As Blumenberg characterizes it, the transition to bipedalism was a watershed moment in that it marked an abandonment of the sheltered confines of the ‘primeval forests’ in favour of the immeasurably vast horizon of the world (Blumenberg, 1979, 4). And with this transition, Blumenberg argues, a new sort of task presented itself: that of reckoning with what might be found in the world and, more pressingly, what might ‘come at one’ from any of its corners (ibid., 4-6). Wakeful consciousness, I will now argue, can be understood in a similar sort of way: it is a gathering up and marshalling of one’s mental resources that has the proper function of bringing the world into view.

As has been touched on multiple times already over the course of the previous chapters, there is clearly some link between wakeful consciousness and the exercise of one’s perceptual capacities; a suggestion we found expressed by Rosenthal, for instance, in chapter two. But we have, by now, also seen abundant evidence to suggest that there is much more to the proper function of wakeful consciousness than the mere possession of a functioning set of perceptual capacities. The somnambulist has that much, but it is rather doubtful whether they could be said to be wakefully conscious. Indeed, what sets apart the somnambulist from the properly wakefully conscious subject seems to have less to do with the availability of perceptual capacities than it does with how the properly wakefully conscious can draw upon a set of mental resources that make one’s perceptual experiences a window from which one can learn more than how things stand in one’s immediate environment alone and instead can learn about the world.

It is helpful to capture this distinction by introducing a term of art that has its roots in the phenomenological tradition: that of an epistemic horizon.²³ Compared to the fully wakefully conscious, the somnambulating subject can be said to have a narrow epistemic horizon, in the sense that they are not in a position to learn about anything outside of their immediate environment: they can use their perceptual capacities to navigate their house and perform certain tasks, but it cannot be said that they are in touch with the world. This is not to say, of course, that their perceptual experience does not present the somnambulating person with some sector of the world: it's to say that the somnambulating subject lacks the cognitive wherewithal required in order to take advantage of this fact.

The difference in the breadth of the epistemic horizon of the properly wakefully conscious subject and that of the somnambulating subject can be brought out by considering the difference in what a somnambulating subject and properly wakefully conscious subject might learn in seeing what they do, for instance. Say, for instance, that both the somnambulating subject and a properly wakefully conscious subject see a red cardinal perched on a branch in their garden. The somnambulist may certainly be aware that they see a bird in front of them. But the properly wakefully conscious subject can learn a good deal more: in seeing the bird, they are not just in a position to learn that there is a red cardinal in front of them, they are in a position to, e.g., learn that there is a red cardinal in front of them in their garden in Kenilworth on a Tuesday in February of 2020. In fact, they could learn even more than that: they may, in seeing the red cardinal, learn that their plan to attract cardinals to their garden was successful, say; or that someone must have released the red cardinal because they are not native to the climes in which this particular red cardinal finds itself. Indeed, there is no end to the sorts of things that might be learned from the mere seeing of a bird in the garden for the wakefully conscious, and this demonstrates something about the breadth of their epistemic horizon.

As we saw in the discussion of drunkenness, that the perceptual episodes of the wakefully conscious are epistemically fecund in this manner is the consequence of the person doing something: keeping their wits about them and, in doing so, maintaining a state of epistemic readiness. A properly wakefully conscious person can learn what they do from their perceptual experience because wakeful consciousness involves a mustering of one's mental resources, or because they are in a position to think about what they are doing in the Rylean sense discussed above.

²³ For some discussion of Husserl's usage of the notion, see Pietersma (1973).

Having the world in view requires that one have and be capable of drawing on a representation of reality in doing what one does, it requires a battery of capacities, such as the capacity to situate oneself in space and time, an awareness of who and what one is, a capacity for rational reflection, and so on and so forth. That is, having the world in view requires that one be capable of acting intelligently, where that does not mean that one need to be occupied with propositions while one does something, but that one is alive to what it is that one is doing and how and where one is doing it. And this is important because acting intelligently is essential to being able to both learn about the world and fitting new information into one's existing representation of the world and thereby updating it: wakeful consciousness involves the constant activity of drawing on and updating ones representation of the world, and its epistemic function thus depends on a complicated set of capacities for epistemic agency.

As the discussion of delusional wakeful consciousness makes clear, one essential resource that the wakefully conscious must be able to draw on is a representation of the world constructed out of a mass of items of knowledge and beliefs. This representation of the world plays a dual role: on the one hand the wakefully conscious subject, as long as they think about what they're doing and keep their wits about them, can draw on aspects of their representation of the world in order to learn more about the world: the subject who sees a red cardinal at a certain place and at a certain time can learn that they are doing so by drawing on their knowledge of red cardinals, their knowledge of where and when they are in the world and so on. At the same time, a person can only be said to have the world in view if they can embed what is revealed about the world if they are in a position to draw on their representation of the world. The somnambulating subject lacked exactly this capacity and it means that the world has dropped out of their view: their perceptual experiences are revelatory of the world, but they lack the cognitive wherewithal to seize upon this fact. Perception puts into view some portion of the world, but being able to take advantage of this fact and to learn about not just one's immediate environment but about one's immediate environment *qua* part of the world requires that one be able to draw on a representation of the world in which what perception reveals can then be situated.

This kind of explanatory interdependence should, by now, be a familiar theme when it comes to the analysis of wakeful consciousness. The possession of a representation of the world is both a necessary condition for us to be in a position to take advantage of what perception reveals to us about the world and dependent upon our being able to draw upon it for vast portions of the content of the representation of the world on which we draw. In this way, our

representation of the world facilitates the conditions necessary for its own existence. Even what a child learns at the feet of their parents, after all, can only be truly learned if we are in a position to listen to and make sense of what they are saying, something that requires our being properly wakefully conscious. In this respect, the representation of the world that a properly wakefully conscious person must have is yet another example akin to a candle, where the convection induced by the flame makes possible the continuing occurrence of processes of combustion. In the case of the representation of the world of the properly wakefully conscious, the possession of an adequate representation of the world creates the conditions under which we are in a position to learn about the world.

Some of this knowledge is doubtless *a priori*. Something like an intuitive physics in John Campbell's (1994) sense, for instance, is likely to be part of the wakefully conscious representation of reality. Indeed, that intuitive physics seems to be available even to somnambulating subjects. In addition, a good deal of our knowledge about ourselves as ourselves may be *a priori* or practical in nature if, for instance, agentialist accounts of self-knowledge hold water.²⁴ Finally, if Thompson is right, the notion of a characterizing form of life, in many ways the central explanatory concept of the view of wakeful consciousness defended here, may be *a priori*: as Thompson sees things, our concept of a characterizing form of life is much like the 'I'-concept, in that its use is implied by our understanding of ourselves as alive and thus individuated in a certain sort of way (Thompson, 2004, 68). That is, in thinking of ourselves as human, we manifest our characterizing form of life, just as one comes into one's own thoughts by being the one thinking them (ibid.). The construction of the representation of the world necessary for wakeful consciousness, then, starts from certain foundations – certain core items of knowledge and beliefs that we hold simply in virtue of being the kind of things that we, as humans, are.

Our representation of the world can, and most likely always does, contain significant falsehoods. Someone committed to the explanations offered up by, say, the classical elements theory of chemistry and takes it that all matter is made up of air, earth, fire, and water will have a significantly misleading view of the world. But it does not therefore follow that such a person cannot be wakefully conscious. However, what is required, as we saw in the case of the delusional person, is that one's representation of the world not be grossly incoherent and incongruous with the world as it is presented to us perceptually and the knowledge on which

²⁴ For such accounts, see Moran (2001).

we depend in order to make our way through the world. The occurrently delusional subject addressing cows under the impression that they are the God of the Abrahamic tradition addressing the host of angels has a representation of reality that is grossly incongruous in this way, and is, as such, not properly wakefully conscious.

All of this makes it possible to at least begin the task of circumscribing the purposive place that wakeful consciousness occupies in the characterizing form of life of humans. Wakeful consciousness, I have suggested, can be understood as having the proper function of allowing its bearer to ascertain how things presently stand in not just their immediate environment but the world at large. To come to be wakefully conscious is to gather up one's mental resources, including a representation of the world, in order to maintain a state of epistemic readiness oriented towards the world: it allows one to take up what our perceptual episodes reveal and learn about the world by means of them. Wakeful consciousness, then, can be understood as a sort of epistemic posture with a distinctive sort of orientation: its onset is the mental equivalent of the moment described by Blumenberg, when the first hominid gathered up its strength and stood upright for the first time, orienting itself toward the world at large.

There is a close connection, then, between wakeful consciousness and our epistemic flourishing. Human beings having the characterizing form of life that they do involves them having a certain sort of awareness of the world, an ability to orient themselves within it and engage in transactions with it. No matter how much social worlds may differ or circumstances might change, it is difficult to imagine a form of life that could count as characteristically human in any meaningful sense unless it involved transactions with the world. Wakeful consciousness' function, understood in light of all of this, is to set the stage for those transactions by providing human beings with the right sort of epistemic orientation and posture to learn about the world that they inhabit and engage with it in a way that reflects their status as rational and social creatures. Wakeful consciousness allows us to not only successfully interact with the natural world, but also allows us to flourish in making it possible to draw on our existing stock of knowledge to navigate the social worlds that humans characterizingly construct.

6: *Stazicker & Soteriou on Wakeful Consciousness*

I now want to briefly compare and contrast my account of wakeful consciousness with those recently put forward by James Stazicker (2019) and Matthew Soteriou (2019) respectively. While there are, or so I will argue, elements to Stazicker's and Soteriou's respective views that

dovetail with the account of wakeful consciousness I have put forward, both accounts are ultimately too austere, and arguably pick out phenomena which, while doubtless part of what it is to be wakefully conscious, are less rich and complicated than wakeful consciousness.

According to Stazicker, the function of wakeful consciousness is that of making available two sorts of epistemic achievements: perceptual knowledge and justified perceptual belief on the one hand, and agential or practical knowledge, i.e., knowledge of what it is that one is doing on the other. Wakeful consciousness makes possible these epistemic achievements, Stazicker suggests, by making it possible for a subject to control their attention. So, as Stazicker sees things, the function of wakeful consciousness is to make possible the dual epistemic achievement of making possible perceptual knowledge and practical knowledge and it does this by affording its bearer with the capacity to control what it is that they attend to (cf. Stazicker, 2019, 154).

Given the discussion of the previous chapters, the points at which the view I have spelled diverge from Stazicker's are easy to see, but it is worth dwelling briefly on Stazicker's reasoning for drawing the conclusions that he does. Stazicker starts from a point that is not entirely dissimilar from the highly plausible idea on which I have already touched at multiple points: that there is an intuitive connection between being wakefully conscious and 'being in touch' with the world. In the previous chapter, I have suggested that we can flesh out this notion of 'being in touch' with the world as a cognitive phenomenon of some sort, which involves the wakefully conscious subject drawing on a more-or-less coherent representation of reality in their interactions with the world, which puts them in a position to learn about how things stand in that world. Stazicker's approach is rather different. Stazicker approaches the idea of 'being in touch' with the world from the perspective of the question of Cartesian scepticism. Drawing on Barry Stroud's (1984) discussion of Descartes' dream argument, Stazicker suggests that what is distinctive of wakeful consciousness is that it involves what he dubs 'conscious perception' or 'perceptual experience', as opposed to dreams, which do not involve perception (Stazicker, 2019, 150-1).

The thought, then, is that wakeful consciousness makes available a distinctive form of perceptual knowledge. But, as Stazicker goes on to note, this alone is not sufficient to distinguish wakeful consciousness from states that are not cases of wakeful consciousness. The example on which Stazicker focuses in order to make this point is one on which I have also touched a number of times: somnambulism. Stazicker makes a point with respect to

somnambulism which is, I take it, by now familiar: the somnambulating subject appears to have some sort of perceptual awareness of their environment (Stazicker, 2019, 140). As Stazicker notes, it would be difficult to explain how a somnambulating subject could manage to bring off complex actions like navigating their environment successfully unless the somnambulist possessed some sort of perceptual capacities. Crucially, however, Stazicker argues that the somnambulist lacks something that the wakefully conscious do have: knowledge of what they are doing and ‘voluntary control of their own actions’ (Stazicker, 2019, 141). It is because the somnambulist lacks this kind of practical knowledge, Stazicker suggests, that they are not to be held responsible for the actions they perform (Stazicker, 2019, 151).

These considerations lead Stazicker to the view that wakeful consciousness is to be understood in terms of the dual epistemic achievement of perceptual knowledge or justified perceptual belief on the one hand and practical or agential knowledge on the other. What grounds both of these epistemic achievements, Stazicker suggests, is that wakeful consciousness affords its bearer with control of their attention (Stazicker, 2019, 154). Stazicker’s remarks on the matter are, it should be said, somewhat brief, but the general idea he seems to put forward seems to be that the wakefully conscious are capacitated with respect to their capacity for attending in a particular sort of way, which their capacity for attention responsive to not just their intentions, but also to more general background attitudes (Stazicker, 2019, 156). In waking up, what one experiences, according to Stazicker, is ‘taking control of attention’ and thus becoming capable of, e.g., attending to what it is that one is doing and to one’s environment and therefore being in a position to know about those things (Stazicker, 2019, 157).

As noted above, Stazicker’s analysis starts from the almost irresistible observation that wakeful consciousness has some role to play in putting a subject in touch with the world or reality – an observation from which my account also takes its starting point – but there are also obvious difficulties with understanding wakeful consciousness in the way that Stazicker does. Most obviously, Stazicker’s analysis is, on the face of it, incapable of offering a satisfactory analysis of why two of the contrast cases discussed above are impaired or defective cases of wakeful consciousness. Consider the case of the delusional subject addressing a herd of cows as if the latter were the angelic host.

Clearly, what the delusional subject is doing is in some sense irrational and their state of mind is one of occurrent irrationality, but it does not seem that the person in the grips of the delusional episode can be said to lack control of their attention. While they can clearly be said

to lack some insight into the true character of their actions, it does not seem that this insight is a consequence of a lack of control over one's capacity for attending. Instead, or so I suggested, the diminished insight into the true character of their actions exhibited by the person in the grips of a delusional episode can be explained by the fact that the delusional subject's actions are performed in the light of a deeply inconsistent and fractured conception of reality. They are not in a position to not attend to what they are doing, they lack the cognitive resources to make sense of what they are doing. A similar point can be made about the severely drunk subject. As the drunken person knocks the priceless porcelain off of the delicate Georgian table, it is not that they are not in control of their attentive capacities, it is that they are failing to utilize those capacities. They fail to think about what they are doing, and can be held blameworthy for that precisely because they fail to utilize the mental resources available to them. To this other cases of impaired wakeful consciousness can be added: is someone who is in the grips of anger also someone who loses the capacity to attend to what they are doing or their environment? On the face of it, the answer to questions like this are negative.

At this point, a defender of Stazicker might retort that these points fail to amount to an objection to Stazicker and instead offer support to his account of wakeful consciousness. Stazicker, it might be said, has identified something like a necessary condition for being wakefully conscious, in that it is present even in impaired cases of wakeful consciousness like the sort of wakeful consciousness that obtains in a delusional subject. Such a response, however, simply highlights how important it is to situate wakeful consciousness in its appropriate biological context. As explained in chapter 3, organisms and their features are individuated in terms of their proper function. A consequence of this is that individuation of wakeful consciousness need not occur via actual properties of a particular case of wakeful consciousness. Take again the case of a human hand: the human hand, understood generically, has five fingers; but it does not, from that, follow that someone who loses their thumb no longer possesses a hand.

That is not to say that control of the attention, the core of Stazicker's analysis of wakeful consciousness, is not in some sense a necessary feature of wakeful consciousness, in just the same way that a thumb is a necessary feature of a human hand. But crucially, the necessity involved here is conditional: control of the attention is plausibly something that allows wakeful consciousness to fulfil its proper function, but that does not mean that it is the characteristic of wakeful consciousness that makes wakeful consciousness what it is. Again, the comparison with the human hand is instructive: the human thumb facilitates grasping, which is essential for the use of tools, and thus arguably something which is conditionally necessary for the

human hand to fulfil its proper function. But that does not entail that the thumb is what makes the human hand what it is: one can lose one's thumb and not thereby lose one's hand.

So Stazicker does not necessarily fail to identify some kind of component and perhaps even a crucial or essential component of wakeful consciousness, but his is not, on the face of it, a viable account of what wakeful consciousness is. On Stazicker's account, what are clearly examples of defective instances of wakeful consciousness, such as those that obtain in cases of delusional episodes, drunkenness, and fits of rage, are not counted as defective instances. Stazicker does not, then, afford us the means to accommodate such cases. This, it seems, is a reflection of the fact that Stazicker's account does not situate wakeful consciousness in its biological context, meaning that his account is not of the right sort to be an account of what wakeful consciousness is. Given that features of organisms like wakeful consciousness are individuated in terms of proper function, no account that focuses on the actual properties that all cases of wakeful consciousness share can deliver an appropriate characterization of wakeful consciousness.

Stazicker's proposal, then, arguably fails as an account of the nature of wakeful consciousness, even if it can be readily admitted that control of attention is necessary or essential for a case of wakeful consciousness if it is to be an example of a properly constituted case of wakeful consciousness. As we will see, something very similar can be said of Soteriou's proposal concerning wakeful consciousness. Soteriou's account focuses heavily on the experience of time that he suggest is peculiar to wakeful consciousness. Much like Stazicker's proposal, however, or so I will suggest, Soteriou's proposal is best understood as highlighting some feature of wakeful consciousness as opposed to offering an account of what wakeful consciousness is.

Where the emphasis of Stazicker's proposal is on the dual epistemic achievements of perceptual knowledge and agential knowledge and on explaining how those achievements are rooted in control of attention, Soteriou's emphasis is on the temporal characteristics of the experience of the wakefully conscious; or, more simply put, on how the wakefully conscious experience time in a distinctive sort of way. Soteriou's account draws on both O'Shaughnessy's *Consciousness and the World*, as I have done, and his joint efforts with Crowther (cf. Crowther & Soteriou, 2017) and proposes that wakeful consciousness can be understood as a specific sort of 'temporal point of view' (Soteriou, 2019, 129).

Key to Soteriou's proposed analysis is the idea that wakeful consciousness involves a unique sort of 'tensed temporal orientation' (Soteriou, 2019, 126). What is distinctive of wakeful experience, according to Soteriou, is that it involves an orientation not just towards the content of the experience one has at some given time or interval, but also towards one's immediate past and one's immediate future. That is, according to Soteriou, developing a suggestion made by O'Shaughnessy (2000, 65), one distinctive feature of wakeful consciousness and more specifically wakeful experience is that it makes available to its subject an awareness of the present as such. Building on O'Shaughnessy's proposal, Soteriou suggests that this kind of awareness of the experienced present as such requires that one understands it as sandwiched in between the past and future (Soteriou, 2019, 127). As O'Shaughnessy at one point puts it, '[c]lose up the past, wall off the future, and you cover over the present too' (2000, 62).

This tensed temporal perspective is, Soteriou suggests, in some way tied to what he dubs the 'appropriate succession and synthesis of experienced presents' such that the experienced present is tied to the present that preceded it and it incorporates an appropriately future-oriented perspective, and this can be understood as being some sort of epistemic achievement (Soteriou, 2019, 131). This achievement is, in turn, made possible by a certain sort of agency, which involves the wakefully conscious subject exercising a battery of capacities to stitch together his experience in one that embodies a tensed perspective, tied to not only what they have experienced and done, but to what they intend and aim to achieve or expect to encounter (Soteriou, 2019, 132).

There are some marked similarities between the account I have proposed and aspects of Soteriou's account. In particular the idea that wakeful consciousness involves a kind of point of view or orientation which depends on what Soteriou dubs 'the uninhibited, synthesized exercise of various capacities' is similar to the idea I discussed in the analysis of the drunken subject: the epistemic situation of the drunken subject is, I argued, at least partially to be explained in terms of their failing to muster their mental capacities in the right sort of way. So Soteriou and my view both include the idea, absent from Stazicker's analysis, that wakeful consciousness involves a mustering or marshalling of one's mental resources, and that wakeful consciousness' fulfilling something akin to its function depends on that mustering or marshalling of one's resources – although it should be noted that Soteriou does not put matters in terms of talk of function.

These similarities notwithstanding, the same issues that affected Stazicker's account of wakeful consciousness also trouble Soteriou's proposal. The issue with Stazicker's account, I suggested, is that it does not provide us with the means to accommodate the possibility of defective or impaired cases of wakeful consciousness, and much the same is true of Soteriou's account. Take again the case of the delusional subject. There seems no reason to deny that someone in the grips of a delusional episode has a tensed temporal perspective on reality: they can be performing all sorts of complicated actions, and while they might be deeply confused about when, exactly, the experienced present is, they do seem to be capable of being aware of the experienced present as present. There seems no reason to deny someone in the grips of delusion an awareness of the present as being 'now' and as sandwiched in between the past and future.

And if that is right, then it seems that Soteriou's emphasis on the temporal perspective that is associated with wakeful consciousness does not in and of itself give us the means to understand why the state of mind that obtains in the delusional subject is an impaired or defective form of wakeful consciousness. The subject who does not know what they are doing because they are delusional has, after all, lost touch with reality in some significant sense, as discussed above. And this casts doubt on Soteriou's suggestion that the 'awareness to which we surface' when we wake up is to be understood as the awareness of the experienced present as present and as bordered by the past and future and no more, as the delusional subject and perhaps even the somnambulist have that sort of awareness (Soteriou, 2019, 132). What is missing from Soteriou's account is an emphasis on the notion of being in touch not just with, e.g., the present as present, but also the world.

It does not seem unthinkable, for instance, that one could have the sort of temporal perspective described by Soteriou without being in touch with the world. There is a respect in which the temporal perspective described by Soteriou is, in fact, rather narrow. Soteriou does not stipulate, for instance, that wakeful consciousness involves the awareness of the experienced present as being a point or interval of time which has a determinate, dated location within time. That is, Soteriou does not touch on the idea that wakeful consciousness involves some kind of sense that, whenever one is, it is at some determinate point in objective time. But this certainly does seem something that we expect from the wakefully conscious: an ability to orient oneself in objective time is, for instance, one of the things that can go missing during dementia.

That is not to say that Soteriou has not, like Stazicker, identified an important and even crucial component of wakeful consciousness or some element of the wakefully conscious perspective, one which, like control over attention, is a *sine qua non* for the proper functioning of wakeful consciousness. But much like Stazicker's proposal, Soteriou's leaves us without an account of the proper function of wakeful consciousness and thus without an account of what wakeful consciousness is. To return to the case of a delusional subject: it seems easily possible for such a subject to be aware of the experienced present as such while also being in the grips of the occurrent delusion that they are an Egyptian pharaoh of the Ptolemaic dynasty ordering the construction of defences against a Roman invasion. The mere awareness of the experienced present, and thus Soteriou's tensed temporal perspective simply does not provide us with the tools necessary in order to make sense of the ways in which wakeful consciousness can be impaired or defective.

Both Stazicker and Soteriou, then, can be understood to make a valuable contribution to the analysis of wakeful consciousness: both arguably have succeeded in isolating some feature of wakeful consciousness that is essential to its fulfilling its role. Neither Stazicker nor Soteriou, however, can be said to have outlined a complete account of wakeful consciousness. This is, of course, not entirely surprising: outlining that account has taken me the course of a thesis, whereas Stazicker and Soteriou were limited to a paper, meaning that both Stazicker and Soteriou are perhaps best understood as outlining the rough direction and shape of an account of wakeful consciousness, rather than proposing a complete account.

This being said, it is worth noting that Stazicker and Soteriou both do not situate wakeful consciousness in its appropriate biological context: both Stazicker's and Soteriou's accounts seem to be focused on finding some sort of necessary actual feature that a state must have in order to count as a state of wakeful consciousness. But as the discussion of the individuation of organisms and their features in chapter 3 makes clear, that is not how one ought to proceed in individuating a condition of organisms like wakeful consciousness. Offering an account of wakeful consciousness must involve some sort of reflection on the purposive place wakeful consciousness occupies within the context of the characterizing form of life of organisms of a certain sort. In the absence of that framework, one ends up with an account of wakeful consciousness that is unable to accommodate the various and complicated ways in which wakeful consciousness can be impaired or defective.

7: Non-human wakeful consciousness

So far, the emphasis of this chapter has been on the particular kind of wakeful consciousness found in human beings. As I stressed in the previous two chapters, however, there are many kinds of animal which exhibit a capacity for wakeful consciousness, possibly from comparatively simple creatures like bees to creatures every bit as complex as us, like apes or whales. Given that those creatures differ from us in a number of significant respects, and their states of wakeful consciousness will vary in virtue of those differences. Determining the exact nature of wakeful consciousness in non-human creatures will, of course, be an empirical affair in a number of respects and obviously beyond the scope of this thesis. That being said, I want to give some indications of the ways in which the account I have outlined of the function of wakeful consciousness can be expanded to include non-human animals.

An immediate worry about the account I have outlined for the human case is that it heavily depends on the centrality of a representation of the world as an epistemic structure composed out of beliefs and items of knowledge, as well as evaluative judgements. This, it might be thought, simply cannot be expanded to non-rational animals, meaning that my account would only apply to humans, some of the ‘higher’ primates and perhaps certain species of whale or bird. It should be noted, however, that just as what it is to be wakefully conscious differs from species to species, what is involved in having a representation of the world or what it is to have states like beliefs will differ in the same sort of way. When a dog is described as believing that there is someone at the door, we clearly do not mean to say that the dog has entertained or grasped the proposition ‘there is someone at the door’. We might think, for instance, that the representation of the world which a dog or bee possesses is non-conceptual in nature; or perhaps even that there is a sense in which dogs or bees might not strictly speaking ‘represent’ their environment and that their being wakefully conscious involves a complex of habits or responsiveness to certain features in the environment.

There is, to begin with, clearly something plausible about the idea of wakeful consciousness as a mustering of an animal’s resources. When certain species of whale forego sleep for extensive periods after the birth of their calves, for instance, it is natural to suggest that this is so because sleep would mean a diminished capacity to respond to the threats to the calf that might emerge from the environment. In staying awake, whales are in a position to remain maximally vigilant and protect their offspring. A similar sort of case can be made with respect to hunting behaviours in a broad range of species. It is doubtless an embarrassingly obvious point to make, but animals of the sort that sleep or can be knocked out are not capable of hunting while they are in that state. Hunting is tied to wakefulness and it is not surprising that this should be the

case: hunting crucially requires that an animal draw on its capacities and that it, in some sense, heeds what it is doing. A cat that is stalking its prey clearly draws on a number of its capacities as it does so and is required to synthesize them in order to succeed. And this is surely also true of comparatively simpler animals that can be stunned, like bees: beekeepers stun bees using smoke in order to avoid an aggressive defensive response from the bees as the beekeeper manipulates the hive. Across the animal kingdom, wakeful consciousness seems tied with a mustering and marshalling capacities that facilitate interactions with the world.

This being said, there will doubtless also be important differences between wakeful consciousness of the human sort and the wakeful consciousness of other sorts of animals. This will be a reflection, of course, of the fact that other sorts of animals characterizingly go about the business of living in ways that are different, and sometimes even drastically different, from the way in which human being do. As any cat owner will know, cats are not creatures possessed of ethical capacities: we do not, or at least not seriously, hold them morally responsible for their behaviours. So while an inability to utilize one's set of ethical beliefs in shaping one's behaviour indicates a serious diminution in wakeful consciousness in the human case, no such standards apply to felines.

Among the most important differences between different sorts of wakeful consciousness will be found in the specific way in which creatures are aware of the world in being wakefully conscious and how large a sector of the world they can be said to be in touch with. To take the case of bees again, there is no doubt that bees have some sense of space and their location within it – indeed, the so-called ‘dancing’ behaviour of bees is used to convey spatial information to other bees (Seeley *et al*, 2000). But unlike humans, it is difficult to imagine that there is a sense in which bees have a sense of being on a planet that is located at some definite position in the galaxy. Human wakeful consciousness comes with a nearly limitless horizon, or at least one which is incredibly expansive and seemingly capable of taking in all of reality. The portions of the world of which other creatures are aware is likely to be more limited.

There are also plausibly various sorts of things which wakefully conscious animals of non-human sorts can do which it is difficult for humans to do unaided. Salmon, for instance, seem to have some sort of natural responsiveness to the magnetic fields of the earth, using them to navigate as they migrate from sea to stream (Quinn *et al*, 1981). Birds and whales too seem to exhibit this kind of sensitivity (Walker *et al*, 2002). And this suggests that something of which humans can only learn by means of scientific instruments may well be something of which

whales and other creatures are aware in the way that we are aware of such things as desks, clouds, and the direction of the wind.

This brings us to another way in which there will doubtless be important differences between wakeful consciousness of the human sort and wakeful consciousness of other sorts. Among the sorts of things which human wakeful consciousness can bring into view are not only objects like trees and rocks, but temporally and spatially expansive entities like, e.g., theatre plays, cities, conversations, written text, cathedrals, and so on and so forth. These are the sorts of thing that we, as human beings, find to be among some of the most obvious and central aspects of the world. It is worth noting however, that these sorts of things do not show up in our perceptual episodes ‘just like that’. Take the experience of taking in some piece of artwork – the delicate architecture of the arches of the Alhambra in Spain, say. This will necessarily be a quite extensive process: it involves a process of inspecting something spatially extensive over an extended period of time. For such an entity to so much as feature among the entities of which we can be said to be aware requires a certain sort of capacity for mental action, and an understanding of how to structure that activity over time. A capacity of this sort is among the ones made available to us as human beings in being properly wakefully conscious.

Does it make sense, however, to ascribe this sort of capacity to a buzzard? The Alhambra and its arches are doubtless among the things that a buzzard can see and even navigate. But it is far from obvious that a buzzard is capable of individuating the delicate architecture of the arches of the Alhambra as such. Indeed, we might wonder whether the buzzard so much as individuates the Alhambra as a unitary entity of some sort, instead of, say, as a set of perches or obstacles. It is not that the buzzard cannot see the entities that jointly make up the Alhambra in the way we do – indeed, the keen eyesight of buzzards may be sensitive to details about the Alhambra which human beings are apt to miss – it’s just that an entity like the Alhambra plays no meaningful role in the characterizing form of life of a buzzard *qua* Alhambra. As such, wakeful consciousness in the case of buzzards need not equip buzzards with the capacity to do something like appreciating architecture or an entity like the Alhambra as a unitary whole: that sort of capacity has no role to play in the life of buzzards.

Different forms of wakeful consciousness will involve different sorts of capacities, then, based on the kind of life that creatures of different sorts characterizingly live. It is not necessarily that wakeful consciousness does not consist in a sort of epistemic posture that puts the world in view for creatures of different sorts, but rather that what it is the function of wakeful

consciousness to put into view differs. Certain phenomena might be extraordinarily salient to creatures of one sort and nigh on undetectable to others or simply not salient to them. To a whale, the oceans are alive with all sorts of noises to which we, as humans, are completely deaf without instruments and similar points can be made with respect to the sorts of things that are salient to us but which drop off into the background for creatures of other sorts.

Determining, then, what sectors and aspects of the world wakeful consciousness has the proper function of being among the things about which an organism must be able to become aware or be responsive to in being wakefully conscious requires careful study and reflection on the way in which organisms of different sorts go about the business living. This is an approach to the mental life of creatures that has most in common with Ryle's in *The Concept of Mind* (1949) and flows naturally from an account of the metaphysics of organisms that understands them as intrinsically teleological entities, where determining the nature of any features of organisms involves thinking about their purpose and considering how they fit into the sorts of life that organisms of different kind live.

In the next, and final chapter, I turn once more to this account of the metaphysics of organisms. A question which I have not broached until now, but which is central to the dominant approach to consciousness in the philosophy of mind and the cognitive science concerns the question of whether consciousness can be made to fit with physicalist views. In the final chapter, I want to argue that the view I have proposed here is physicalist, but in a distinctive sort of way. In so doing, it will also become clear why it is that consciousness has been so apt to seem mysterious to philosophers of all sorts of different stripes: the mystery stems not from anything to do with consciousness, but from failing to locate consciousness in its vital context, as I have sought to do over the course of this thesis.

Chapter 5: *Teleology, Physical Complexity & Consciousness' Place*

Introduction

What will perhaps strike some as surprising is that I have not yet touched on what, in recent decades, has been taken by most philosophers to be the “million dollar question” about consciousness: whether or not consciousness can be accommodated by physicalists. Much, if not most, recent discussions of consciousness are oriented around this question, starting with Thomas Nagel’s influential suggestion that phenomenal consciousness – there being something it is like for a creature – cannot be identified with or reduced to physical events (Nagel, 1974, 445). It is a debate that has since led to philosophers endorsing rather radical suggestions concerning consciousness, such as that it motivates some form of metaphysical dualism (Chalmers, 2017); that panpsychism is true (Goff, 2017); or that consciousness is, in fact, a form of illusion (Frankish, 2016).

This thesis is, of course, devoted to developing an account of wakeful consciousness, whereas the extant philosophical discussion is almost entirely concerned with phenomenal consciousness. But a question about the relation between the account of wakeful consciousness I have proposed and physicalism is easy to raise, not because I have insisted that there is something about the phenomenon of there being something it is like for a creature that is inconsistent with physicalism, but because my account involves robust realism about teleology. That is, one of the key claims I have defended is that wakeful consciousness is to be understood in teleological terms because it is an essential feature of organisms, which are individuated in a teleological manner. That is, my view of wakeful consciousness involves the idea that wakeful consciousness is for the sake of something, that it has a proper function: that of allowing an organism to instantiate its characterizing form of life.

The aim of this chapter is to offer a diagnosis of why it is that philosophers have come to feel so dubious about teleology, and have come to hold that teleological notions should be restricted to very limited domains. The reason for this, I suggest, is that, over the course of the seventeenth century, a particular conception of what it is to be a complex physical object came to be dominant. In the remainder of the chapter, I show that this conception of what it is to be a complex physical object, according to which the features and behaviour of the complex are to be understood as determined by the interactions and nature of their constituent parts, is not only implausible on empirical grounds, but that thinking of organisms as a complex physical system of that sort is to be guilty of a kind of category-mistake. I conclude by drawing on the

discussion of the unitary nature of organisms in the third section to offer the beginning of a critique of recent debates about consciousness, arguing that those debates rest on precisely the kind of category-mistake identified here and that this explains why they have proven so intractable.

1: *Discomfort about Teleology*

Appeals to teleology are commonly regarded with a mixture of scepticism and queasiness: there is a widespread assumption, although it is not often stated, that appeals to teleology – outside of restricted domains like the philosophy of action, say – are somehow at odds with physicalism or naturalism and therefore suspect. There are, to be sure, cases in which appeals to teleology clearly do fall foul of physicalism or naturalism: the claim, for instance, that organisms are the way they are because they were designed by some deity is clearly inconsistent with naturalism. But just because some appeals to teleology and its attendant mode of explanation are inconsistent with what the natural sciences tell us, it does not follow that teleology as such is somehow inconsistent with physicalism or naturalism. Consider the account of organisms I outlined in chapter 3: what is meant to be inconsistent with physicalism or naturalism about holding that organisms are individuated teleologically? If there is a tension between thinking of something as a physical being and thinking of that same something as something that is to be individuated teleologically, it is not immediately apparent why this is so.

This, of course, is something of an issue. There is a general assumption, running through much if not all the recent literature on teleology and teleological explanation in biology, that teleology is something that is somehow inconsistent with or at odds with naturalism and physicalism – witness the attempts of, e.g., Ernst Mayr (1961) to show how teleological explanations are, in fact, veiled instances of normal scientific explanation. We in fact already touched on such an attempt inspired by Mayr: the etiological account of evolutionary function in effect reduces evolutionary explanation to a kind of causal explanation. But it is rarely if ever made clear why teleology is regarded with such suspicion, making it difficult to see how one might go about defending teleology. This obviously matters given that the account I have developed of wakeful consciousness in the previous chapters is teleological in nature: one of the core claims I have defended is that outlining an account of wakeful consciousness must involve outlining what wakeful consciousness is for, because it is a feature of organisms and the essential features of organisms are individuated in terms of what they are for.

As there does not seem to be anything like a “blockbuster” argument against realism about teleology, it is worth considering when exactly teleology came to be regarded with increasing suspicion. As everyone familiar with what we might call the “western” philosophical tradition will know, teleology played a significant explanatory and metaphysical role in ancient philosophy, particularly, of course, in the works of Aristotle.²⁵ As is also well-known, teleology continued to play an important role in Scholastic philosophy, and that it was in the 17th century that teleology finally started its decline, with appeals to teleology becoming rarer and more often explicitly grounded on theological considerations, until the last bastion of appeals to teleology was supposedly finally swept away with Darwin’s theory of evolution by means of natural selection – an idea that is, as already discussed in chapter 3, misleading.

The onset of teleology’s decline started in the 17th century, but it is not often explained why. The answer, it seems, is to be found in the rise to dominance of a mechanistic conception of the physical world. As Sophie Roux (2018) notes in her discussion of conceptions of mechanism in early modernity, there were significant differences between how 17th century philosophers conceived of mechanism, with Descartes’ understanding of mechanism, for instance, being far more metaphysically oriented than that of Robert Hooke, say. But what was arguably shared was a certain sort of understanding of what it is to be a complex physical object. What is central to the idea of mechanism is that the features and behaviours of complex physical objects are determined by the law-governed interactions of the constituent parts of those complex physical objects.

Consider, for instance, the following two passages, the first from Descartes’ *Treatise on Man*, and the second from Robert Hooke’s definition of body and motion in *Lectures de Potentia Restitutiva*:

I should like you to consider that these [human physiological] functions follow from the mere arrangement of the machine’s organisms every bit as naturally as the movements of a clock or automaton follow from the arrangement of its counter-weights and wheels.

(Descartes, 1998, 169; AT 11:202)

²⁵ Of particular note in this context are, unsurprisingly, Aristotle’s biological works, such as *On the Parts of Animals* and *On the Generation of Animals*. See Lennox (2000) and Gotthelf (2012) for sophisticated discussions of the role of teleology in Aristotle’s biology.

I do further suppose then that all things in the Universe that become the objects of our senses are compounded of these two ... namely *Body*, and *Motion*. And that there is no one sensible Particle of matter but owes the greatest part of its sensible Extension to Motion whatever part thereof it owes to Body according to the common notion thereof

(Hooke, cited in Ehrlich, 1995, 143)

Descartes and Hooke differ in various respects, with Hooke, as Ehrlich notes, denying Descartes' identification of body with extension, instead identifying body with the potential to receive motion (Ehrlich, 1995, 142). But there is an important similarity between the two conceptions being outlined here. To think of the human body as a clock, as Descartes urges us to do, is to conceive of it as something that was made up of some independently specifiable set of components, which it can be broken down into.²⁶ Similarly, if all there is to all the things in the universe is body and motion, then it seems that a complex physical entity will just be composed of a set of interacting particles or body.

Or consider Thomas Hobbes' famous introduction to *Leviathan*:

For seeing life is but a motion of limbs, the beginning whereof is in some principal part within, why may we not say that all *automata* (engines that move themselves by springs and wheels as doth a watch) have an artificial life? For what is the *heart*, but a *spring*; and the *nerves*, but so many *strings*, and the *joints*, but so many *wheels*, giving motion to the whole body, such as was intended by the artificer?

(Hobbes, 1994, 3)

Indeed, the entirety of Hobbes' *Leviathan* can be seen as an attempt to resolve the state or politics down into its smallest independently specifiable components, and to then show how those components interact to form a state and the dangers of allowing those components to interact independently of a state that holds them in check in certain ways. It is a grand vision of the political as a complex whose properties are determined simply by the nature of its components: humans and their springs of action.

Of particular note here is, of course, Newton's founding of classical mechanics in the late 17th century. Newton's mechanics, on Robert Rosen's (1991, 98-99) helpful gloss of it, can be understood as a kind of formal system, concerned with the behaviour of structureless mass

²⁶ See Des Chenes (2001) for an extensive discussion of the programme of Descartes' physics and physiology. See also Hutchins (2016), who argues that Descartes is an eliminativist about life.

points, which Newton then showed can be used to successfully model and account for certain phenomena in celestial mechanics. So, for instance, by taking a complex physical entity, in this case the solar system, to be composed of a set of interacting and structureless mass points, Newton was able to deduce Kepler's third law of motion, explaining the nature of the relationship between the period it takes a planet to orbit the sun and their distance from it. And Newton's companion, Halley, would go on to utilize Newton's model to show that what were thought to have been three different comets, appearing in 1531, 1607 and 1682 were, in fact, a single comet.²⁷

The apparent successes in that domain understandably led to a great amount of optimism about the ability of Newton's mechanics to model all of the physical realm. We know now, of course, that Newton's mechanics is incapable of doing this, as Newtonian mechanics has been superseded by relativistic physics and quantum physics. But we can see that there is a continuity of a certain sort between, e.g., Descartes' suggestion that the human body can be treated as a clock and Newton's approach to celestial mechanics. Faced with a complex system, what one needs to do in order to understand the features and behaviour of that system is break the system down into its components and then specify the forces that operate upon them. This, of course, is also how one goes about explaining the features and behaviours of a clock: one breaks it down into its parts and specifies how those parts interact. What Newton did was provide a mathematically rigorous way of approaching those issues.

As Rosen also points out, there is a respect in which Newton's greatest influence was not necessarily constructing a formalism that could model all physical phenomena, but in providing a methodology or recipe for approaching the study of physical phenomena: what one does, when faced with a physical phenomenon in need of understanding, is break that phenomenon down into its fundamental constituents and determine the nature of the forces acting on them. In this way, Newton's model had, as Rosen puts it, 'the virtue of giving everyone plenty to do, a universal framework for the theorist to play with, and at the same time, infinite room for the experimenter, the observer, and the analyst.' (Rosen, 1991, 99) As Nancy Cartwright (1999, 83) points out, this method – which she calls the 'analytic method' – is still the one we find employed in physics. As she puts it, 'to understand what happens in the world, we take things

²⁷ A particular notable case of this is Julien Offray de La Mettrie's 'Man as Machine', who, influenced by Newton, suggested that even human beings, and not only non-rational organisms, could be treated as machines (cf. La Mettrie, 1996). In so doing, La Mettrie can be seen as further pushing forward the approaches towards organisms as machine and mechanism discussed in Des Chenes' (2005).

apart into their fundamental pieces; to control a situation we reassemble the pieces, we reorder them so they will work together to make things happen as we will.’ (ibid.)

What is of significance about this approach to complex physical objects for our purposes is that it helps explain why teleological conceptions of organisms came to be regarded with more and more suspicion. One can take a piece of matter from an organism, a hoof, say, and then deconstruct it, resolving it into the fundamental particles with which we are familiar today – such as protons, electrons, and so on. In light of that, it seems natural to think that organisms are made up of such fundamental particles, and that organisms, as complex physical objects, can basically be understood as a highly complex physical system of those fundamental particles. And if it is right to think that the characteristics and behaviours of complex physical objects is determined by the law-governed interactions between the fundamental particles out of which the complex physical object is made up, teleology starts to look otiose. Protons and electrons are not teleologically individuated and they aren’t plausibly thought of as being for the sake of anything. And if that is right, and one assumes that the features of a complex physical object are fixed by the interactions between their constituent parts, then it seems to follow that one could, in principle, offer an account of all the features that organisms have without making appeal to anything like the idea of teleology.

This, of course, is a topic of which Kant appears to have been keenly aware and, if Peter McLaughlin (1990) is correct, what motivated Kant’s famous remark that there will never be a Newton for the blade of grass in the *Critique of the Power of Judgement* (2000) reflects precisely the kind of assumptions we have been discussing. As McLaughlin points out, Kant’s belief that it is impossible for there to be a Newton for the blade of grass reflects Kant’s fervent belief in the *a priori* and necessary character of Newtonian physics combined with his idea that the mode of explanation Newtonian physics employs, which Kant describes as ‘mechanical’, explains the features and behaviours of wholes in terms of their parts and their interactions. And Kant, for reasons not, I think, entirely dissimilar from those I will discuss in section 3, denies that organisms can be explained in such mechanical-from-parts-to-wholes terms (cf. McLaughlin, 1990; 2014).

If this is right, then the issue with teleology is not so much that it is straightforwardly inconsistent with physicalism or naturalism, but that it seems to lose its explanatory role when a certain sort of conception of what it is to be a complex physical object is endorsed. If we endorse the idea that an organism ultimately is nothing more than a highly complex physical

system made up of some set of interacting fundamental particles, then it seems there is little left for teleology to do: one could, given this conception, seemingly give an account of the features and behaviours of organisms that makes no reference to anything like a characterizing form of life or proper function. To insist that teleology still has an explanatory role in the face of this seems to be to suggest that there is something about organisms that is not physical, or which arises because of something other than the stuff out of which organisms are concatenated, and that seems to be to fall foul of physicalism and naturalism. Given the evident scientific success that followed the kinds of method employed by Newton and later physicists, it is natural to assume that those successes were possible precisely because complex physical objects really are to be understood as systems of interacting fundamental particles.

In the remainder of this chapter, I want to put pressure on this conception of complex physical objects. While the idea that complex physical objects are to be understood as physical systems of interacting fundamental particles which determine the features and behaviours of the complex physical object is one that is broadly assumed, it is, in fact, far from obvious that this conception of the relation between complex physical objects and their constituent parts is correct. In fact, I want to suggest that only some complex physical objects relate to their constituent parts in that way. I outline two reasons for thinking so. First, that we have empirical grounds, from the difficulties involved with offering a quantum mechanical description of isomeric molecules, to believe that complex physical objects do not have their features or behaviours fixed by the interactions of their constituent parts alone. Second, I want to argue that the idea that we can think of organisms as if they were merely a system of interacting particles is, in fact, a kind of category error: because of the distinctive way in which organisms are unitary, to think of an organism as if it were made up of independently specifiable parts is, quite simply, not to think of an organism. These latter considerations will also inform the discussion of the final section of this chapter, where I suggest that it is neglect of precisely this aspect of organisms and their features, i.e. the distinctive way in which they are one, that explains the intractability of orthodox approaches to consciousness.

2: Complicating Matters: Isomerism

Isomerism is a widespread phenomenon: two molecules are isomers when they have the same number and kinds of atoms but nonetheless differ in chemical and physical properties. As we will see, however, isomerism is not something that can be explained in terms of the interactions between the constituent particles out of which isomers are made up. A well-known example of

isomerism is thalidomide: one of the isomers of thalidomide, so called (R)-thalidomide, is an effective medicine against morning sickness, but its enantiomer or non-superimposable spatial mirror image, (S)-thalidomide, can cause deformation in the limbs of fetuses. (R)-thalidomide and (S)-thalidomide have the same chemical formula, but cannot be superimposed – akin to the left and right human hand on the macroscopic level. These are also sometimes called optical isomers, in that they share all chemical properties except that they rotate differently in polarized light and react differently with the optical isomers of other compounds. This is what causes (S)-thalidomide to have the negative effects it does on the development of the foetus, whereas (R)-thalidomide does not have those effects.

Isomerism is relevant given the aims of this chapter because it is associated with a well-known issue in quantum mechanics, helpfully described by R.G. Woolley in his paper ‘Is there a quantum definition of a molecule?’ (1998) apropos C_3H_4 , a molecule with three isomers (1998):

[I]n present terms [C_3H_4] represents a collection of 3 carbon nuclei, 4 protons, and 22 electrons. For quantum chemistry we easily imagine the nuclei to be placed in the arrangements corresponding to three distinct stable molecules of this formula, and then apply quantum mechanics (the Schrödinger equation) to the electrons to obtain the total electronic energies in the three cases. Other nuclear arrangements lead to different electronic energies and we represent the whole set of such energies as a potential energy surface (including of course the classical Coulomb energy of the nuclei). Suppose we apply quantum mechanics to *all* the particles in one go, what do we get? It is easier to say what we have never found so far – no suggestion of three distinct isomers for the molecules of allene, cyclopropene, and methyl acetylene.

(Woolley, 1998, 11)

All of this is technical, of course, and can do with some unpacking. What Woolley is doing is highlighting a peculiar feature of quantum mechanical descriptions of isomers. One offers a quantum mechanical description of a physical system like a C_3H_4 by calculating the total energy of that system, i.e. by specifying what is sometimes called the Hamiltonian of the molecule. What Woolley is pointing out is that isomers of molecules differ in terms of their energy, i.e. that they have different Hamiltonians, but that one does not get this result if one does not, to put it crudely, put the spatial features of the molecule ‘in by hand’. If one simply

takes all the particles in a single go, one does not get the same potential energy surface: there is no indication, when one does so, of the fact that C_3H_4 has three stable isomers. This is what is referred to as ‘Hund’s Paradox’, which highlights how surprisingly difficult it is to explain chirality in quantum mechanical terms.

This is worth digging in somewhat further. When Woolley mentions that we ‘can easily imagine the nuclei to be placed in the arrangements corresponding to the three distinct stable molecules of this formula’ with respect to C_3H_4 , what he is referring to is an application of the ‘Born-Oppenheimer approximation’. The Born-Oppenheimer approximation imports an assumption into a quantum mechanical system, i.e. that the nuclei of atoms are so massive compared to electrons that the nucleus of an atom may be regarded as stationary (cf. Atkins, 1986, 375). By holding the spatial position of the nucleus fixed, one can then solve the Schrödinger equation for the electrons alone, by means of which one can derive the total energy of isomers one after the other. So in order to arrive at the correct potential energy surface for a molecule like C_3H_4 , one has to put in the spatial arrangements of the three known stable isomers of C_3H_4 by applying the Born-Oppenheimer approximation.

Even more important than getting the total energy of the molecule correct is the fact that a quantum mechanical description of molecules without application of the Born-Oppenheimer approximation is a description of a spherically symmetrical molecule, as Robin Hendry (2010) has noted. Roughly, the issue is that different atoms possess different levels of electronegativity, meaning that when an atom bonds with another atom that is more electronegative, some of its electrons are drawn closer to the more electronegative atom. This has the effect of making one region of the bonded atoms different in charge from another. This creates an asymmetrical distribution of charge across molecules – localized differences in electric charge – which are important in explaining why the molecules behave in the way they do. Hydrogen chloride, for instance, is an acid precisely because of its low level of symmetry, as Hendry (ibid.) notes. But a quantum mechanical description of a particle of hydrogen chloride or a HCl molecule suggests that it perfectly symmetrical. So it is necessary to rely on the Born-Oppenheimer approximation to put in a more asymmetrical structure, so that the quantum mechanical description reflects the comparatively low level of symmetry possessed by hydrogen chloride.

What is crucial about this is that the Born-Oppenheimer approximation is an assumption that is carried over from classical, i.e. non-quantum mechanics. The idea that a massive body, i.e.

a nucleus, can be regarded as moving more slowly than a smaller body, i.e. an electron, is one that derives from classical physics, the idea roughly being that the nucleus, being so much more heavy than the electron, influences the movement of the electron but not vice versa, in much the same way that a planet influences the movement of an asteroid but not vice versa, because the asteroid simply lacks the mass to produce a meaningful effect on the movement of something as massive as a planet. So in order to solve the Schrödinger equation for C_3H_4 in such a way that the final result reflects the correct potential energy surface, one more or less ‘fudges’ the calculation: one imports an assumption from classical mechanics into quantum mechanics.

As Hendry (2006, 183-5) has pointed out, the application of the Born-Oppenheimer approximation is often introduced as if it were a mere heuristic, a mere aid to make offering a quantum mechanical description of molecules like C_3H_4 easier to do, reducing the amount of computation needed. This, for instance, is how Hine Hettema presents the Born-Oppenheimer approximation in his book *Reducing Chemistry to Physics* (2012), arguing that it ‘allows us to temporarily bracket some of the principled worries that emerge from the application of quantum theory to chemistry’ (Hettema, 2012, 190). As both Hendry (2006) and Olimpia Lombardi (cf. Lombardi & Castagnino, 2010 & Lombardi, 2013) have stressed, however, this is simply not good enough: the Born-Oppenheimer approximation introduces a non-quantum mechanical principle into quantum mechanics, and, in fact, produces distortions in certain situations.²⁸ As such, it seems that a quantum mechanical description of a molecule like C_3H_4 fails to describe the three stable isomers of that molecule: until it is shown how one can derive the stable isomers without applying the Born-Oppenheimer approximation, quantum mechanics remains mute on the issue of isomerism.

All of this is relevant for our purposes because it suggests that we, as things currently stand, should take significant care in how we conceive of the relation between a complex physical system like a molecule and the atomic and sub-atomic particles which are its constituent. The point is not that there is not some perfectly good scientific explanation of how and why isomerism arises – presumably there is such an explanation – but that the properties of isomers simply are not fixed at the quantum level. That is, what occurs at the quantum level does not

²⁸ Hettema, for his part, has defended the employment of the Born-Oppenheimer as part of a Lakatosian research programme, suggesting that quantum mechanics has been sufficiently productive to warrant its continued employment (cf. Hettema, 2014). Given, however, that the Born-Oppenheimer arguably contradicts fundamental assumptions of quantum mechanics, as Gonzalez *et al* (2019) stress, such considerations are not entirely relevant to the concerns raised here.

determine either the features or the behaviour of isomeric molecules: it leaves many of those properties unaccounted for.

This suggests that the relation between isomeric molecules and their constituent sub-atomic particles is less straightforward than we might find it natural to assume. There is no doubt that molecules, like any physical entity, are in some way existentially dependent upon their constituent sub-atomic particles, but that is not the same as saying that everything about molecules is determined at the level of the interaction of their sub-atomic parts. As Hendry puts it, given what we currently know there are various features of isomeric molecules which are ‘not conferred by more basic laws governing the particles of which [they] are made’ (Hendry, 2010, 189). This puts pressure on the idea identified in the previous section as underpinning the decline of teleology. The case of isomerism suggests that it is simply not true that the features and behaviours of complex physical objects, like an isomer, are necessarily one and all determined by the characteristics of the particles of which they are composed and the laws governing their interactions.

It may be argued that this is not enough, however, to defend a teleological conception of organisms. It may be said, for instance, that quantum mechanics is a special case, one that should not lead us to abandon the idea that the features of physical objects more complex than isomers of some molecule are determined by the interactions of their constituent parts – it’s just that those parts take the form of molecules, say, as opposed to electrons. This is, of course, rather ad hoc, but there are difficulties even if we accept this position.

Take the case of water. Water is a substance that we know has a certain set of features. It quenches thirst; it is a suitable for preparing potatoes; at the atmospheric pressure at sea-level water boils at 100 °C, and the triple-point of water – the temperature and pressure at which all three phases of water coexist in equilibrium – is 0.0100 °C at a vapour pressure of 611.657 pascals. But say we took some portion of water, such as the water that is in the glass on my desk and, with great difficulty, isolated a single H₂O molecule from it. As Paul Needham (2011) points out, it does not seem that the H₂O molecule shares water’s properties, despite the penchant of philosophers to identify water with H₂O. A single H₂O molecule does not quench thirst; one cannot boil a potato in it; and it doesn’t even seem make sense to ascribe a temperature to it. It does not, in other words, seem that a H₂O molecule is water. It certainly can be water, in the right circumstances, but a single molecule simply lacks what are surely distinctive and even essential features of water. And if that is right, then it seems that the case

of isomerism is not unique: what a H_2O molecule is is not answered simply by considering its features.

It may be said that this is simply to be confused about what the people who popularized the idea that water is H_2O , most notably Hilary Putnam (1975, 227) and Saul Kripke (1980), mean when they identify water with H_2O . It might be thought that the claim is not meant to be that a single molecule of H_2O is water, but that a large enough number of H_2O molecules taken together is water. So the thought would be that water is what you get when you combine a large enough number of discrete H_2O molecules. But even this is too quick. An immediate and obvious issue is that water is only composed of discrete H_2O molecules and thus ‘molecular’ under highly specific circumstances: neither liquid water nor solid water, for instance, are molecular, although water is molecular in its gaseous state.

Consider, for instance, water in its solid form, when it is frozen. One of the remarkable features of frozen water is that it has a relatively high melting point. This is a reflection of the microscopic structure of ice: when frozen, each oxygen atom is bonded with four hydrogen atoms, forming a robust lattice framework that runs across the sample of ice. But that means that what we have, when we have some sample of ice, is not some collection of discrete H_2O molecules: instead, we have a continuous microscopic structure. So it seems false to say that water in its solid form is just a collection of H_2O molecules. One can, of course, melt the ice and then heat the resultant liquid until it turns into a gas, in which case what one has is a set of discrete H_2O molecules, but we do not typically think that we are creating water when we melt ice and then boil the resultant liquid. What we have is water regardless of whether it is ice, liquid, or gas.

In many ways, the case is even more complicated in the cases of liquid water than it is in the case of ice. H_2O molecules, like most molecules, displays a comparatively high level of asymmetry, the oxygen atom being more electronegative meaning that it attracts some of the electrons of the hydrogen atoms with which it is bonded in the H_2O molecule. As a result, the oxygen part has a positive charge while the hydrogen particles have a negative charge. As a consequence of this polarity, H_2O molecules in their liquid form undergo a continuous process of binding to other H_2O molecules, with the hydrogen articles of one H_2O molecule being attracted to the electron-dense region around the oxygen atoms of another molecule. Crucially, this is a constant process, as the bonding creates a new distribution of charge. This continuous process of bonding and re-bonding gives water its comparatively high boiling water and its

high viscosity. As a consequence, it is again doubtful whether we can think of liquid water as made up of some set of H_2O molecules: the microstructure of liquid water is far more complex and extensive, and is better represented as a constant cycling of differently charged ions as opposed to some set of discrete H_2O particles. The structure of liquid water is far more complex than such a model can allow. Depending on the temperature and other variables, such as pressure, a range of different ions like H_3O^+ and OH^- will form and come apart continuously, and their presence explains the features of water as a macroscopic substance (cf. Van Brakel, 2000, 80).²⁹

All of this makes the idea of identifying water, the chemical substance, with H_2O molecules or some set of them suspect. It's certainly true that a H_2O molecule can, in certain circumstances, be water, but it is not water in and of itself, nor is it straightforwardly right to say that ice or liquid water are made up of H_2O particles. In fact, the microstructure of ice and liquid water is far more complicated than that, and involves either what appears to be an entirely different microstructure in the case of ice and a complex, processual sort of structure in the case of liquid water.

All of this opens up two possibilities relevant for the purposes of this chapter. First of all, it suggests that there are empirical grounds for doubting that the features and behaviours of complex physical objects are wholly fixed by the nature of their constituent parts and the laws governing those. Second, and relatedly, our discussion so far suggests that the relation between a complex physical object and its constituent parts is certainly one of existential dependence but not necessarily of essential dependence in the same direction. That is, our discussion so far suggests that a complex physical object, like an isomer, while clearly existentially dependent on fundamental particles like protons and electrons, is not necessarily best thought of as also being essentially dependent upon them or as making the molecule what it is. That is, there is space to suppose that the nature of what occurs at the level of the particles out of which the molecule is made is determined 'from above'. Or, put differently, there is space to suppose that, at the quantum level, isomerism is indeterminate, such that there simply is no answer to the question of what isomer of a molecule is being described.

These two theoretical possibilities afford plenty of space to make the case that there is nothing particularly suspicious about holding that organisms are to be individuated teleologically. The

²⁹ Of course, none of this is to say that what does individuate water, such as its thermodynamic profile or its reactivity, is not in some sense importantly tied to its microstructure, as, e.g., Bursten (2014) suggests.

only reason why that suggestion seemed suspect is because it was assumed that because organisms are complex physical entities it must be the case that the features and behaviours of organisms are determined by the features and interactions of their, presumably non-teleologically individuated, constituent parts. But this view simply is not mandatory, and in the absence of some worked out account of how the features and behaviours of organisms are fixed by the interactions and characteristics of their constituent parts, lacking in suasive force.

Given how things currently stand, it could just as easily be that organisms in fact determine various aspects of the matter on which they are existentially dependent. There is, in fact, even a suggestion as to how organisms might do so. As Erwin Schrödinger notes in his *What is Life?* (1944), one distinctive feature of organisms is that they are what are called ‘far-from equilibrium’ thermodynamic systems. That is, by constantly importing energy, for instance by eating, and exporting entropy, organisms maintain their own organization. And crucially, as Needham (2011, 8-9) stresses, the thermodynamic state of a physical system is a prime determinant of what sorts of matter are present within that system. So not only is it, in fact, possible that organisms in fact determine the exact nature of their constituent particles, there is even a clear way in which they might do this at which we can point: by maintaining themselves in a thermodynamic state far-removed from equilibrium by engaging in such activities as feeding and excreting waste or radiating heat.

As things currently stand, then, there is room to suppose that the conception of complex physical objects which leads to tension between being committed to an irreducible role for teleology in the individuation of organisms and physicalism or naturalism is simply false. In fact, that conception is true for only some complex physical entities, and plausibly false for others. So there is space for one to be a realist about teleology and teleological properties without thereby holding that physicalism is somehow false or committing oneself to the existence of occult non-physical properties. In the next section, I go further: not only is there nothing mysterious about teleology, the idea that one could do without it and still have organisms in one’s ontology rests on a mistake.

3: *Organisms and their Unity*

Early on in *The Concept of Mind*, Ryle discusses what he calls ‘category-mistakes’, mistakes that are made because a person is somehow in the dark about or not properly classifying some entity. Ryle’s famous example of such a mistake is someone who, upon having been shown the various colleges, libraries, museums, administrative departments and the like of the University

of Oxford, asks with puzzlement where the university is (Ryle, 1949, 6). The question reveals something of a misapprehension about what a university is, assuming that the university is something over and above its various colleges, administrative departments, laboratories, and so on. In this section, I want to suggest that the conception of complex physical objects which serves to make a teleological conception of organisms look suspect rests on a similar sort of error, a kind of category-mistake: to conceive of an organism as a mere system of interacting bits of non-teleologically individuated matter is, quite simply, to not conceive of an organism as an organism. The category error runs in the opposite direction from the one discussed by Ryle.

Recall the line of reasoning that led to the teleological character of organisms seeming otiose. Organisms are complex physical objects, and one can, taking some bit of an organism, break that bit down into fundamental particles of some sort. So, or so it seems natural to think, an organism is something that is made up out of fundamental particles of this kind. More specifically, an organism is a complex physical system of interacting fundamental particles. Given that these particles do not seem to be teleological in any meaningful sense and that they are not for the sake of something, and assuming that the features and behaviour of complex physical systems are wholly determined and fixed by the characteristics and interactions of the particles out of which they are made, the teleological features of organisms look like they lack much of an explanatory role: all the work is done at the level of fundamental particles and their interactions, teleology does not even come into it. Natural as this line of thinking may seem, I want to suggest it in fact rests on a certain category-mistake because it fails to notice the distinctive way in which organisms are unitary.

To see this, consider some appendage or behaviour of an organism, such as the tooth of a lion or the spine of a particular sort of cactus, say. Consider now what makes these appendages the particular sort of appendage that they are and what goes into an account that spells out an answer to that question. A lion's tooth is clearly something that has the function of piercing something, and that is why it is sharp. But that isn't to say all that much: a cactus' spines are also for piercing through things and are also sharp. The difference, of course, lies in the fact that the lion's teeth fulfil a role in the lion's hunting behaviour, whereas the spine of a cactus is meant to deter other organisms which might try and make a meal of the cactus' flesh. But this still leaves matters wholly underdetermined: hyenas, which lions often share a habitat with, also have sharp teeth that serve the function of allowing the hyenas to hunt, but which are entirely and obviously distinct from lion's teeth. So in order to get at what is distinctive about

lion's teeth, one needs to mention that lions go about hunting in a particular sort of way: whereas the hyena often eats large prey without killing the prey first, the pack of hyenas simply dragging their prey down and starting to eat, lions tend to kill their prey by means of a strangling bite. Not surprisingly, these differences are reflected in what the teeth of lions and hyenas are like.

But the story clearly does not end there. Lions' teeth clearly have a far more complicated function: female lions, for instance, must be capable of using their jaws to manipulate infant lions. They must, moreover, not prevent the lion from grooming itself and thereby eliminating pests from its pelt. These two further points bring in an entire web of related considerations: to say that the teeth must be such to allow for the manipulating of infant lions is to raise questions about the way in which lions reproduce, which in turn raises questions about their habitat, their mating behaviour, the social aspects of a lion's life, the physiology of the internal organs of a lion, and so on and so forth. One cannot really come to a full understanding of what a lion's tooth is, what it is for, and what sets it apart from other sorts of teeth, without considering the sort of life that characterizes lions and which makes them the particular sort of organism that they are. That is, an organism's appendage, like the tooth of a lion, is what it is because of how it fits into the life of a lion considered as a whole: it is what it is in virtue of how it is incorporated into that whole.

This is by now a familiar refrain running through the entire thesis, but it is worth dwelling on somewhat more. Consider the formidable task faced by a palaeontologist who is trying to reconstruct some ancient and extinct organism from a set of scattered fossils: faced with an array of fossils of different bones and other tissue, how does one know how to fit it all together? The answer, of course, is that one compares the structure of fossils with structures of extant and related organisms, but doing so is far from fool proof: in the absence of a complete skeleton, it may simply remain unclear how the parts fit together. Even with a complete skeleton, however, questions remain: are the stubby arms evidence of the fact that the creature in question did not have much use for them, or are the arms stubby because they have a highly specialized social use? Is a row of formidable teeth evidence that the creature actively hunted down its prey or that it excelled in tackling the carcasses left behind by other predators, splitting open bone to get at marrow? Is a spiny protrusion a sort of sexual lure, akin to the feathers of a peacock, or is the protrusion a highly specialized defensive appendage? Is a large skull large because it housed a comparatively large brain or because it housed some other organ or gland? What makes these questions so difficult and perhaps permanently intractable is that we do not

have a grasp on how extinct creatures went about the business of living: we have a very limited grasp of the characterizing form of life of creatures which went extinct millennia if not millions of years before any human was around to observe them.

All of this is hardly a novel observation: as Aryeh Kosman observes in *The Activity of Being* (2013, 163-7), organisms are afforded a special position within Aristotle's metaphysics precisely because they are unitary in a distinctive sort of way. Organisms are complexes, yes, and they are made up of parts that are functionally differentiated, but what those parts are, and what their functions are, is dependent on how they fit into the whole. Rather than the nature of the parts straightforwardly determining the nature of the whole, what we find in organisms is altogether more complex: organisms offer us an example of a physical system made up of parts which owe at minimum part their identity to their place within the physical system as a whole. A lion's tooth is what it is precisely because it fits into the life of lions in a certain way, because it has the function it does in the context of the characterizing form of life of lions. Without taking into account the characterizing form of life of a lion as a whole, one will be left in the dark as to what, exactly, a lion's tooth is meant to be.

And this brings us to the category-mistake that is involved in thinking of organisms as being such that their features and behaviours are wholly determined by the interactions of their constituent parts. There are plenty of physical systems which are like this: the solar system is one, my desk is another, and so is my pathway and the pebbles that cover it. But organisms are not like this: what we see in organisms is an entirely different sort of unity or different kind of whole, one which plays some role in fixing the nature of the parts out of which it is composed. The whole is existentially dependent on the parts, but the parts are also dependent on their inclusion in the whole for their nature. They are a distinctive kind of physical system, one that hangs together in a specific sort of way.

This is the category-mistake. To treat an organism as if it were a whole the features and behaviours of which are fixed by the nature and behaviour of its constituent parts is to treat an organism as if it was not an organism. It is to treat something which belongs in one category as if it were a member of a different category. Organisms are an example of physical systems which are essentially unified, composed of parts which depend on one another for their being what they are. And this means they are quite unlike a physical system which is composed of independently identifiable physical parts, such as the solar system, or a chemical compound of

some sort. To treat the former as if they were the latter is to be in some way in the dark about what an organism is.

At this point it might be asked how this could be the case, if it is possible, at least in theory, to take some organism and break it down into fundamental particles or molecules. One could, in principle, take a human cell and divide it down in some number of H_2O molecules, and a H_2O molecule is surely something that is what it is independently from its place in a human cell. So, it might be thought, organisms really ultimately are made up of these non-teleological bits of matter, like H_2O molecules and the like. This line of reasoning is natural, but nevertheless overly simplistic. In the previous section, I pointed out that it is not clear that a H_2O molecule is water, for instance. It certainly can be water in certain circumstances, but in and of itself it is not water. A similar point can be made with respect to the stuff out of which organisms are made. In separating out a H_2O molecule from some part of an organism, what one is doing alters the nature of what one is operating on: one takes some portion of matter which was making up an organism and turns it into something that is entirely different in character, such as a molecule.

This, again, is an ancient line of thought. It suggests that there is some link between the most basic form of matter and potentiality and determinability. We already saw this line of thought in the previous section. At the level of the quantum description of a molecule, its isomeric character seems to simply be left open or determinable. It certainly could come to be a distinct isomer of C_3H_4 , but from a quantum perspective that feature is left unspecified. Something similar would be true in the case of organisms and what sort of matter one can deconstruct them into. One certainly can retrieve very simple particles from an organism, but that does not mean that the particles were always there as distinct particles, just that there is some determinable bit of matter that comes to be differently determined as it is operated on. Nor is this inconsistent with the idea that we can learn an incredible amount by dissecting organisms into these kinds of very simple forms of matter. Dissection allowed us to learn a great deal about human physiology. But the mere fact that doing so can be informative does not settle the metaphysical question of whether it is right to think that the features of an organism are determined by the set of independently determinate matter of which it is composed.

At this point, however, it might be objected that the view of organisms as essentially unitary and thus as irreducibly teleological is inconsistent with physicalism. It might be pointed out that physics is not concerned with organisms, and that the concepts of ‘goat’ or ‘hoof’ or

‘hunting’ are not among the ones employed by physics to describe physical systems: instead, it employs concepts like ‘atom’ or ‘force’ and so on. But that can hardly be counted as an objection to the view I have put forward here: if the argument of this section is correct, then physics, if it is to be capable of describing the physical world as a whole, must involve concepts like ‘goat’, ‘hoof’, and ‘hunting’. That it currently does not is not in and of itself an objection against the view I am proposing, as it was not always this way: as Aristotle envisioned physics, for instance, organisms and chemical substances are also objects of physics. Unless one takes it that physics as we understand it today is not only correct but complete, appealing to the fact that physics as we know it today does not employ certain sorts of concept is dialectically ineffective.

4: *The Question of Physicalism*

At this point, we might imagine that there is an interlocutor – a particularly hardnosed physicalist of the variety one may encounter in a philosophical seminar today – who remains deeply unimpressed by the line of argument I have been presenting so far. Such a physicalist, in the vein of, e.g., David Papineau (1990; 2002) and Jaegwon Kim (1989; 1992), might insist that my defence of teleology so far has amounted to little more than me dancing around the question: whether or not teleology is compatible with physicalism. This hardnosed physicalist may well grant me all that I have said, and even find some merit in the idea that the decline of teleology is a consequence of the adoption of a certain sort of view of physical complexity. But, the physicalist might argue, that is not how physicalism is typically understood today. As it is popularly understood today, physicalism is a doctrine that is wedded to a certain understanding of physics. Physicalism, as we know it from Papineau and Kim, starts from the idea that physics is, as Papineau puts it, ‘complete’ and ‘causally closed’, meaning that ‘all physical events are determined (or have their chances determined) entirely by prior physical events according to physical laws’ (Papineau, 1990, 67). What matters, really, is not, this physicalist might intone, whether or not some assumption is made about complexity but about whether teleology violates the completeness of physics.

More is packed into the idea of the completeness of physics than may at first glance appear. Part and parcel of it is a certain sort of idea of the place of physics with respect to the other sciences, be they physical – such as chemistry, biology, and geology, say – or social – such as economics, sociology, or history. To say that physics is complete is to say that there is nothing in the physical world that is not, in principle, within the domain of physics: physics is, after all,

the science of the physical (cf. Quine, 1981). Physics, thus understood, aims at complete coverage, or, as Donald Davidson (1997, 112) puts it at one point: ‘a perfected physics must comprehend every object and event’, meaning that physics is distinctive in terms of its generality: there is nothing outside of its domain. The implication, of course, is that if one denies the completeness of physics, one is implying that there is something, some causal power, which is not physical or which does not operate according to physical laws. And that, of course, is to out oneself as someone possessed of severely retrograde beliefs: to deny the completeness of physics is tantamount to declaring one’s belief in the existence of ghosts or other occult agencies and to severely undermine one’s credibility by saying ‘Bo!’ to science, as Ryle (1954, 68) puts it.

So, the really pressing question, it might be thought, is whether or not my commitment to a robust realism about teleologically individuated entities, viz. organisms, amounts to my saying ‘Bo!’ to science. And here the physicalist might point out that what I am proposing is an ontology that includes entities, organisms, that are quite unlike the entities that physics as we know it today takes as its objects. Unlike the atoms, protons, electrons, and leptons with which physics as we know it now is concerned, organisms are, after all, purposive things, and individuated in an entirely different fashion: not in terms of the possession of some set of individually necessary and jointly sufficient properties, but in terms of a characterizing form of life. And thus, the physicalist might conclude, the view I have proposed is not to be classed as physicalist, echoing Papineau’s line that it seems ‘unlikely’ that concepts like ‘hoof’ or ‘goat’ will ‘*inter alia* supersede’ the categories of physics as we know it today even if we admit that physics as we know it today is likely to be false and superseded in various ways (Papineau, 1990, 70).

There is an obvious response to this, which we find expressed in Tim Crane’s and D.H. Mellor’s response to the physicalist in ‘There is No Question of Physicalism’ (1990), where they point out that the physicalist is being altogether too presumptuous in opining on what categories may or may not supersede the categories of physics as we know it today: just because physics is concerned with basic sorts of matters today, Crane and Mellor remark, does not mean that it may not be concerned with even more basic sorts of matter tomorrow or more complex entities the day after (Crane & Mellor, 1990, 191).

I feel some sympathy for this line of argument, and what I will be arguing is not a hundred miles removed from it, but that being said, it is not clear that the line of defence suggested by

Crane and Mellor alone will suffice in the case of organisms. Consider again how our hardnosed physicalist friend might respond to it: they might point to the fact that their assumptions concerning the shape of a future true physics is not without foundation and that there is a notable trend to the development of physics. As physics has progressed over centuries, what we have seen is a shift away from the familiar and mundane entities that we may bump into on a stroll, like organisms, and towards ever more rudimentary and exotic particles, which behave in ways quite unfamiliar to us. So, the physicalist might suggest that while it is doubtless true that physics as we know it today is bound to be superseded, it is far less obvious that whatever supersedes it will buck the very notable tendency of physics towards ever more simple and fundamental forms of matter, so more needs to be said than that physics as we recognize it today may be superseded. This seems a perfectly valid *a posteriori* inference to make given the direction in which physics' development has gone.

The discussion of the chapter so far makes available the means to respond to this line of argument. The thing to reiterate, before turning to the response, is that what provides the physicalist with a form of dialectical superiority is the idea that physics is, in some sense, the universal science of the physical and that there is nothing that can fall outside of it without implying that what falls outside of it is not physical and that whatever a complete physics looks like, it will look quite a lot like the physics as we know it today. But note that the points raised in this chapter already put significant pressure on this line of argument.

Consider, again, the case of isomerism. The property of being a H₂O molecule seems a perfectly good example of a property that is the subject matter not of what we today recognize as physics but what we today recognize as chemistry. But, or so I have argued, it is far from obvious that the property of being a H₂O molecule is either identical to or reducible to some property at the level of the subject matter of physics. Indeed, the description that quantum mechanics throws up of a H₂O molecule is of it as perfectly symmetrical, whereas the comparatively high electronegativity of oxygen atoms in fact means that H₂O molecules are far from symmetrical – something that is, as should be clear at this point, essential to H₂O's behaving in the way it does.

But if this is true, the conclusion that we should draw from this surely is not that a H₂O molecule is somehow not a perfectly normal and mundane physical entity and that it instead something occult and immaterial. The response to adopt in the face of the fact that a H₂O molecule is not identifiable with or reducible to what is described when we apply the Schrödinger equation to

the constituent parts of two hydrogen atoms and one oxygen atom is just to acknowledge that physics extends beyond the quantum mechanical level, because there presumably is some perfectly reasonable explanation of how isomerism arises that a physicist might give. That is, faced with the case of the fact that quantum mechanics is mute on the topic of isomerism, our solution is not to deny that isomers do not exist, but to just note that quantum mechanics is just one branch of physics.

The crucial thing is that we can push this line further. Organisms are surely physical entities, and they certainly seem to go about causing physical events to happen. As has been stressed in the previous section, however, organisms are unitary in a certain sort of way, meaning that the organism as a whole is prior to the parts of which it is composed. A consequence of this is that thinking of an organism as made up of some complicated set of interacting fundamental particles, such as protons and electrons and the like, will not do: to think of organisms in that way is to no longer think of an organism. It is a reflection of the fact that organisms are individuated in terms of a characterizing form of life which is made up of parts that are essentially interdependent: the way in which an organism nourishes itself affects not just how it reproduces, but how it moves, how its bones grow, how long it lives, and so on and so forth.

But it would be to make an incredible leap to infer from this that organisms are somehow not physical entities: we did not make that leap in the case of isomers and for the same reason we should not make it here. Indeed, the other option clearly recommends itself. The issue here is not with the physicality of organisms, the issue is with the fact that a physics that is concerned solely with very simple forms of matter, such as atoms, protons, and electrons, is concerned with a sort of physical entity that differs in kind from organisms. But that does not make it the case that organisms do not exist or are not physical, it makes it the case that a physics which makes space only for the most simple forms of matter cannot be a complete physics. The inference to be made here seems to militate in favour not of discarding organisms, but in favour of the idea that there is something wrong with a physics that does not make space for them.

This brings us back to the argument as our interlocutor the hardnosed physicalist pushed it at the outset of this section. When we consider their argument again, it is clear that it rests on much more than the mere assumption of the completeness physics alone. It clearly depends on the conception of physical complexity that I have been arguing against over the course of this chapter. It is only when we believe that physical complexity involves being made up of some set of independently specifiable parts that a science concerned with only the most fundamental

kinds of matter looks like it could potentially be a universal science, as that is ultimately what all physical complexity would break down into. But once we let go of the idea that the features and behaviour of all physical complexes are determined by the law-governed interaction of their constituent parts, the idea that a science concerned with only the fundamental kinds of matter could be a science which covers all of the physical world looks to quite simply be mistaken. To be a science that covers all of physical reality, it would need to countenance the existence of physical entities that are complex in a different way.

More specifically, once we abandon the notion of physical complexity I have been discussing, it starts to look like a physics that is concerned solely with the most fundamental parts of matter or what we might call the lower levels alone must be a kind of special, as opposed to universal, science. Given that there are isomers and organisms, the features and behaviour of which cannot be identified with or reduced to the law-governed interaction of their constituent parts, it simply cannot be the case that a science concerned solely with the most fundamental sorts of matter could ever be universal or cover the entirety of physical reality.

The physicalist's argument now starts to look like it operates by means of a sleight of hand. Clearly, we all agree that there is nothing physical that is outside of the scope of physics and that it is thus a universal science in some significant sense. But that does not mean that a science of only the most fundamental sorts of matter is a universal science, and that is what our physicalist interlocutor seems to be attempting to convince us of. In fact, it now starts to look that our physicalist is in the dark about what he means when he appeals to the categories of physics. Surely the starting point of any physics is the entirety of the physical domain, and we have principled reasons, both empirical and *a priori* – from the discussion of isomerism and organisms and their unity respectively – to think that not all physical complexes have their features and behaviour determined by their constituent parts. So why on earth would we buy the idea that a science concerned solely with the most simple forms of matter could ever be a complete physics?

The answer is, of course, that we should not. Instead, the move that seems reasonable in this case is to think that physics is, in fact, more complex and rich than our physicalist interlocutor allows. There is no need to deny that the object of physics is the entirety of physical reality, but accepting that much is consistent with holding that physical reality is a complicated place, meaning that the study of the simplest and most fundamental sorts of matter, i.e. what we call physics today, is best conceived of as one branch of physics among others. There is another

entire portion of physical reality, populated by isomers and organisms, which currently cannot and, in the case of organisms, in principle cannot be accounted for in terms of the law-governed interactions of the simplest forms of matter. But that just means that the study of physical systems like isomers and organisms belongs to different branches of physics, the sciences that we would now describe as chemistry and biology.

This brings us back to the Aristotelian conception of physics mentioned earlier. The argument of this chapter gives us principled reason to suspect that physics *qua* science of all of physical reality and physics *qua* the study of the simplest and most fundamental parts of matter are distinct, the latter being but a branch of the former. The distinction between them becomes untenable only when one endorses the idea that all physical complexity is of a single sort, i.e. if the features and behaviour of physical reality are determined by the features and behaviour of the simplest and most fundamental forms of matter. But our physicalist interlocutor cannot help themselves to this conception of physical complexity at this point, as it is precisely what I have been seeking to dispute.

Indeed, they ought not help themselves to this claim, because doing so arguably turns their physics into a kind of special, as opposed to universal, science. In the absence of some reason to suspect that organisms are not physical entities, it seems rash if not irrational to deny that they must fall outside of the domain of physics. No reason has been offered for that conclusion. Instead, our reflection on the unitary nature of organisms would seem to suggest we do the opposite and acknowledge biology, the study of these distinctively unitary complex physical systems that we call organisms, as a branch of physics. To do so is not to fall foul of the idea that physics is complete, but to hold on to that idea in a way that reflects the fact that organisms and potentially other physical complexes, like isomers, cannot be broken down into and fully accounted for in terms of the most simple forms of matter and the laws that govern the interactions of those most simple forms of matter.

Or, to summarize, the line of argument of this chapter is not an argument in favour of abandoning the idea that physics is complete or that there is, in principle, nothing in physical reality that does not fall within its remit. But it is an argument in favour of abandoning the idea that what we call physics today, which is overwhelmingly concerned with simple forms of matter and simple kinds of physical system, is in principle capable of being anything other than a special science. In the absence of some argument in favour of the idea that organisms are somehow not physical or that they are not, in fact, unitary in the way I have suggested, a

commitment to the completeness of physics should lead us to recognize the study of organisms, and perhaps of chemical systems like isomers, and thus biology and chemistry as we know it today as branches of physics.

And there is nothing that the physicalist has said so far, no appeal that they can make to the idea that physics is a form of universal science, that will show that there is something wrong with thinking that organisms are the object of a distinctive branch of physics which now goes by the name of biology. In the absence of some non-vacuous definition of what it is to be physical that rules out isomers and organisms, the conclusion to be drawn is that the physicalist interlocutor has, in fact, identified what we currently know as physics and physics as the science that takes the entirety of physical reality as its domain without good reason or obvious argument. Without such an argument, I see no reason to suppose that a commitment to the existence of teleologically individuated physical entities, viz. organisms, is in any way at odds with physicalism or to hold that an antelope's leg or buzzard's migration is any more or less physical than a quark or the spin of an electron.

5: The Debate about Consciousness: The Beginnings of a Critique

Having come to the end of this thesis, I would like to conclude by looking back at its starting point: the curious neglect of wakeful consciousness, so evident in our ordinary way of thinking about ourselves, our own minds, and the lives of various of organisms, despite widespread philosophical interest in questions about consciousness. As already mentioned, the debate about consciousness that has unfolded over the last few decades has led philosophers to extreme positions, from holding that consciousness is some enigma that we will never be able to understand to holding that consciousness is, in fact, a fundamental feature of reality. Now, philosophers taking extreme stances with respect to what appear to be entirely mundane phenomena is hardly a novelty, but it is nevertheless worth asking how something as mundane and thoroughly open to view as consciousness has, in the hands of philosophers, turned into a deeply curious thing seemingly 'abounding,' as Marx once put it apropos the commodity, 'with metaphysical subtleties and theological niceties' (Marx, 1976, 163).

A feature of recent debates about consciousness is that the topic of consciousness is nearly always introduced according to the same recipe. It is suggested that what we mean by the notion of consciousness in our everyday speech is not entirely clear, and various senses of consciousness – like the ones discussed in the second chapter – are then delineated, before one of the putative sorts of consciousness, typically phenomenal consciousness, is singled out as

the topic of discussion. Note that this is, more or less, how Nagel's 'What Is It Like To Be A Bat?' (1974) inaugurated modern debates about consciousness: the only mental phenomenon relevant to the mind-body phenomenon, according to Nagel, is that of consciousness and experience, i.e. there being something it is like for a creature.³⁰ But as we have seen in previous sections, there is much more to being conscious than the mere having of a point of view: the somnambulist and entirely drunk subject have that much, but they are far from properly speaking conscious in the wakeful sense. David Chalmers is another influential example of this trend. In his writings on consciousness and the 'hard problem' it is meant to generate, Chalmers always begins by conceding that there are various phenomena called consciousness which can be accounted for by perfectly respectable scientific means, it is only phenomenal consciousness, one of the things Chalmers takes the notion of consciousness to pick out, that causes significant issues for physicalism (Chalmers, 2010, 3-4). Much like Nagel, then, Chalmers' emphasis is on phenomenal consciousness, and phenomenal consciousness alone.

The points made in the previous section offer a perfectly good way of understanding why this approach to consciousness, which carves it up into a range of distinct phenomena, has served to make consciousness appear so curious a condition in the eyes of philosophers. When dealing with organisms and their features, we are dealing with something which is essentially unitary, and this is to be borne in mind. Consciousness is complex, this much should readily be admitted, but it does not follow from this that one can understand the different parts of that complex, such as phenomenal consciousness and access consciousness or self-consciousness, independently from one another and, more importantly, independently from the role that those phenomena play within the complex as a whole. But it is precisely this that is absent from recent debates about consciousness: there is seemingly no appreciation of the fact that we are dealing with a set of phenomena that are part of an integrated whole and which are what they are in virtue of their place within that whole.

To approach the phenomenon of consciousness by separating out the different phenomena that make it up is to, once again, be guilty of a sort of category-mistake. It is akin to taking the human hand, dividing it up into its constituent bones, and then finding that it is tremendously difficult if not entirely impossible to determine what a single knucklebone is and what it is for independently from considering how that knucklebone fits into the human hand as a whole and

³⁰ This is not to say that Nagel should be taken to be responsible for the complete state of the current debate about consciousness. Indeed, if Paul Livingston's account in *Philosophical History and the Problem of Consciousness* (2004) is correct, the roots for the current state of debates about consciousness may well be found in discussions among logical positivists about so-called 'protocol sentences' and their relation to conscious experience.

what role it fulfils in that context. In a somewhat predictably ironic turn of events, those most committed to holding on to phenomenal consciousness and phenomenal consciousness alone, separated from the states of mind on which it constitutively depends, such as wakeful consciousness, as the sole obstacle to, say, physicalism, or the reach of the physical sciences, are, in fact, revealing how deeply they are committed to a form of reductionism. Taking it that something like consciousness is made up of independently specifiable phenomena, rather than realizing that they are trying to come to terms with a state of organisms, where the whole fixes the nature of the parts.

These points give us some initial reason to suspect that there may be a conceptual confusion of some sort at the heart of orthodox approaches to consciousness which would be worth excavating. That conceptual confusion would reflect a philosophical neglect of the distinctive metaphysical characteristics of organisms, the nature of their conditions and features and the distinctive way in which they are unified. This is not to say there are not significant virtues to analyses which focus specifically on phenomenal consciousness or self-consciousness, but it is to say that such analyses should proceed in light of the awareness that what one is analysing is to be understood as being what it is not in and of itself, but because of how it is integrated into an organic whole. A lack of awareness of this feature of consciousness is what makes the issue of consciousness intractable and mysterious, when it, in fact, is no more mysterious a thing than the process of digestion or a buzzard's wing.

In the far-flung past, perhaps in the total darkness of a deep primordial ocean, surrounded by thermal vents, a dissipative structure formed. Taking in energy from some source and exporting entropy, this miniscule clump of molecules was a tiny eddy of order surrounded by entropic forces. Over time, these structures developed, evolving as they left the darkness of vast oceans and became more complex in their strategies for maintaining their own organization despite the forces to which they are subject, ultimately and over the course of billions of years producing the vast array of organisms with which we are familiar: a dizzying and indefinitely variable set of entities self-organized not only around maintaining themselves but at going about the business of living in a certain sort of way. Consciousness is to be understood in that context, and as part of that story: its emergence represents the moment when the world came into view for organisms as a domain to be navigated and utilized in a coordinated way. To make clear that consciousness is part of this story, a chapter in the business of living, has been the aim of this thesis.

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