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Oliver Li

Panentheism, Panpsychism and Neuroscience

In Search of an Alternative Metaphysical Framework
in Relation to Neuroscience, Consciousness,
Free Will, and Theistic Beliefs



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Abstract

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This thesis philosophically examines, critically discusses, and proposes how a plausible philosophical framework of consciousness and free will should be formulated. This framework takes into account contemporary scientific research on human consciousness and free will and its possible challenges; also it is examined how this framework should be related to theistic beliefs – especially those connected to human and divine consciousness and free will.

First, an overview of important research within the natural sciences about the conscious mind is presented together with its challenges to a theistic worldview. Next, questions related to reductive physicalism and dualism as a thesis and an antithesis are discussed. This dialectical approach leads to two lines for possible alternatives: emergence theories and process panpsychism. The subsequent analysis suggests that a form of process panpsychism in combination with a weaker form of emergence is most plausible.

After a discussion of some central ideas about determinism and indeterminism, together with a brief overview of standard arguments within the philosophical free will debate, the proposed emergent process panpsychism is related to these standard arguments in the free will debate and scientific research about decision-making. As a result it will be suggested how free will should be understood in relation to the emergent process panpsychism.

The consequences of these results are then discussed in relation to a theistic worldview. Here panentheism will be suggested as the most reasonable conception of God. Also, the consequences for divine consciousness, divine action and interaction, the human soul, life before birth and after death, and more briefly a personal relationship with God, theological determinism, omniscience, and omnipotence will be discussed specifically in relation to panentheism in an emergent process panpsychist setting.

Keywords: physicalism, dualism, neuroscience, consciousness, free will, process philosophy, panpsychism, panexperientialism, panentheism, emergence theory, science and religion, theism

Oliver Li, Studies in Faith and Ideologies, Philosophy of Religion, Box 511, Uppsala University, SE-751 20 Uppsala, Sweden.

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有物混成，
先天地生，
寂兮寥兮，
獨立而不改，
周行而不殆，
可以為天下母。
吾不知其名，
字之曰道，
強為之名曰大。
大曰逝，
逝曰遠，
遠曰反。

*Something mysteriously formed,
Born before heaven and Earth.
In the silence and the void,
Standing alone and unchanging,
Ever present and in motion.
Perhaps it is the mother of ten thousand things.
I do not know its name
Call it Tao.
For lack of a better word, I call it great.
Being great, it flows
I flows far away.
Having gone far, it returns.*

Tao Te Ching, Chap.25 (translated by Gia-Fu Feng)

*ὅτι εἷς ἄρτος,
ἐν σῶμα οἱ πολλοί ἐσμεν,
οἱ γὰρ πάντες ἐκ τοῦ ἐνὸς ἄρτου μετέχομεν.*

*For we being many are one bread,
and one body:
for we are all partakers of that one bread.*

1. Cor 10:17

1. Introduction

1.1 Background

The discoveries and achievements of the natural sciences in recent centuries have undoubtedly had a major impact on the way people in general think about the world. We have access to complex theories and research results about how the universe came into being, about how life on our planet came into existence, about our bodies, about the inner structure of matter, about the genetic structure of many living creatures, and many other things. These results have permanently changed the way people think about the world. Research within neuroscience in recent decades has shown that it is possible to find neuronal correlates that correspond to specific mental processes and functions. This is often taken as support for, or even as proof of, the position that mental processes can be completely reduced to physical mechanisms; and the hope (and sometimes even the conviction) within neuroscience is that this will be confirmed by more empirical results in the near future. Apart from the neuroscientific research that directly investigates the functions of the human brain, there are high-cost projects, such as the ‘Human Brain Project’, that aim to simulate the functions of the human brain; and these can at least partly be seen as attempts to show finally that consciousness, free will and other mental phenomena can ultimately and entirely be ‘explained’ in terms of deterministic physical mechanisms.¹ Interpretations of such research may even go as far as claiming that consciousness, the self, free will, and other mental phenomena are merely illusory.² But even without the results of such simulations, many neuroscientists seem to be confident that, in principle, they have solved (or at least soon will solve) the mystery of the human mind with its consciousness, self-consciousness and free will – as expressed, for example, in the famous words of Francis Crick (1916-2004) that we “[...] are nothing but a pack of neurons” (Crick 1994, p.3).

Many religions in general, including Christianity, assume that there is some form of divine reality that is possibly separate from material reality. Theistic believers, as a subset of religious believers, also often assume that God and humans have consciousness, that the divine can act upon the physi-

¹ Interestingly, after two years their objectives and claims were less specific and far more modest with regard to the simulation of the brain (HBP 2015, HBP 2017).

² These terms will be more clearly defined and described in section 1.3.2.

cal world, that humans have free will, that the soul is immortal, that there is a personal and possibly free relationship with the divine, and that God has certain divine attributes, as for example omniscience and omnipotence.

Several of these beliefs are obviously directly or indirectly related to how the mind, the soul, consciousness, and free will are construed. Furthermore, although these beliefs do not *imply* a dualistic view of human nature, they are easily and readily associated with some form of dualism, the view that “[...] there are two fundamental kinds or categories of things or principles” (Robinson 2017) – in this case, the mental and the physical.³ Historically, concepts related to the mind, the soul, and thus in a sense to consciousness, can be traced back at least to ancient Greece. Ancient Greek philosophers, for example, used three different concepts to describe ‘immaterial’ parts of the human: ψυχή-psyche, usually translated as ‘soul’; νοῦς-nous, usually translated as ‘mind’; and πνεῦμα-pneuma, usually translated as ‘spirit’ – all of them somehow suggesting dualistic ideas about the nature of human beings.⁴ Furthermore, even everyday language, in expressions such as “My mind is confused”, often evokes the idea that the mind/soul and the body are two separate entities (is the body be confused while the mind is?); and using expressions such as “I did this of my own free will” indicate that, at least in a naïve sense, humans act by their own free will, that there is an ‘acting agent’, and that humans may even have a mind/soul that act and decide on their own. Yet it is far from clear that it is necessary to embrace dualism if one is a theist. Surely religious believers with an interest in science, and/or scientists with religious interests, should find questions about the above topics interesting, relevant, and important for their worldview?

Given the above, one important question within the philosophy of religion is the degree to which, and how, theistic beliefs related to consciousness and free will, as mentioned above, are challenged by contemporary research into consciousness and free will in the natural sciences. Such research could be within neuroscience, or within cognitive science and psychology. These challenges could be direct via the actual empirical evidence, via theories and models formed on the basis of such empirical evidence, or indirect via philosophical theories supporting or supported by such research. Given the presumed confidence of at least some neuroscientists that they will finally be able to show that mental phenomena in general, and consciousness and free will specifically, can be explained in terms of physical mechanisms, many philosophers and researchers argue against dualistic approaches and tend to support some form of naturalistic or physicalist approaches, often

³ The term ‘dualism’ will be more accurately defined later, in section 1.3.2.

⁴ As is well-known, views on human nature already differed significantly at the time of the ancient Greeks. For instance, Plato’s understanding of the human mind could be regarded as strictly dualistic in modern terminology (the ancient Greeks did not use the concept of dualism), whereas Aristotle (384-322 BCE) applied his hylomorphism to the soul-body relationship, in which the soul is understood as the form of the body (Aristotle *De An.* II.1 412 a).

reducing consciousness and free will to epiphenomena, or attempting to eliminate or to reduce these concepts. Here ‘physicalism’ shall be understood as the position that any phenomena can ultimately be understood in terms of physics and naturalism – that “[...] reality is exhausted by nature, containing nothing supernatural [...]” (Papineau 2007). Thus, regarding the philosophical questions and the possible implications of scientific research into the mental, there is at least some tension between dualistic approaches and naturalistic or physicalist approaches.⁵ A similar tension can be seen between the commonsense intuitions about the mind and free will stated above, and claims that that the mind and free will may even be regarded as illusory. Furthermore, many researchers within natural science often assume – openly or covertly – that some form of strict physicalism, or at least naturalism, is the given philosophical position in relationship to the world, and that research within their various disciplines directly or indirectly supports that worldview.⁶ Consequently, they attempt to explain phenomena – including consciousness and free will – merely in terms of physical mechanisms. Thus scientific results seem directly to challenge theistic beliefs about the soul, or its abilities and features. Also, theistic beliefs are sometimes challenged via the philosophical frameworks implied or supported by scientific results. This emphasises the role of philosophy and philosophical frameworks and reasoning for a possible dialogue between science and religion.

Now, as shall be argued in greater detail in the chapters that follow, both a stronger form of physicalism, commonly denoted as reductive, and a stronger form of dualism, usually known as substance dualism, are flawed in different ways. Here it could be said very briefly that, on the one hand, strictly reductive physicalism would exclude the supernatural or immaterial and thus the existence of God, the mind, or the soul; and if this further entailed that determinism were true, this would also be in conflict with the existence of free will in the sense that one is able to choose otherwise.⁷ On the other hand, dualism does not seem to be able to explain adequately how the immaterial soul or a supernatural being – God, for example – could interact with the physical body or world. But interesting research within philosophy and the philosophy of religion on the mental suggests that there are alternative positions to strict reductive physicalism and dualism. These cannot be seen only as alternative philosophical views that are fully compatible with scien-

⁵ A more accurate distinction between different forms of dualism, naturalism, and physicalism will be introduced in section 1.3.2.

⁶ Following Anders Jeffner, a worldview can be defined as follows: “A worldview is the sum of the theoretical assumptions and evaluative assumptions (1) which make up, determine or are of crucial importance for an overall view of humans and the world and (2) which form a central system of values” (Jeffner 1981). But in this thesis, whenever I use the term ‘worldview’ I will mainly refer to the *theoretical* assumptions that are important to an overall view of humans and the world.

⁷ A definition of free will will be introduced in section 1.3.2.

tific research about the mental, but may actually even be preferable. One such example of an alternative approach is emergence theory – that is, holding the view that genuinely new properties emerge at appropriate levels of organisation, and that these properties – although dependent on the underlying physical structure – cannot be reduced to or predicted from the lower-level phenomena from which they emerge (Clayton 2004; Deacon 2012; Alexander 1966). Such emergent properties could be used to describe or explain the mental life of human beings. Another group of closely related approaches are those embracing some form of non-reductive physicalism. These positions are closely related to emergence theories, and often make use of the concept of emergence. Jaegwon Kim (1934-) characterises them as follows: (a) the mental supervenes on the physical, (b) mental properties are not reducible to physical properties, and (c) the mental is causally efficacious (Kim 2005, pp.33–35).⁸ Also, it would be possible to investigate other monist approaches that do *not* regard the physical as primary. These could, for example, be idealist, panpsychist or dual-aspect monistic. Certainly, many of the above alternatives could also be developed and construed either in a substance metaphysical or in a process metaphysical setting.

Anyhow, it seems possible that the challenges to theistic beliefs from scientific research – to be described in the chapters that follow – could be weakened by adopting an alternative philosophical framework, thus avoiding the problems of the more extreme positions such as dualism or reductive physicalism.

1.2 The objective

Given the above background, the aim of this project is *to philosophically examine, critically discuss, and conclude (a) how a plausible alternative philosophical framework of consciousness and free will should be formulated, that takes into account contemporary scientific research on human consciousness and free will and its possible challenges; and (b) how it could and should be related to theistic beliefs – especially those connected to human and divine consciousness and free will.*

In which way, if any, could an alternative philosophical framework provide a possibly novel understanding of theistic beliefs about the human soul, human and divine consciousness, and free will? Could an alternative philosophical framework be found to link theistic beliefs and neuroscientific research results? Such a theoretical framework of consciousness and free

⁸ Although Kim attempts to give a description of the term ‘non-reductive physicalism’, no clear definition is used in the literature. For a more accurate understanding, one should define what is meant by ‘reduction’. As will be introduced in section 1.3.2, it is possible to distinguish between *ontological* and *causal* reduction.

will would relate to scientific research, philosophical ideas, and theistic ideas. Also, given the tension between dualism and physicalism mentioned above, an alternative framework should avoid both strict reductive physicalism and dualism, and should be able to deal with the possible challenges from contemporary scientific research about the mind. In relation to religion, the consequences of such theories for theistic beliefs should be examined. Thus, with the aim of this project in mind, I will proceed as follows:

- (I) The challenge of research about the human mind to theistic beliefs will have to be specified.
- (II) Given the aim to conclude how a plausible alternative philosophical framework could be formulated, the methodological approach used here will be to argue why reductive physicalism and substance dualism should be avoided, and to identify the strengths that should be incorporated, and the weaknesses that should be avoided, in an alternative framework.
- (III) Reasonable features of an alternative philosophical framework or approach that avoids both strict reductive physicalism and substance dualism should be argued for and related to the interpretations of modern scientific research about the mind.
- (IV) The consequences of the proposed alternative non-physicalist and non-dualist philosophical framework for the central ideas of the free will debate and the results of scientific research on this topic will be briefly discussed, resulting in some novel and promising approaches to questions in the free will debate.
- (V) The consequences for theistic beliefs and concepts related to consciousness and free will, as for example the immortality of the soul, God's consciousness, a personal and free relationship with God in relation to the proposed alternative philosophical framework need to be discussed.
- (VI) Finally, theological thinking suggested by the proposed alternative framework may influence the framework itself, and possibly even the interpretations of empirical results within science.

Before turning to the actual analysis, methodological and theoretical aspects related to the central aim will have to be presented. Also, it has to be specified which theistic beliefs and concepts are more closely related to understandings of consciousness and free will. This will be done in the next two sections.

1.3. Methodological and theoretical aspects

In the two subsections below I will state some important methodological approaches and the theoretical background. Frequently used terms will be

described and/or defined, and some central metaphysical assumptions will be made.

1.3.1 Methodological approaches

In philosophy in general, and consequently also in the philosophy of religion, the first and most important tool is our intellect; and so some form of reasoning is central to the work of a philosopher. Although it may seem obvious, it also is worth mentioning that any reasoning or intellectual work should be guided by intellectual honesty and generosity in our reading and understanding of other works, and by respect towards other philosophers and researchers.

The reasoning and philosophising itself can be regarded as a dynamic process, with the *analysis* of arguments, ideas, conceptual backgrounds and so on as a driving force. Consequently, the theoretical approaches, assumptions, and conceptual background that will serve as a starting point need not be static, and may well be modified in the course of this research, thus *synthesising* something new. They may therefore at least appear in a different light than before at the end of the thesis.

In relation to the search for an alternative philosophical framework for consciousness, the following standard approach, to be applied in chapter 3, is reasonable. Two extreme positions in form of a thesis and an anti-thesis will be analysed and discussed, uncovering both the strengths and the weaknesses of these positions. Usually such an antinomy is then resolved by finding a synthesis that avoids possible disadvantages in both positions and incorporates the strengths of both.

Since many of the philosophers in general, and philosophers of religion in particular, who are discussed in this thesis come from the tradition of analytical philosophy, it is appropriate to apply the tools used by analytical philosophy to them. This will, whenever necessary, involve the following standard scheme. After having specified the arguments, they have to be tested for their validity and their logical soundness. It will obviously be necessary to check whether the premises – assuming that they are true – really infer the conclusions given by the argument. But even the premises have to be checked: are they true, likely to be true, or at least plausible? Since it is not unusual with hidden, non-explicitly stated premises, that the premises depend on other statements or information not mentioned in the argument, it will be necessary to question and discuss the premises. The arguments – if they are part of a bigger theory – must also be checked for coherence and consistency with other parts of the theory and results relevant to the theory. Even the possible consequences of the conclusion may have to be discussed. Of course this does not mean that the analysis must always and necessarily

be stated explicitly in the text as a *formal* argument. In some cases such an analysis will lead to final conclusions and/or suggestions for further analysis.

From the brief reasoning above, and the suggestion that scientific research about the mind might be a challenge for theistic beliefs, it is easy to get the impression that science, philosophy, and religion are, and have always been, three separate subjects, three fields that did not, do not, and should not have closer contact. But history and the present situation teach us that generally this has not been the case. Scientists often make philosophical claims, and sometimes even claims about religious matters. Theologians often have a genuine philosophical and scientific interest. Philosophers regularly refer to both religious ideas and scientific research; and it is not unusual that scientists in some or several aspects are religious.⁹ Rather, it seems to be the case that philosophical theories could be the link where science and religion meet each other. Philosophical concepts and ideas can usually be related both to scientific research and to theological concepts used in religious beliefs, and can thus contribute both to a deeper theological understanding and to a deepened view on scientific research. Consequently, many of the questions raised in this thesis will be discussed in a *philosophical* context.

In this thesis, results from a broad range of areas are considered. This may suggest that one could use a broader methodological approach that considers, for example, the historical and sociological background of the ideas, thoughts, and theories discussed. Certainly, analysing the historical, norm-critical and sociological context could raise questions about the significance of certain philosophical approaches for the era in which they were presented, compared with their significance today. It could also mean analysing their relation to gender or to contemporary political issues. But given that the researchers in philosophy chosen in this thesis have mainly been active in the analytical tradition; given that research in the natural sciences generally does not involve historical or sociological considerations; and given that one of the goals in this thesis was to relate to philosophical ideas and scientific research, the tools provided by analytical philosophy appear to be most appropriate in this context. Thus the historical and sociological background of the topics in question, or questions related to gender, politics or norm critics, will not be considered. Still, it should be kept in mind that many of the

⁹ The relationship between science and religion is an important question within the philosophy of religion. There are several possible ways in which science and religion could be related. Mikael Stenmark (1962-) names three possible relationships: “1. There is no overlap between science and religion, 2. There is a union of the domains of science and religion, 3. There is overlap (or intersection) between science and religion” (Stenmark 2004 p.9). With these options as a starting point, Stenmark thoroughly analyses the relationship of science and religion, and presents a model with social, teleological, epistemological, and theoretical dimensions, emphasising the fact that both science and religion are social practices (Stenmark 2004 pp.260-269).

above-stated questions could be discussed using other methodological approaches.

Finally and more specifically, the central methodological approach used here, the analysis of arguments, can be regarded as a meta-perspective. In relation to metaphysical assumptions – for example, the theoretical background in general, empirical results, or other philosophical or theological literature, and even the historical or sociological context of certain thoughts – these analytical tools will be used to assess these assumptions and backgrounds. That may ultimately lead to the adoption of *new* assumptions and ideas, which in turn have to be evaluated with precisely the same tools, hopefully leading to some final conclusions.

1.3.2 Theoretical background, terminology, and metaphysical assumptions

Here an overview of the theoretical background for the thesis will be given. After making a more general but important observation in relation to the scientific results considered in this thesis, the notions of soft- and hard-core commonsense will be introduced. Next, important terms related to consciousness and free will, such as mind, soul, qualia, mental, alternative possibilities, ultimate responsibility, compatibilism, libertarianism, determinism, and indeterminism will be introduced. Finally, I will specify how some more general, but nevertheless important, philosophical terms such as realism, physicalism, dualism, reductive, non-reductive, causal reduction, and ontological reduction will be understood in this thesis.

As already mentioned, the project covers and uses results and ideas from three areas: (1) research results from natural science about the mind, (2) philosophical approaches to the relationship between the mind and the body and to free will, and (3) understandings of theistic beliefs. Especially in relationship to the results from the first area of research, it will be important to show that the philosophical theories, the religious beliefs, and the arguments discussed do not contradict these empirical results. This obviously does *not* mean that interpretations of such results cannot be called into question.

In section 1.1, it was initially mentioned that there are some commonsense intuitions connected to both consciousness and free will. Here a distinction by David Ray Griffin (1939-) may be useful. Griffin distinguishes between soft- and hard-core commonsense notions. He describes soft-core commonsense as not referring “[...] to truly common or universal notions but merely to parochial notions that *can* be denied without pain of implicit inconsistency” (Griffin 1998, p.16). Hard-core commonsense notions, in contrast, are “[...] those notions that all human beings inevitably presuppose in practice, even if and when they deny them verbally” (Griffin 1998, p.18).

According to Griffin, some hard-core commonsense notions important to the discussion of mind and consciousness include “[...] the reality of the external world, [...] the reality of our conscious experience, [...] the unity of our experience, [...] the efficacy of conscious experience, [...] freedom in the sense of self-determination, which involves a decision among genuine alternatives, so that it is true that the agent could have done otherwise [...]” (Griffin 1998, pp.34–41). Apparently the above-listed notions related to consciousness and free will seem to be intuitively correct, and are usually presupposed in everyday life. As shall become clear later in the thesis, at least the last two (about the efficacy of conscious experience and freedom in the sense of self-determination) have been questioned. Nevertheless, if the suggestion of Thomas Nagel (1937-) that all data, not only data from scientific findings, should be considered (Nagel 2012, p.31), then such ‘hard-core commonsense notions’ should also be weighed in the analysis of arguments, especially if the reasoning in question is otherwise inconclusive.

So far the terms ‘mind’, ‘soul’, ‘consciousness’ and ‘free will’ have been used at several points. Often the former three terms are used synonymously. Yet the *mind* in general refers to cognitive processes that could be either conscious *or* unconscious. It is in this broad sense that I will usually use the term ‘mind’. In relation to consciousness, I shall follow the simple description given by David Chalmers (1966-) of consciousness as “[...] the subjective quality of experience” (Chalmers 1996, p.4). The *soul* is another concept closely related to the mind, consciousness, the mental. It is frequently used in religious contexts as well as in everyday life. As shall be further elaborated in section 1.4, the term ‘soul’ is often associated with a dualistic understanding of the world. Also, the term *mental* will often be used in connection with the preceding terms. ‘Mental’ shall be understood as anything that is related to the mind. Yet again, mental phenomena consequently can be either conscious or unconscious. Closely related to consciousness is the term *qualia*. Chalmers defines qualia as the qualitative feel or the phenomenal quality of an experience (Chalmers 1996, p.4). It should be noted that, in describing the work of various researchers, I will generally follow their terminology and clarify the terms whenever it is necessary or important.

If not otherwise specified, *initially*, following Robert Kane (1938-), the term ‘free will’ will be understood as having *alternative possibilities* and *ultimate responsibility*¹⁰ (Kane 1996; Kane 2005). Although Kane is a liber-

¹⁰ In *The Significance of Free Will* Kane gives a detailed, but rather technical, definition of *alternative possibilities* and *ultimate responsibility*. An “[...] agent has *alternative possibilities* (or can do otherwise) with respect to A at t in the sense that at t, the agent *can* (has the *power* or *ability* to) do A and *can* (has the *power* or *ability* to) do otherwise” (Kane 1996, p.33). “(UR) An agent is *ultimately responsible* for some (event or state) E’s occurring only if (R) the agent is personally responsible for E’s occurring in a sense which entails that something the agent voluntarily (or willingly) did or omitted, and for which the agent could have voluntarily done otherwise, either was, or causally contributed to, E’s occurrence and made a dif-

tarian, thus defining free will in accordance to libertarianism, it is reasonable to choose his understanding as a starting point, since the two features involved in his definition capture the commonsense intuitions that the agent in a free action should have had a choice, ‘could have done otherwise’, and that the action has its origin in the agent that it is ‘hers’.

In relation to the scientific research considered, the term *decision making* will often be used. This term is clearly related to free will, but should not be equated with it. Firstly, it is possible that a decision is made unconsciously and thus is not necessarily free. It is also possible that a decision does not involve alternative possibilities as required in Kane’s definition of free will.

In relation to free will, the important term *determinism* will be simply defined as the past uniquely determining the future, thus expressing that the future is fixed (van Inwagen 1983, p.2). *Indeterminism* then is the opposite of determinism. Roughly following an analysis by Peter van Inwagen (1942), the following four positions in relation to free will, determinism, and indeterminism can be identified (van Inwagen 2008): (1) *compatibilism*, the position that free will exists and is compatible with both determinism and indeterminism; (2) *hard determinism*, the position that free will does not exist and determinism is true; (3) *libertarianism*, the position that free will exists and determinism is false – that is, some form of indeterminism is required; and (4) *hard incompatibilism*, the position that free will does not exist since it is compatible with neither determinism nor indeterminism, but either must be true.¹¹ In parallel it is possible to relate free will to theological determinism, the position that the divine or God necessarily and sufficiently determines *all* events that occur in the world (Timpe 2014, p.9). This leads again to four major cases: either theological determinism is true and free will is possible, theological determinism is false and free will is possible, theological determinism is true and free will is impossible, or theological determinism is false and free will is impossible. Especially divine omnipotence, omniscience, and theological determinism can be used in arguments leading either to the position that free will is not possible or to a compatibilist understanding of free will. But omniscience, omnipotence, and theological determinism will only be discussed briefly in the light of both the consequences of an alternative understanding of consciousness in relation to free will and

ference to whether or not E occurred; and (U) for every X and Y (where X and Y represent occurrences of events and/or states) if the agent is personally responsible for X, and if Y is an *arche* (or sufficient ground or cause or explanation) for X, the agent must also be responsible for Y” (Kane 1996, p.35). The term *arche* is used in Aristotelian philosophy meaning origin.

¹¹ Compared with the analyses made by van Inwagen (2008) in his article, “How to Think about the Problem of Free Will?” (van Inwagen 2008) for example, the qualification in compatibilism that free will should be compatible with *both* determinism *and* indeterminism is suggested. This follows the reasoning of, for example, John Martin Fischer (Fischer 2013).

theistic beliefs related to human and divine consciousness, as shall be delineated in section 1.4.

Another common assumption in relation to determinism and indeterminism is that a system is either determined by universal, causal laws or it is somehow probabilistic. A consequence of this is that indeterminism is understood most commonly in terms of probability.¹² Instead, I will argue that indeterminism does not necessarily have to be understood in terms of probability. An attempt will be made to argue for and strengthen the view that indeterminism need not be understood in terms of probability within the framework of an adequate theory about consciousness and free will.

Whenever a human being acts by his/her own free will, the experience of this action is a mental phenomenon, and the person acting can only perceive this action as free if s/he her/himself is consciously aware of it. Surely, if s/he were totally unconscious, the action would not be counted as free. Nevertheless, the action as such may have been initiated unconsciously and yet be regarded as free, in the sense that the person is conscious of the action itself, and the unconscious process initiating the action has, at some time in the past, been the result of conscious deliberation. An example would be my unconsciously choosing vegetarian food in a restaurant, but having consciously made the decision to become a vegetarian sometime in the past. This suggests another theoretical assumption: a philosophical theory about how consciousness arises will also include at least some suggestions for how human free will may be understood. Thus, given that a theory of consciousness contains some suggestions for how free will can be construed, the question about which theory about free will is most suitable or reasonable will surely be influenced by the proposed theory of consciousness. In accordance with this approach, an alternative understanding of consciousness will be suggested first, and then possible consequences for this approach will be discussed, not only in relation to the theistic beliefs, but also in relation to standard reasoning within the free will debate.

Some form of realism seems to be the common approach of natural science to understand reality. Frequently it is believed that there is a reality 'as such', and that this world exists independently of our experience and perception, and that the parts in the world are related to each other and have properties that do not depend on our understanding or our linguistic concepts. Here, I will rather assume a form of critical realism, understood as the position that there exists a reality independent from us, but that the reality perceived also is a product of human mental activity. Thus, in this position there is a stronger emphasis on the creative aspect of the human mind in perceiving reality.

¹² The position that events either are determined or random in some sense is criticised by, for example, David Hodgson (1939-2012) in the article "Hume's mistake" in *The Volitional Brain*, Libet, Benjamin (ed.) (1999).

Of course, the terms ‘physicalism’ and ‘naturalism’, which have already been used here, have to be specified more clearly. The term ‘naturalism’ has no clear or precise meaning. Therefore I will attempt to specify what I refer to when using these terms. Following an analysis by David Papineau (1947-), it is possible to distinguish between *ontological* and *methodological* naturalism, where naturalism – in very loose terms – is understood as the position that “[...] reality is exhausted by nature, containing nothing “supernatural [...]” (Papineau 2007). This description is nevertheless dependent on some form of understanding of the ‘natural’ and the ‘supernatural’. Methodological naturalism is understood by Papineau in a somewhat different sense than in the philosophy of religion. In Papineau’s view, methodological naturalism is about the practice of philosophy *and* science, which he regards being essentially the same, whereas philosophers of religion rather regard methodological naturalism as the methodological approach of natural science itself, and thus methodological naturalism in this weaker sense would not entail ‘philosophical naturalism’ (Papineau 2007). Physicalism, the position that any phenomena can be understood in terms of physics, can also be described in terms of the above distinction as a form of ontological naturalism, including the causal closure of the physical. The term ‘physicalism’ is sometimes used as a synonym for materialism. It is possible to distinguish further between *reductive* and *non-reductive* physicalism: the former making the stronger claim that anything can be reduced both causally and ontologically to the physical and the laws of physics or – if physicalism and materialism are used as synonyms – to matter (Papineau 2007), while the latter (as has been stated in section 1.1) can, according to Kim, be characterised by (a) the mental supervening on the physical, (b) mental properties not being reducible to physical properties, and (c) the mental being causally efficacious (Kim 2005, pp.33–35).

Dualism has already been used and briefly introduced here. In general, dualism can be defined as the view that “[...] there are two fundamental kinds or categories of things or principles” (Robinson 2017). Commonly, a further distinction between *property* and *substance dualism* is made.¹³ The former can be described as follows: There is token identity between the mental and what realises it in the physical; a token of the mental can be identified with a correlating token of the physical. But there is no type identity; the mental is not of the same type as the physical. In other words, the ontology of physics would not be sufficient to constitute the mental. The latter position of substance dualism states that an immaterial substance exists that is ontologically distinct from the physical (Robinson 2017). In the case of property dualism: on the one hand, it is possible to reduce the mental to the

¹³ Sometimes a further version of dualism is considered, namely predicate dualism, which is the position “[...] that psychological or mentalistic predicates are (a) essential for a full description of the world and (b) are not reducible to physicalistic predicates” (Robinson 2017).

physical causally by the token identity; but, on the other hand, it is claimed that there is no type identity. But since there is no type identity, it could presumably be argued that property dualism at least is close to non-reductive physicalism (Stoljar 2016). Thus, property dualism will henceforth not be considered in this thesis, and whenever I write ‘dualism’, I refer to the stronger form of substance dualism.

In relation to reduction, the distinction between *ontological* and *causal* reduction can be made. Following John R. Searle (1932-), a phenomenon *A* could be understood as *causally reducible* if it can be causally explained by another phenomenon *B*, and if it does not have any new causal power of its own. If it were *ontologically reducible*, *A* would simply be nothing but *B* (Searle 2004, p.83). This leads to four different possibilities to reduce mental phenomena: they could be causally or ontologically, both causally and ontologically, or neither causally nor ontologically reduced to physical mechanisms.¹⁴ In these terms, physicalism in its strictest form could be understood as making the metaphysical assumption that all phenomena in our world can both be *causally* and *ontologically* reduced to physical, material mechanisms governed by the laws of physics.

Having specified some important terms, theoretical concepts, and assumptions, I shall now turn to the question of which theistic beliefs shall be considered in relation to consciousness and free will.

1.4 A theistic worldview

As stated in the introduction, the central goal of this thesis is to examine philosophically, discuss critically, and conclude how a plausible alternative philosophical framework of consciousness and free will should be formulated that takes into account contemporary scientific research on human consciousness and free will and its possible challenges, and how it could and should be related to theistic beliefs, especially those connected to human and divine consciousness and free will.

Since the theistic beliefs and their relations to scientific research about the mind and associated philosophical positions are an important part of this investigation, it is appropriate at this stage briefly to present an overview of theistic beliefs that may be affected by our understanding of consciousness and free will, and thus may be challenged by contemporary research in the

¹⁴ Searle points out in his book the importance of distinguishing between *causal* and *ontological* reduction, and this distinction is important in his attempts to explain consciousness (Searle 2004). Interestingly, scholars differ on which should be rejected in the case of non-reductive physicalism. For example, Searle rejects ontological reduction but not causal (Searle 2004, pp.83–86), whereas Nancy Murphy (1951-) rejects causal but not ontological reduction (Murphy 1998, p.130).

natural sciences about the mind. These beliefs will also form the underlying basis for the subsequent discussion and analysis of possible challenges from scientific research and the philosophical positions assumed and/or supported by it. Here I will choose and summarise beliefs related to and affected by our understanding of consciousness and free will. I will also briefly argue for the importance and significance of our understanding of consciousness and free will for these religious beliefs. Of course, religious beliefs can be discussed entirely within theology; but here the idea is to highlight specific beliefs that are more or less directly affected by the research results, models, or philosophical frameworks about consciousness and free will.

1.4.1 A selection and short overview of relevant religious beliefs

In the following I will restrict my reasoning and analysis to the Christian tradition, although some of the results and arguments given certainly could be generalised to fit even other – possibly even non-theistic – traditions. God is usually regarded to have some form of consciousness, to be the creator of the world, to have certain divine attributes, and in some way or other to have a relationship to humans and the creation as a whole. Apart from the obvious relation between the believer and God, it is also common in the Christian tradition to suggest that humans in general are related to God, as expressed in the doctrine of *imago Dei*, the doctrine that humans are created in the image of God. Given this doctrine, it is natural to think of understandings of God as affecting understandings of human nature, and vice versa.

Now, given that God is commonly thought to have some form of consciousness, and also is thought to have some sort of connection, influence, and/or relation to the world and human beings, *divine consciousness*, *divine action and interaction* as a result of divine consciousness and a *personal relationship to the divine* would all be beliefs related to understandings of consciousness that might be challenged by the findings of scientific research. By way of analogy, the existence of the *human soul* as existing independently from the body – that is, if the mind/soul/body relation is understood in a dualistic sense – would count as a belief affected by understandings of consciousness. Directly associated with the existence of human souls understood in this way, the question of *life before birth and after death* would be another problem most probably affected by research about the consciousness.¹⁵

¹⁵ It should be noted here that the existence of divine consciousness does not logically entail the existence of independent souls or their possible existence before birth and after death. Yet the belief in souls, the afterlife, and life before birth is a common feature in many religions. Likewise, other beings, some of them possibly immaterial, may have consciousness, and in many religions it is common to believe in, for example, angels, demons, and the like. Again, how we construe consciousness may possibly have a bearing on our beliefs in and/or about such beings. Another example specifically related to an understanding of the soul within the Christian context would be the embodiment of Christ. At least at first glance it is hard to

But beliefs may also be affected by the understanding of the reasons and causes for human actions, and thus also by how free will is construed. Obviously, how we think of our own actions and decisions may also influence how we construe divine action and interaction. Additionally, a personal relationship between humans and the divine involves private actions and decisions. Also, traditionally God is often construed as *omniscient, omnipotent* and often even all-determining. The latter is usually denoted as *theological determinism*.¹⁶ Such beliefs are apparently more closely related to human free will and decision-making. But given the relation between consciousness and free will sketched in section 1.3.2, once the consequences of the proposed alternative framework for theistic beliefs that are more closely related to an understanding of consciousness have been discussed, based on these results some consequences for lines of reasoning related to omniscience, omnipotence and theological determinism will be hinted at.¹⁷

All of the above beliefs are quite obviously related to understandings of consciousness, free will, or both; and they could all be regarded as parts of a Christian *theistic worldview* – with the exception of life before birth, which is not a common concept within Christian denominations.¹⁸ They are also frequently and commonly discussed by Christian theologians. Divine consciousness, divine action and interaction, the human soul, and life before birth and after death are clearly more closely related to consciousness, whereas omniscience, omnipotence, theological determinism, and a personal relationship with God are mainly linked to understandings of free will, although there surely are overlaps. Given the approach that an alternative phil-

understand how Christ could be ‘embodied’ if the mind or soul of Christ did not somehow exist before the actual physical appearance of Jesus Christ. For example, the prologue in St. John 1:1-14 – “In the beginning was the Word, and the Word was with God, and the Word was God. [...] And the Word was made flesh, and dwelt among us [...]” – seems to suggest that Christ – at least before the embodiment – had an existence independent of the body, and that the ‘word’ was immaterial and of the same character as God.

¹⁶ Theological determinism is closely related to the doctrine of predestination, which states that God has eternally chosen some for damnation and others for salvation. In detail Calvin (1509-1564) writes: “By predestination we mean the eternal decree of God, by which he determined with himself whatever he wished to happen with regard to every man. All are not created on equal terms, but some are preordained to eternal life, others to eternal damnation; and, accordingly, as each has been created for one or other of these ends, we say that he has been predestined to life or to death” (Calvin, *Institutes*, bk.3, chap.21, sec. 5). Also, it should be clear that although the term ‘predestination’ surely could be used in a broader sense, it may easily be confused with the named “doctrine of predestination”. Anyhow, if theological determinism were true, than certainly predestination would be true. But predestination could be true even if theological determinism for *all* events may not be true.

¹⁷ Clearly, at least in a Christian context, beliefs and questions related to sin, justification, salvation, judgment, revelation, and so on could and should also be discussed. But this would surely be beyond the scope of this thesis.

¹⁸ Based on the anthroposophy of Rudolf Steiner (1861-1925), today’s “The Christian Community” (“Die Christengemeinschaft”) would presumably be a rare example of a Christian denomination in which reincarnation is part of its theological teachings (Frieling 1975).

osophical framework in relation to consciousness will be suggested first, and that some consequences of this framework in relation to central questions in the free will debate have been suggested, the latter four will be discussed more briefly, raising problems that could be further elaborated.

The choice that these beliefs will mainly be understood in a Christian theistic context, is clearly reflected in the choice of researchers who have mainly worked in the Christian and/or Western tradition. Yet I believe that some of these beliefs can be understood in a broader context; and results presented in this thesis concerning them may be – with some modifications – generalised or transferred to other religious contexts. Nevertheless, as already mentioned, I will henceforth stick to a more traditional Christian terminology, leaving it up to the reader and to future research in which way some of these results may be of value within other religious contexts. Moreover, whenever I refer to a *theistic worldview* or *Christian theistic worldview*, I have in mind a worldview that at least includes and relates to the beliefs mentioned above.

At this point it is appropriate to give a brief sketch and preview of how the above-stated beliefs may be affected by research within the natural sciences, and discuss their possible impact on and challenge to these beliefs, and which specific philosophical issues might be raised by the discussion. This shall be done before having a closer and more detailed look at scientific research into the human mind and possible philosophical understandings of consciousness. Furthermore, this brief analysis will partly make clear which philosophical and theological issues have to be dealt with in the coming chapters. Since a full-length discussion of all of the above eight beliefs is beyond the scope of this chapter, and even of this thesis, I will also at this point suggest and motivate some possible paths of reasoning to be followed.

Again, given the idea that an alternative philosophical framework of consciousness may subsequently result in some promising ideas in relation to standard problems from the free will debate, I will mainly focus on the beliefs that are more closely related to an understanding of consciousness, and present a short analysis and discussion of possible issues connected to them, and treat the beliefs more closely related to free will more briefly.

1.4.2 Issues related to the theistic worldview

Divine consciousness, divine action and interaction, and life before birth and after death are more-or-less directly related to understandings of the human soul. If the human soul is not to be understood as something with a reality of its own – if it is merely a term used more generally for our mental life – then how could life before or after death be understood? Furthermore, if the physical world is causally closed – i.e., no immaterial soul or mind can causally affect the material world – how could God, or for that matter any other di-

vine *immaterial* power, causally affect, act upon, or interact with the world? Certainly, such belief in other non-material entities such as the soul would still be thinkable; but if consciousness, mental activity could be understood merely in terms of the physical, then why should another solution to other forms of consciousness be assumed? A similar line of reasoning would also apply to divine consciousness. If consciousness, mind, and the mental can be explained on the basis of physical processes, then it would at least be reasonable to use similar explanations in relation to divine consciousness, if divine consciousness still is considered to exist at all.¹⁹

Anyway, divine consciousness implies in a sense that the divine is conscious of something; and given that we are living in a world, wouldn't that at least be the physical world? But being conscious about something also suggests that there should be a possibility of acting upon and interacting with the object one is conscious of. Of course, it is conceivable to be conscious of something without being able to interact with it, as for example in the position of epiphenomenalism; but that would – at least, in the case of God – leave God with a restricted form of power. God would then be thought of as some form of supreme consciousness without any connection – apart from possibly being the Creator – to the world, leading to the position of deism.²⁰ Also, assuming that there is a relationship between the divine and the world, questions would arise about how this relationship can be construed. In particular, it is possible and reasonable to ask questions about the relation and possible analogies between human action/interaction and divine action/interaction. If human actions and interactions, for example, are entirely determined physically and neurologically; if, moreover, the rest of the world as a whole is physically determined; how then could the divine act upon or interact with the world without breaking the physical laws?

Clearly, such questions lead directly to the important and often discussed mind/body problem and to questions about which metaphysical framework we should assume to be favourable, and why. At least at first glance, the above-named questions suggest that a dualistic understanding of the soul and of consciousness would be preferable if the human soul, immortality, divine consciousness, and divine action and interaction are to be understood in a more literal sense. In contrast, the explanatory attempts by contemporary scientific research on the mind and the mental may suggest that it is possible to explain the mental entirely in terms of the physical – or at least, that explanations and reductions of that kind are close at hand. Thus,

¹⁹ In his argument against the existence of God, Richard Dawkins (1941-) seems to think along similar lines. He argues that God would have to be more complex than creation, which he argues is highly unlikely. The question is, of course, whether Dawkins actually thinks of God and thus even God's consciousness as something physical or dependent on the physical (Dawkins 2006, pp.147–151).

²⁰ Wolfhart Pannenberg (1928-2014) has reasoned in the direction that atheism is very close to a deistic understanding of God (Pannenberg 1993, p.19–20,35,54).

as already hinted in section 1.1, one central question would be to discuss possible ways of approaching the mind/body problem, the pros and cons of dualism, and its seemingly most obvious counterpart, strict reductive physicalism; and to suggest alternative positions on the mind/body problem. But if one employs a classification of ontologies based on ‘matter is prior’ and ‘mind is prior’, surely the most obvious counterparts would instead be forms of idealism and physicalism. Still both positions could in some sense be regarded as monist, in opposition to dualism. Also, given that many contemporary philosophers and researchers in the physicalist tradition focus mainly on arguments against dualism, it is reasonable that the tension between reductive physicalism and dualism be taken as a starting point in this thesis (Dennett 1991, pp.33–41; Churchland 1986, pp.317–322; Dehaene 2014, pp.3–6).²¹ Furthermore, as stated in section 1.3.1, I will apply the methodological approach of analysing two extreme positions, reductive physicalism and dualism, and resolving the antinomy by finding a synthesis.

But matters are not that simple. Even in a Christian context it is not entirely clear what is or was understood by ‘the human soul’. On the one hand, Augustine (354-430) thought of the soul as some sort of substance with the ability to reason and rule the body. Augustine’s argument that we know what a soul is from the fact that we *are* souls resembles Descartes’ (1596-1650) line of thinking centuries later when he famously argued: “I think, therefore I am – cogito ergo sum” (Goetz & Taliaferro 2011, pp.32–47). Augustine also regards the soul as something simple that is not made of any other parts (Augustine *De Quantitate Animae* 13:22). This would clearly be a dualistic understanding. On the other hand, Thomas Aquinas (1225-1274) claimed that the soul and the body form a unity, and that the soul is the form of the body, thereby following a tradition that can be traced back to Aristotelian ideas (Aquinas ST I-II Q76 A2; Aristotle *De An.* II.1 412a). This does not obviously lead to a dualistic understanding of the mind or the soul, although it nevertheless is usually interpreted as dualistic. Actually, the contemporary philosopher of religion Alvin Plantinga (1932-), for example, is not sure whether the Aquinian view should be regarded as a ‘proper’ form of dualism at all (Plantinga 2007, pp.100–101). So even in terms of theology, the choice between dualism, physicalism, or any other ‘ism’ is not given; and depending on which metaphysical framework turns out to be the more reasonable one, may favour certain positions within Christian theistic thinking,

²¹ Presumably, an idealist position is often taken to be ‘too extreme’ by many physicalists. As was pointed out above, within the natural sciences some form of realism is often presupposed. Certainly, many scientists would also regard themselves as physicalists in some weaker or stronger sense. Anyhow, realism would at least grant the existence of *something*, most likely physical, independent of the mind or the mental, thus seemingly ruling out more extreme idealistic positions. Although unsupported here, this may point in the direction that the reason why idealism is often not even considered lies in the presupposition of realism. This could certainly be a matter for further investigation.

and vice versa. Yet ‘soul-talk’ still seems to be a given feature of a Christian theistic worldview.

So, whatever direction the investigation of the philosophical understandings of consciousness might suggest in light of recent research in natural science – whether a physicalist, an idealist, a dualistic, a non-reductive physicalist, an emergentist, a panpsychist, or a process-philosophical position should be embraced – it will thus have direct effects on how the above-named beliefs should be construed in theology. Likewise, if there are *theological* reasons to prefer a certain *theological* position, and if this position can be understood in a philosophical framework compatible with research in natural science, thus resisting its possible challenges, this may have a direct effect on how such research should be interpreted and which framework finally should be chosen. Yet, following Philip Clayton (1956-), it would not be reasonable to defend a philosophical framework that cannot successfully integrate the findings of natural science into its thinking.²² So there appears to be a two-fold relationship between theological understandings and philosophical understandings.

Various theologians have also directly related understandings of the mind/body problem to conceptions of God. In a Christian context – and presumably at least even in other theistic religions – this question would be about which form of theism would be the most reasonable. Should we think of God – to name some possibilities – in terms of ‘classical’ theism, pantheism, panentheism, process theism, open theism, deism, atheism, or alterity theism? All of these positions cannot be discussed in this thesis; rather, the alternative philosophical framework will lead to a suggestion about which form of theism is more plausible. Here theologians such as Clayton, Arthur Peacocke (1924-2006), and John Polkinghorne (1930-) have made major contributions to how theistic concepts can be construed in light of research and understandings of the mind/body problem and other results from natural science (Peacocke 1993; Peacocke 2000; Clayton 1997; Clayton 2000; Clayton 2004; Polkinghorne 1989). Again, a two-fold relationship could be established: on the one hand, the philosophical framework chosen or argued for on the basis of its relationship to research results about the mind within the natural sciences will have to be taken into account when deciding which form of theism should be preferred. But there might be *theological* reasons to prefer a certain form of theism, which in turn could possibly affect the choice of philosophical framework.

²² Philip Clayton writes: “By the presumption of naturalism I mean the assumption, for any event in the natural world, that its cause is a natural one as opposed to a supernatural one” (Clayton 1997, p.171). This presumption is obviously methodological, and does not seem to entail any stricter form of physicalism or naturalism. But it does emphasise that integrating views and results from different research areas such as the natural sciences and philosophy has value and importance.

The beliefs in God's omniscience, God's omnipotence, theological determinism, and a personal relationship with God reflect, at least in part, how God is related to the world. Firstly, they will be affected by the conception of God favored by the alternative philosophical understanding of consciousness. Secondly, they are all closely related to understandings of free will. It is in fact intuitively quite obvious that there are at least tensions between God's omniscience, God's omnipotence, theological determinism, and free will; for how could God know the outcome of a free action, or how could God determine the world and humans still be free, or would not God's all-determining power restrict or even override human freedom? In relation to 'a personal relationship with God', the situation seems to be that *any* personal relationship presupposes some form of free will.

As stated earlier, it can be reasoned that free will, at least in some broader sense, presupposes consciousness, but this does not hold the other way round. It might be possible that it is concluded that certain philosophical frameworks and theological understandings are preferable, and this may even suggest how one should think about free will; but this need not be the case. For example, a certain understanding of consciousness may *allow for* but *not entail* certain understandings of free will or the existence of free will. That could in turn be compatible with various theological understandings supporting or denying either of these understandings of free will; and the decision about which theological understanding would be more reasonable could be made merely on theological grounds, assuming that it is otherwise compatible with the philosophical understandings. Of course, if the discussion of the mind/body problem in relation to research from natural science about the mind, or more specific research about human agency and decision-making, leads to an understanding that clearly favors the existence, the non-existence, or a specific understanding of free will, the choice of theological understanding would be directly affected by this. Also, it could be the case that neither the theological reasoning nor ideas from the natural sciences more decisively indicate in which way free will should be construed. In that case a possible decision would have to be made merely on philosophical grounds.

So, once more there is a two-fold relationship between the beliefs in question and, in this case, understandings of free will: the philosophical framework chosen or argued for on the basis of its relationship to research results about the human mind and free will within the natural sciences will have to be taken into account when deciding how free will should be construed in relation to theistic beliefs; but there also might be *theological* reasons to prefer a certain understanding of free will, which in turn could affect the choice of philosophical framework and the interpretation of scientific research results. Such theological reasons may arise especially from the analysis and discussion of the beliefs more specifically related to free will.

Nevertheless, given the overall approach of first arguing for an alternative philosophical framework in relation to consciousness, the discussion of those beliefs will be more tentative.

1.4.3 Summary

In summary it can be said that the relationship between the theistic beliefs listed above and scientific research about the mind and associated philosophical frameworks is at least four-fold. First, there may be reasons within the *scientific* research for preferring or rejecting certain philosophical positions. Second, there may be *philosophical* reasons for choosing certain interpretations of these results. Third, there may be *theological* reasons to prefer a specific philosophical framework and certain interpretations of scientific results. Fourth, the theistic beliefs in question may have to be re-construed or modified in light of the preferred philosophical framework suggested in relation to the scientific results.

1.5 Outline of the thesis

Given the initial aim and the six steps posed in section 1.2, the following disposition and outline of the thesis is quite natural. Chapter 2, “The challenge from scientific research about the mind to a theistic worldview”, will present an overview of important and relevant research within the natural sciences about the conscious mind. After some general remarks on research methods within neuroscience and related disciplines in section 2.1, important research, and its actual challenges to a theistic worldview in the sense outlined in section 1.4, will be presented in section 2.2. The chapter will end with a summary of the results in section 2.3.

In chapter 3, “Why reductive physicalism and dualism should be avoided”, questions related to reductive physicalism and dualism will be discussed. First a short background of dualism and reductive physicalism will be given in section 3.1. Following the methodological approach of establishing an antinomy and searching for a synthesis, some strengths and problems with either position will be analysed in section 3.2. These results will be summarised in section 3.3, and two major lines for possible alternatives to these two apparently opposing positions will be suggested.

Given the conclusions from chapter 3 about two more plausible paths to follow, chapter 4, “Alternative positions between dualism and physicalism”, takes a closer look at two broad lines for possible alternatives: one mainly discussing ideas from emergence theories and ideas related to them in section 4.1; and the other investigating ideas from process philosophy and panpsychism in section 4.2, leading to the conclusion in section 4.3 that a

form of process panpsychism in combination with a weaker form of emergence is most plausible.

Chapter 5, “Determinism, indeterminism and free will”, will briefly investigate possible consequences of this proposed emergent process panpsychism in relation to free will. In section 5.1 some central ideas about determinism and indeterminism will be discussed. Section 5.2 provides a brief overview of standard arguments within the philosophical free will debate. Section 5.3 relates the proposed emergent process panpsychism to these standard arguments in the free will debate and scientific research about decision-making. In section 5.4 it will be tentatively suggested how free will should be understood in the proposed emergent process panpsychism.

The results from the previous chapters are presumably independent of a theistic worldview, since the discussion and analysis in chapters 3, 4 and 5 so far would have been done on the basis of the scientific results and philosophical reasoning alone. These results may thus have some bearing of their own. The concluding chapters, 6 and 7, will return to the challenges outlined in chapter 2, and relate the beliefs in a theistic worldview from section 1.4 to the suggested results from chapters 3, 4 and 5.

More specifically, chapter 6, “A theistic worldview in relation to emergent process panpsychism”, will discuss the previous results in relation to the theistic worldview depicted in section 1.4. Section 6.1 will investigate the consequences of emergent process panpsychism for an understanding of God. Here panentheism will be suggested as the most reasonable conception of God, given the foregoing results. In section 6.2 divine consciousness, divine action and interaction, the human soul, and life before birth and after death will be discussed specifically in relation to panentheism in a process panpsychist setting. Also the consequences for a personal relationship with God, theological determinism and omniscience, omnipotence will briefly be investigated. Section 6.4 will summarise the results of that chapter.

To end, chapter 7, “Final discussion and outlook”, will discuss the consequences of the alternative philosophical framework suggested for the theistic worldview as a whole. Apart from these consequences, section 7.1 will also make suggestions for the philosophical and scientific understanding of mind and free will on the basis of the theological discussion. Section 7.2 will summarise the overall picture suggested in this thesis, and present some ideas for future research.

2. The challenge to a theistic worldview of scientific research about the mind

The amount of available research about the human mind is vast, and cannot possibly be covered in this thesis. Even the amount of research relevant to the issues in this thesis is enormous. Nevertheless, an attempt will be made to highlight important and specific approaches within contemporary science that, at least at present, seem to be promising approaches to questions concerning consciousness and free will, and that also may consequently raise questions and problems for a theistic believer in relation to relevant beliefs. The research considered will be mainly from neuroscience, but also from other disciplines, working with problems closely connected to consciousness and free will. In the first section, a brief summary of relevant changes in research methods connected to the human mind will be accounted for. In the second part of this chapter, approaches and results relating to consciousness and free will will be presented together with their possible challenge to what has been introduced in section 1.4 as a theistic worldview. Some of the challenges may even apply to commonsense understandings of consciousness and free will. Finally, the challenges will be summarised, suggesting which specific philosophical questions and problems will have to be assessed subsequently in greater detail in the chapters that follow.

2.1. About research methods within neuroscience and related disciplines

Questions about how the human mind works, and how we consciously make decisions, have been of great interest throughout human history. Philosophical investigation of this subject can be traced back at least to ancient Greek philosophers such as Plato (428-348 BCE) or Aristotle. Aristotle's *De Anima*, for example, famously attempts to give an overall account of questions about the human soul. Of course, discussions of such questions can be found in the rest of the history of western philosophy, and presumably within the history of other cultures too. But with the development of modern science, a major shift of method has taken place. Whereas earlier questions about the human mind or the human soul were generally dealt with in the realm of philosophy or theology, today natural science, with its research into the

brain, human behaviour, and psychology can present a vast number of relevant results based on empirical data. Also, without the more recently developed research methods, one mainly had to rely on introspection and the observation of other humans in developing models and theories about the human mind. Today, in contrast, it is possible to monitor – to ‘observe’ – the human brain in action, allowing for detailed and highly developed accounts of its different functions. Such observations can in turn be used to develop theories about the human mind.

Yet even within more contemporary research, a major change of method has taken place, based mainly on access to and the use of computers. Earlier neuroscientific research on the functions of the human brain had to rely mainly on experiments involving EEG or MEG²³, providing measurements of activity in the cortex of the brain at a given moment and on case studies about people who suffered from various types of brain damage or dysfunctions. With the development of modern computers, techniques such as fMRI, NIRS, or PET²⁴ have been introduced, providing far more detailed information about the specific activity in specific areas of the brain. In particular, these techniques are not restricted merely to activity in the cortex of the brain: it is even possible to acquire images of the activity in deeper layers inside the brain. Perhaps one of the most important consequences of the development of these methods has been the fact that they allow real-time experiments on persons who are fully conscious and aware of what is going on, with fully functional and healthy brains.

Thus the methods stated above made it possible for researchers to successfully ‘map the brain’ in detail, to find the brain-areas that correlate with specific mental activities and how they interact in real time. For example, it is well known which area in the brain correlates with speech, movement or sound perception, or which areas work together in the recognition of forms or shapes, and so on. In principle this can be done for all conscious activities and states such as conscious visual perception, conscious behaviour, voluntary action, and so forth. Such correlates are usually abbreviated as ‘NCC’, for ‘neurobiological correlates of conscious states’. These meth-

²³ EEG: ElectroEncephaloGraph measures electrical impulses via electrodes placed on the outside of the head. MEG: MagenetoEncephaloGraph, similar to EEG but measuring natural magnetic activity in the cortex.

²⁴ Methods relying heavily on computer programs that evaluate the data retrieved from scanning the brain, producing images even of the inside of the brain. 3D images are possible.

fMRI: functional Magnetic Resonance Imaging measures the oxygen concentration and thus blood concentration in different brain areas by applying a strong magnetic field that is influenced by the haemoglobin molecules in blood.

PET: Positron Emission Tomography indirectly measures the blood concentration by measuring the radioactive emission of radioactive glucose injected into the person.

NIRS: Near InfraRed Spectroscopy uses infrared light to measure the optical absorption of the IR-light in haemoglobin and to yield information about the blood concentration and thus the activity in brain areas.

ods even allow researchers to study the activity in the brain while perceptions are processed or while possibly free decisions are made. The non-invasive nature of these methods makes it possible to ‘see’ which brain areas are active, and to what degree, while the person in question is performing a certain task assigned by the experimenter in real time. Thus it is possible to ask subjects to perform cognitive tasks while at the same time measuring the neuronal activity in specific brain areas. Furthermore, these methods can also be applied to research on persons with brain damage and dysfunctions, allowing even here for a deeper understanding of the phenomenon involved. The studies based on these non-invasive ‘brain-imaging’ methods may be complemented by results from cognitive science and psychology that are methodologically based on behavioural experiments. Obviously, such results may also cast light upon questions about consciousness and free will.

2.2. The challenge of research into consciousness and decision-making

Thanks to the development of the above-mentioned non-invasive methods for imaging brain activity, a great amount of novel and interesting research into how the brain works at the level of neuronal structures has been done in recent decades. Parallel to this kind of research, different approaches to how consciousness can be understood from a scientific point of view, and theories about consciousness based on these scientific findings, have been developed. In the discussion below I will briefly sketch some important major approaches and theories within neuroscience about the question of consciousness. Furthermore, a selection of relevant experiments about decision-making will be presented. This will include the famous Libet experiment and some of its more recent developments and some results from cognitive science that are relevant to decision-making and to the reasons we supply for it. Finally, their challenge to the theistic beliefs related to consciousness listed in section 1.4.1 will be discussed.

2.2.1. Some neuroscientific approaches to consciousness

Early in the 1980s Bernard J. Baars (1946-) suggested the ‘Global Workspace Theory’. Philosophers and neuroscientists alike have often referred to this theory (Crick 1994; Baars 1988; Baars 2005; Dennett 1991; Chalmers 1996; Metzinger 2004; Dehaene 2014; Damasio 1999). More recently, Jean-Pierre Changeux (1936-) and Stanislas Dehaene (1965-) have developed this model further, based on a great variety of experiments – many of them about subliminal processes in the brain. Changeux and Dehaene describe in their works which regions of the brain are active during conscious percep-

tion. Typically, many experiments carried out or referred to by them are based on the following principal setup. A perception – a word, letter or picture, for example – is presented to a subject subliminally. The subject is thus not consciously aware of the ‘perception’. Simultaneously the activity in the brain is measured by means of one of the non-invasive methods briefly referred to above. Thus it is possible to measure the activity in the brain and map the brain areas that are active, both while the ‘perception’ is unconscious and – if the perception is presented such that conscious perception is possible – while the subject is fully aware of it. Firstly, it can be shown that, while perceiving something subliminally, the regions in question – for example the regions for visual processing or word processing – are already active, even though the subject is *not* consciously aware of the perception; thus information is processed unconsciously. But as soon as the subject becomes fully aware of the perception, a *global* activity within the brain is initiated that involves regions in the frontal cortex, among others (Dehaene 2014, p.167; Changeux 2009). In other works by Dehaene and Changeux on subliminal, preconscious, and conscious processing, similar results are presented. Whenever perceptions become conscious, what could be regarded as the neuronal global workspace becomes active; and this conscious experience runs in parallel to processes of top-down amplification – i.e., ‘higher order’ brain systems amplify and affect the activity of ‘lower order’ systems. Furthermore, the global activity can be correlated with long-distance reverberation in the brain, with the possibility of voluntary action at will, and with the ability consciously to report the experience (Dehaene *et al.* 2006, pp.205–206). At this point it should already be noted that this top-down amplification of higher order systems affecting lower order systems, together with the obvious observation that the lower order system in a sense is the ‘base’ of the brain activity, establishes a recursive system.

These findings can be described by the global workspace theory, a model that basically postulates a global workspace ‘in the centre’ of other systems such as perceptual systems, motor systems, attentional systems, evaluation systems, and long-term memory (Dehaene 2014, pp.161–174; Changeux 2009, pp.87–95). If the input of a perception or a representation within a specific system connected to the global workspace reaches a minimum threshold, the global workspace as a whole becomes active, resulting in the activity of and interactive communication between major parts of the brain, with the ‘strongest’ representation dominating and occupying the workspace in a kind of ‘winner takes all’ process. It is this global activity that can be associated with the conscious awareness of a perception or representation, and it is within this activity that possible conscious responses are activated. Referring to the work of neuroscientist Antonio Damasio (1944-) in *The Feeling of What Happens* (Damasio 1999), Changeux states that “(r)ecent research has uncovered persuasive evidence that there exists a

neural basis of self-awareness” (Changeux 2009, p.86); yet Changeux also emphasises that, although the sophisticated model noted above is arguably a very successful and comprehensive model of consciousness and self-consciousness, it does not explain all aspects of consciousness or self-consciousness as such (Changeux 2009, p.87). Dehaene, referring to and using the same model, goes one step further, claiming that “(a)ccording to this theory, consciousness *is just* brain-wide information sharing” (Dehaene 2014, p.165; my emphasis). The former statement by Changeux is uncontroversial and is in fact quite obvious: why shouldn’t a neural basis of self-awareness exist? The latter claim by Dehaene is indeed far more controversial, loosely suggesting that the phenomenon of consciousness can be *identified* or *reduced to* other physical processes – in this case, brain-wide information-sharing. In fact, Dehaene is quite open about his underlying philosophical assumptions and about which kind of philosophical framework he would think is supported by his research and theoretical models. There is little doubt that Dehaene could be regarded as a reductive physicalist, and that he thinks that dualism should be discarded (Dehaene 2014, pp.259–266). Focusing on the functions of consciousness, he also argues against phenomenal consciousness which, according to him, “[...] leads down a slippery slope to dualism” (Dehaene 2014, p.10,91).

But Dehaene also suggests that conscious content and thought may be understood in a *via negativa* sense: they are also encoded by neurons *not* firing or, in his own words and with stronger focus on the negative: “It is the focal negativities that define the contents of consciousness, not the diffuse positivity” (Dehaene 2014, p.180). Based on the fact that some inhibitory neurons silence other groups of neurons in conscious experience, he compares the process of becoming conscious with sculpturing a statue out of a marble block: by taking away what the statue is *not*, the shape of the statue is gradually established. Likewise, conscious thought is gradually established by what the neurons involved rule out (Dehaene 2014, pp.174–180).

Summarising this brief account of the ‘global workspace theory’, this model focuses strongly on the actual structure of the human brain, describing how brain areas may interact both in unconscious perception or states and whenever perceptions or internal representations become conscious. What should be emphasised is that the experimental findings connected to this model confirm that conscious activity in the brain is directly correlated with the global interconnected activity of different functional areas in the brain. Furthermore, it becomes clear from the same experimental findings that underlying unconscious perception and processing is always going on at a more-or-less high level.

Damasio states that one of the main problems within the studies of consciousness is to find “[...] mental patterns that convey the sense of the self” (Damasio 1999, p.11). He introduces the concepts of *core conscious-*

ness, *extended consciousness*, *core-self*, and the *autobiographical self*²⁵ (Damasio 1999, pp.16–17). Damasio looks for neural correlates of these concepts, subsequently developing ideas of how consciousness can be construed. He summarises four conclusions about consciousness: (1) consciousness is *not* monolithic; at least, the distinction can be made between core and extended consciousness, and it also seems reasonable to distinguish between different levels of extended consciousness; (2) it is separate from wakefulness, low-level attention, working memory, language, and reasoning; (3) emotion and core consciousness are closely associated; and (4) disturbances in core consciousness target the entire realm of consciousness (Damasio 1999, pp.121–123). He also formulates the following hypothesis, depending on a number of premises for when core consciousness actually occurs: “Core consciousness occurs when the brain’s reinterpretation devices generate an imaged, nonverbal account of how the organism’s own state is affected by the organism’s processing of an object, and when this process enhances the image of the causative object, thus placing it saliently in a spatial and temporal context” (Damasio 1999, p.169). Based on his understanding of consciousness, he formulates six testable statements about the consequences of damage to certain brain areas that should be true, assuming that his understanding of consciousness is correct (Damasio 1999, pp.234–236). With regard to the ‘global network’ model by Baars, Damasio believes that it may be a good way to describe how brain capacities contribute to extended consciousness (Damasio 1999, p.200). One interesting claim made by Damasio is that the answer to the question about whether we can ever experience the consciousness of another person clearly should be *no* (Damasio 1999, p.305). This answer could be taken as supporting the claim that, however detailed the accounts of the correlating neural activities that science presents, the first-person perspective still cannot be reduced to what can be observed from the third-person perspective.

Crick, in also attempting to explain consciousness, self-consciousness, and the human mind in general merely in terms of neuronal activity, is much more explicit in his claims of what neuroscience can support. Famously, he writes at the very beginning of *The Astonishing Hypothesis* that we “[...] are nothing but a pack of neurons” (Crick 1994, p.3). He also claims that “[...] general philosophical arguments against reductionism will not do” (Crick 1994, p.9). Shortly before Crick’s death, he and Christof Koch (1956-) – with whom Crick worked closely – summarised their approach to consciousness. Interestingly, now their claims, when compared with Crick’s earlier

²⁵ In greater detail, *core consciousness* would be the “[...]sense of self about one moment – now – and about one place – here. The scope of core-consciousness is the here and now” (Damasio 1999, p.16). *Extended consciousness*, in contrast, can sense the past and anticipate the future. The *core self* corresponds conceptually with core consciousness and, in analogy, the *autobiographical self* with extended consciousness. It is the autobiographical self that allows us to experience ourselves as *persons* (Damasio 1999, p.17).

claim in 1994 that we “[...] are nothing but a pack of neurons” are far less radical. Although they still are in search of a reductive approach, they acknowledge the ‘hard problem’ of qualia, and postpone this question together with questions about self-consciousness and emotion to future research (Crick & Koch 2003, p.119,125). Without going into the details of their research, it can nevertheless be said again that there is a strong claim that their findings about neural correlates can at least be used to support their reductive approach.

Neuroscientist and psychiatrist Giulio Tononi focuses more strongly on ideas rooted in complexity and systems-theory than the above-mentioned researchers. The central idea in Giulio Tononi’s ‘integrated information theory’ is that consciousness can be described in terms of ‘integrated information’ in a system. In the case of human beings, this would be the brain; but his theory is formulated in more general terms, and is thus applicable even to other possibly conscious and/or self-conscious systems. Integration in ‘integrated information’ is related to the interconnectedness of a system. A system can usually be divided into a number of subsystems, and the total amount of information, understood as the amount of quantifiable information produced by the system in question that can be produced by all individual subsystems together, can be compared with the total amount of information the system can generate, resulting in a measure for ‘integration’. Tononi gives a comprehensive example of how this integration can be understood in practice: a sensor in a digital camera may produce, say, eight million bits of information, but since the number of possible combinations of bits composing a picture is the *same* as the number of combinations the system can produce in total, the system does not produce any ‘integrated information’. ‘Integrated information’ is only generated if the parts of a system somehow causally interact with each other. Tononi mathematically defines a measure for ‘integrated information’, and describes for simple systems how this value, denoted as ϕ , can, at least in principle, be calculated. Systems with a great amount of interaction and inter-connectivity result in higher values of ϕ ‘integrated information’, whereas systems with low interconnectedness result in lower values. He also remarks that computer simulations have shown that high values of ϕ actually require a network architecture, which would be the case in human and animal brains (Tononi 2008, pp.217–221).

Tononi subsequently applies these ideas to neural networks, and suggests that high values of ϕ – that is, high levels of integrated information – correlate with high levels of consciousness. It becomes clear that the level and type of interconnectedness in a neural network and its structure are crucial for the value ϕ ; and the decision whether, for example, an animal is to be considered conscious or not depends on the internal structure of their brains. Also, high values should be expected neither at the micro level of atoms nor at the level of cortical areas; one should instead expect high values at the

level of neuronal interconnection (Tononi 2008, p.236). What also becomes clear is that his model is entirely based on the *physical* structures in a system providing a *quantifiable* account of the interconnections of the system in question. His approach is thus a typically naturalistic approach. Thus in his very readable book *Phi*, Tononi argues, for example, against the existence of an immortal soul on the basis of his theoretical framework (Tononi 2012, pp.233–241). He also rejects both Cartesian dualism and idealism: “Once we agree that these assumptions are justified by a large body of evidence, a number of consequences can be identified. First, we must reject the Cartesian assumption of dualism and any form of idealism” (Edelman & Tononi 2000, p.215). The ‘assumptions’ agreed upon by Tononi and Edelman are “[...] that only conventional physical processes are required for a satisfactory explanation of consciousness – no dualism is allowed”, and “[...] that consciousness evolved during natural selection in that animal kingdom” (Tononi & Edelman 2000, p.14). Of course, given *those* assumptions, the conclusion that dualism and idealism should be rejected is unsurprising. Nevertheless, he *does not* think that consciousness is reducible to matter even though, according to him, it relies on matter. Tononi and Edelman are indeed careful to emphasise the uniqueness of each individual mind and phenomenal experience (Tononi 2012, p.239, 348; Edelman & Tononi 2000, pp.215, 220).

One interesting implication of this model is that it invites an understanding of the possibility of artificial intelligence; in fact, at least in principle, it provides a measure and mathematical method to decide whether the artificial network in question may be able to generate consciousness or not (Tononi 2008, p.237). Another interesting consequence would be that consciousness comes in *degrees* and can be ascribed to many systems. Although the possibility of assigning a value ϕ to *any* system may remind us of panpsychism, Tononi emphasises that his theory does *not* entail panpsychism, since the value of ϕ may well be zero for many systems. For example, a stone that is regarded as a system would result in ϕ being zero; thus, contrary to panpsychism, a stone does not have any form of even rudimentary consciousness (Tononi 2008, p.236; Tononi & Edelman 2000, p.215). Yet the theory allows for many forms of consciousness, and many simple systems within this theoretical framework may be regarded as more or less conscious. Also, it should be noted that Tononi presumably has a rather simplistic view of panpsychism. As shall become clear in section 4.2, panpsychism certainly does not claim that stones have consciousness; and given a more informed view of panpsychism, Tononi’s theory may after all be compatible with a panpsychist or panexperientialist view.

Tononi also briefly describes how qualia and meaning – two important concepts in the discussion of consciousness – can be described and explained within his ‘integrated information theory’. In an attempt to describe in simple words his basic idea of the quality of consciousness, Tononi introduces

an analogy of a photo-diode. A photo-diode may ‘distinguish’ between light and dark. But the quality of light is not exhausted by ‘being the opposite of dark’: light is also different from any colour, from any shape or sound, and so on. The quality of light is first established by specifying what light is in relation to other phenomena. Light is light by virtue of being different from a multitude of other alternatives, such as a smell, a sound, a shape (Tononi 2008, p.224). Mathematically, Tononi suggests that this interrelational understanding of qualia can be described by a ‘shape’ in a multidimensional space. Every quale is associated with a specific shape. A similarity of quality is thus modelled by the similarity of the corresponding shape. One of the important consequences of this model of qualia is that a quale cannot be generated by a state in a system in isolation. The same state in two different systems may not generate the same quality or experience (Tononi 2008, pp.224–229). The on/off-*state* of the photo-diode may, for example, mean something totally different in another system. A simple copy of the *states* of a brain would not generate or copy consciousness or the qualia experienced by the brain. Thus, in a sense, what is meaningful in an experience is specified by the shape of its quale, which in turn is specified by its relationship with its surroundings. Tononi sees a parallel with semantics, in which the meaning of a sentence is understood in relation to its context (Tononi 2008, pp.238–239). This understanding of qualia, with its strong emphasis on relatedness, may indeed be relevant even to a more philosophical investigation, since it suggests that (for example) ‘redness’ cannot be experienced ‘as such’. According to this theory, the experience of ‘redness’ is dependent on its interrelation with other experiences. Furthermore, it has already been stated that Tononi (and Edelman) still appreciate the role and importance phenomenal experience (Edelman & Tononi 2000, p.220).

In conclusion, it can be said that Tononi’s model provides a theoretical framework to *quantify* and *measure* consciousness. It also suggests a description of how qualia and meaning can be understood merely in terms of information. Both Tononi’s ‘integrated information’ and his description of qualia involve and emphasise the importance of taking into account *relational* aspects of the information in a given system – such as the brain. His model as such is not directly connected to the brain as a system, but can be applied to any system that processes information. Furthermore, the overall approach is again physicalist; and the success of his approach would certainly support the possible underlying philosophical assumptions he makes, although it may not prove them.

The above researchers also discuss a number of case studies and phenomena related to various kinds of brain damage, amongst them blindsight and research on split-brain patients. Blindsight is a well-known phenomenon in which the subject is only aware of part of the visual perceptions processed in the brain. Lawrence Weiskrantz (1926-), who was one of the first to ob-

serve and study this phenomenon scientifically, discovered that patients who were blind on one side of their visual field, and whose blindness was not caused by a damaged eye or the like, but was rather due to brain damage, still could account for objects and events on the ‘blind side’ of the visual field by simple guessing. They did not consciously see what happened in the ‘blind area’, yet they seemed to have some unconscious access to the information processed from the ‘blind side’. For example, it was possible to guess whether a light had blinked in the blind area or to point ‘randomly’ at the source of light. The number of correct guesses were significantly above what would have been the case if the guess had been ‘truly random’ (Kolb 2006, pp.267–268). Crick, Dehaene, and Damasio refer to this phenomenon as evidence supporting their approaches to consciousness. Specific damage correlates with specific impairments and anomalies in consciousness and with how the actual effects can be explained within the various theories. For instance, Dehaene’s global network theory can easily account for the fact that the results of some processes in the brain are not consciously available. Damasio discusses blindsight specifically in relation to his predictions about the effects of damage to the brain (Crick 1994, pp.171–173; Dehaene 2014, pp.54-55-130; Damasio 1999, p.268).

Research on split-brains go back to the 1950s. Researchers surgically cut the connection between the two hemispheres of the brain in animals. Experiments on such animals suggested that, under certain conditions, they behaved as if they had *two* brains (Sperry 1961, p.1749).²⁶ This research was extended to humans when physicians realised that subjects suffering from a life-threatening form of epilepsy could be treated by surgically cutting the *corpus callosum*, thus splitting the brain into two. These studies on split-brain patients lead to some odd results. In a typical setup, a spoon is presented to one hemisphere of the brain and a pencil to the other by placing them within the visual field corresponding with either side of the brain. The subject is then asked to pick up the object shown with both the left and the right hand. But the right hand – connected to the left hemisphere – will attempt to pick up what was shown to the left hemisphere, and vice versa (Kolb 2006, pp.546–548). Sometimes the splitting leads to the ‘alien hand syndrome’ in which the hand controlled by the non-dominant hemisphere attempts to interfere with the actions of the dominant hemisphere. Again, Tononi, Damasio, and Crick comment on split-brain experiments. Both Crick and Damasio highlight that since the dominant left hemisphere usually is the ‘verbal’ part, it will ‘confabulate’ explanations for actions performed

²⁶ Roger Wolcott Sperry (1913-1994) received the 1981 Nobel Prize in medicine for his research on split-brain patients. Interestingly, Sperry himself was not a physicalist but an emergentist. According to Clayton, as a neuroscientist Sperry tried to find a position that was both compatible with neuroscientific research and also able to account for consciousness, not merely as an epiphenomenon (Clayton 2004, p.23).

or initiated by the right hemisphere. All of them interpret these results in the direction that *both* hemispheres have some form of consciousness, although only the dominant left hemisphere verbally reports results (Crick 1994, pp.169–171; Damasio 1999, p.187; Edelman & Tononi 2000, pp.63–65; Tononi 2012, pp.77–87). It is, of course, not entirely clear whether these results *imply* that two minds or consciousnesses actually are present in the split-brain patients; but assuming that consciousness need not be dependent on the ability to report verbally, it seems reasonable to believe that both hemispheres do have some form of mind or consciousness – and, presumably, even self-consciousness, since both hemispheres at least in some cases act and report independently, although not necessarily verbally. The problem here would rather be how the state of the non-dominant hemisphere can be adequately described.

So far some important research about consciousness has been presented. I shall now present a number of scientific approaches to decision-making that are relevant to, and will affect, an understanding of free will.

2.2.2 Some scientific approaches to free will and decision-making

The most famous experiment of this kind, which has also been extensively discussed within both natural science and philosophy, is the almost classic experiment of Benjamin Libet (1916-2007). Originally – and typically – his experiments involved some form of bodily movement such as pressing a button. In brief, his setup was as follows: a person is asked to press a button and to register the time when they felt the urge to do so. At the same time, the neuronal activity corresponding to the ‘readiness potential’, which is associated with the ‘readiness’ of underlying neuronal systems to initiate a movement, is measured by EEG. The experiments gave the following interesting result: unconscious neuronal activity, which prepared for the movement of pressing the button, started 300-400 milliseconds *before* the person actually reported that s/he had *consciously and willingly* performed or decided to perform the movement/action (Libet 1999, p.47). Libet’s experiments were later developed and refined. One modification by Patrick Haggard and Martin Eimer extended Libet’s original experiment such that even the choice of pressing the button with the left or the right hand was taken into account. The onset of the ‘general’ readiness potential and a ‘lateralised’ readiness potential were measured. Both potentials occurred before the awareness of willing the movement, but only the ‘lateralised’ potential was correlated with the time of conscious intention. Haggard and Eimer concluded that only the ‘lateralised’ potential is possibly causally related to the awareness of the intention to move (Haggard & Eimer 1999, pp.131–132; Haggard 2011, p.18). Another more recent and more refined setup, based on the real-time

measurement of neuronal activity by fMRI, produced similar results that pointed in the same direction as Libet's experiment. Chun Siong Soon, Marcel Brass, Hans-Jochen Heinze, and John-Dylan Haynes (2008) asked subjects to press a button with either the right or the left hand. At the same time the subjects viewed a stream of letters. After making their choice, the subjects were asked to choose the letter they saw at the time they decided to press the button by choosing a letter from a response map. Simultaneously, the experimenters monitored the brain activity by fMRI in specific brain areas – in this case, the frontopolar cortex. The results from the monitored activity were gathered and evaluated so that specific patterns in the monitored brain region were correlated with the choice of hand. Thus also *predictive* information about the choice of pressing a button with a left or a right finger in the experiment was obtained. Firstly, the measurements by Libet were confirmed in principle: the delay between measuring the readiness potential and the time when the 'decision' was reported was a few hundred milliseconds. Secondly and more interestingly, it was possible to *predict* the outcome of the subjects' choices with a probability higher than mere chance, although not much higher, up to several seconds before the subjects actually reported their 'decisions' (Soon *et al.* 2008). So the causal power leading to the final action does not seem to lie in the consciously reported 'act of decision', but rather in the underlying neuronal processes, thus seemingly suggesting causal reductionism.

However, it should be noted that the standard interpretation of the readiness potential has been questioned more recently. For example, Aaron Schurger, Jacobo Sitt, and Dehaene have suggested that the readiness potential may well reflect random fluctuations rather than an unconscious initiation of movement (Schurger *et al.* 2012). Their research is supported by a study that distinguishes deliberate and arbitrary decisions. One of the results of this study is that the readiness potential occurs in the case of arbitrary decisions, but *not* in the case of deliberate decisions, which in turn suggests that the interpretation of the readiness potential as the result of random fluctuations may well be more reasonable (Maoz *et al.* 2017). Be that as it may, whichever interpretation of the readiness potential is most plausible, the above-mentioned experiments are obviously still relevant, especially as one of the developments of the Libet setup involves the successful prediction of human action.

Another interesting and relevant research result for an understanding of choice and decision-making is based on studies done in the field of cognitive science, and concerns the reasons given for our choices. Lars Hall *et al.* staged an experiment in which shoppers at a supermarket tested jam and tea. The shoppers were asked to choose the jam or tea they preferred after having tasted different sorts of jam or tea. In a second step they again tasted the jam or tea they had chosen, and had to give the reasons for their choice. But the

jam or tea had been switched in the meantime, so that the shoppers actually did *not* taste their original choice. Firstly, significantly few shoppers noticed the switch at all; and secondly, those who did not notice the switch could supply ‘good reasons’ for their choice (Hall *et al.* 2010, pp.54–61). Previously Johansson *et al.* had made similar experiments with similar results in relation to the visual choice of preferred faces, and called this phenomenon ‘choice blindness’ (Johansson *et al.* 2005, pp.116–119).

Would the above insights into human behaviour in choices ultimately rule out the possibility of mental causation in the sense that consciousness has causal power? Psychologist Daniel Wegner (1948-2013) thinks that this is indeed the case. Focusing on the causes of an action, he suggests that causes referred to in accounts of actions in general are constructed. In a discussion about how we experience conscious will, he suggests that the experienced causal path between our thoughts and actions only is *apparent*, and thus the experienced will is based on something *apparent*, ultimately supporting his conclusion that free will (or ‘conscious will’, as he denotes it) is an illusion (Wegner 2002, pp.64–67). In support of his position, Wegner presents and discusses a variety of experiments in which the subjects in one way or another incorrectly account for the authorship of their actions (Wegner 2002).

Taken together, the experiments and studies suggest the following. Voluntary actions involving movement and choice of movement – in the above cases, which hand should be moved – are *preceded* by a neuronal activity that can be correlated with the initiation of the actual movement. This neuronal activity has its onset before the *conscious* intention to move can be reported. It is possible, furthermore, to gain data from subjects in the experiment in order to predict their choice of hand. Although these results are concerned only with the initiation of movements and the choice of the body part involved, they apparently relate to what is commonly known as free will. They also seem to suggest that consciousness as such does *not* have causal power, since the conscious reports are made after the initiated movements; and that the decision-making process should rather be described in terms of the causal relations of the underlying neuronal processes. Moreover, the studies of choice blindness suggest that the reasons we consciously report for our choices may not always correlate with the actual – presumably unconscious – causes of our choices. Or, citing Nisbett, who originally inspired research in this direction, “[...] when people attempt to report on their cognitive processes [...] they do not do so on the basis of true introspection” (Nisbett & Wilson 1977, p.231). Nisbett’s claim although is too strong; there still might be *some* cases in which people correctly report the reasons for their choices. But what is clear is that it is at least common that people sometimes do not, or perhaps even cannot, report the actual causes for their choices and decisions.

2.2.3 A summary

So it seems that one main common denominator within the scientific approaches to human consciousness presented above is that they can all be regarded in a broader sense as assuming and/or supporting some form of physicalism; and unsurprisingly, philosophers proposing and/or defending more or less strictly physicalist theories of the mind often refer to the same or similar research results as those used by the above researchers (Dennett 1991; Metzinger 2004; Churchland 1986). Furthermore, the experiments about decision-making suggest that consciousness is, at least sometimes, *not* involved in the actual decision-making, and thus may not have causal power of its own, and that possibly free will is an illusion. Also, it seems that the causal power for human action lies in the neuronal processes, thus again supporting at least a form of physicalism involving causal reductionism. But what would the challenge be, more specifically, to a theistic worldview?

2.2.4. The challenge to a theistic worldview

As has become clear from the short presentation of some contemporary scientific approaches to the human mind, consciousness and self-consciousness appear to be dependent on their physical, neural basis in the brain. Tononi provides a mathematical framework in which the degree of consciousness can be *measured*. Dehaene and Changeux, developing the model of Baars, suggest that, whenever some mental content becomes consciousness, the activity in the brain is *global*, and that this activation involves the prefrontal cortex, clearly suggesting that consciousness is directly correlated with a certain type of global activity involving (amongst others) the prefrontal cortex. Damasio provides empirical evidence for the neural basis of his concepts of core consciousness, core-self, extended consciousness, and the autobiographical self. Crick is more radical in openly assuming a strictly naturalistic and reductionist approach, and his work can be regarded as a constant search for support for his central claim that the mind/soul ultimately can be reduced to neuronal activity. All of them supply a great number of empirical research results in support of their models. Tononi's theory emphasises that consciousness comes by degrees, and Damasio suggests that consciousness should not be thought of as being monolithic.

Given that the concept of the human soul is related to understandings of consciousness and self-consciousness, the most radical interpretation of the above research would be to claim that there is simply no such thing as 'the human soul', that the word 'soul' does not refer to anything that actually exists, that we are, as Crick writes, "[...] nothing but a pack of neurons" (Crick 1994, p.3). This would have obvious and direct consequences for a theistic world view. Beliefs directly or indirectly dependent on the concept of a human soul would most probably be rendered false. If the human soul or

consciousness does not exist independently, at least in some minimal sense, then life after or before death is impossible. Or if the human soul does not exist at all, then it obviously cannot be created by God at the time of conception.

Similar consequences would also arise in relation to divine consciousness or existence. If consciousness can be construed entirely in a physicalist or materialistic framework, as all the above approaches seem to suggest, then why should we believe that other forms of consciousness should *not* have some form of material basis? Assuming some form of material basis for *all* forms of consciousness would mean that non-physical beings would not have consciousness, even if they could still be coherently assumed to exist; and thus God, if existent, would have to have some form of ‘divine’ consciousness with a material basis. But what would that kind of God be? Is not the physical realm finite? In which way would God’s consciousness be ‘divine’ if it were based on matter? How could a God with consciousness based on finite matter be infinite? Or should we simply take a further step and conclude that God does not exist? Certainly, it need not be the case that *all* forms of consciousness are based on matter; but giving a complete and satisfying description of consciousness in terms of its physical basis would at least move the burden of proof to those who claim that consciousness is possible without an underlying physical basis – or at least that consciousness in some sense is independent of an underlying physical basis.

But what do the *scientific findings* of the above researchers actually imply? One thing is clear, namely that *human* consciousness in the form we experience it in our lives is dependent on the body. The case studies about the blind-sight and split-brain patients referred to earlier, for example, make clear that damage to certain brain functions directly affects the conscious mind. Moreover, in the case of split-brains, both parts – including the non-dominant hemisphere – seem to be conscious and able to experience in some sense. Would this not suggest that, in the case of a split-brain, both hemispheres alone are *sufficient* for consciousness to arise, at least in some possibly rudimentary form? But if that were the case, would that not mean, or at least suggest, that the physical is both necessary and sufficient for consciousness, thus strongly supporting a reductive physicalist approach? Furthermore, the fact that damage to the brain directly affects consciousness and our personality, our ability to act is not only supported by the above examples of blind-sight and split-brain patients, but also by many other case studies and phenomena, some of which also have been analysed and discussed by the above researchers.²⁷ That would, of course, give further support to a

²⁷ Further examples would be the different forms of agnosia (the inability correctly to recognise previously recognised sensory input – it could even be the case that one does not recognise one’s own face in a mirror), or the famous case of Phineas Gage, whose personality changed after a severe accident that affected his brain.

reductive physicalist position. Also, the studies of when and how perceptions *become* conscious – for example, Dehaene’s studies of subliminal processing – indicate that many of the processes in the brain that are necessary for the final conscious experience are unconscious and cannot be reported or willingly brought into consciousness.

Next, the *models* of consciousness presented – Damasio’s model based on core and extended consciousness, the ‘global network theory’, and Tononi’s IIT – are all based on *physical* features found in the brain or conscious systems, and capture and describe important aspects of the brain’s functionality. They emphasise interconnectivity, recursive processes, and interrelatedness in the neural activity correlated with consciousness. Their ability to describe the functionality of both conscious and unconscious processes (for example, subliminal processing in the theory of Dehaene and Changeux), to predict the effects of brain-damage (Damasio), to quantify grades of consciousness (Tononi), can be taken as support for the adequacy in their reasoning and thus as support for their commitment – sometimes not explicitly stated – to a physicalist understanding of the mind. But a physicalist understanding of the mind seems to be in conflict with the above-stated theistic beliefs, which at least at first glance seem to rely on a dualistic understanding of consciousness or the soul. If *total* dependency of the mind on the physical is assumed, it is hard to reconcile the findings and models presented with a dualistic understanding of the soul; for how could the soul be *independent* of the body if it is already *dependent* on the physical? But is it necessary to embrace physicalism in its *strictest reductive* form? Would it not be possible to understand the above research as describing conditions for consciousness, yet not identifying consciousness with these conditions?

Some comments by Tononi and Damasio do allow at least for milder forms of physicalism; Tononi does not think that all aspects of consciousness are reducible to the physical, even though consciousness is dependent on the physical, and Damasio does not want to give up the idea that there is something in the first-person perspective that cannot be captured by third-person investigation (Damasio 1999, p.305; Tononi 2012, pp.239, 245; Edelman & Tononi 2000, p.215). Dehaene, on the other hand, is convinced that dualism is refuted by the findings of current research into the brain, and that reductive physicalism should be the default position. Referring to the distinction of Chalmers between easy and hard problems of consciousness, Dehaene tentatively argues that the ‘hard’ problems are hard because they involve “ill-defined intuitions” and that “(o)nce our intuition is educated by cognitive neuroscience and computer simulations, Chalmer’s hard problem will *evaporate*” (Dehaene 2014, pp.261–262; my emphasis). Crick states very clearly that this is his default position (Crick 1994, pp.3–12). Interestingly, Dehaene’s focus on the functionality of consciousness and his rejection of epiphenomenalism has been interpreted by Andrea Nani and Andrea E. Cavanna to

allow that consciousness as a *physical* process may have causal properties – although consciousness still may be reducible (Dehaene 2014, pp.89–91; Cavanna & Nani 2014).

Although the success of the above models and theories in describing the functionality of the brain can be taken as a cumulative argument for reductive physicalism, none of the above researchers actually argue for this position; rather, they assume it, or at least some weaker forms of it. And although the *dependency* of mental processes on the physical is rather obvious and is supported by the above research, it is unclear whether, for example, it would not be possible that the mental is dependent but nevertheless fundamental.²⁸ In other words, it is not clear that the dependency of the mental on the physical, neural process – which *is* supported by the above research – in fact logically entails that it too can be reduced to the physical. In relation to the question about the soul, this would mean that, if the dependency of the mental does not necessarily lead to reduction, the soul, consciousness, or the mind may still be understood as something fundamental. Together with the fact that neither of the above researchers are in fact philosophers, a reasonable question may therefore be whether the same results – although they *could be interpreted* at least as supporting a reductive physicalist position – can reasonably and successfully be construed in a philosophical framework that is more suitable in relation to a theistic worldview. A further question related to the former would be whether the *models* necessarily depend on a strictly reductive physicalist ontology, or whether they could also be successfully applied in other ontologies. But in order to find out more exactly what the problems for dualism and reductive physicalism may be, where the tension between these two extreme positions actually lies, and also where there might be ‘openings’ and starting points for alternative positions, it is necessary to take a closer look at dualism and physicalism from a philosophical point of view. This discussion must then also be related to a theistic worldview. But, before proceeding with these questions, the challenges from research into free will also have to be described.

Firstly, it should be noted that there is a connection between understandings of consciousness and of free will. So regardless of the above results about decision-making, it should be possible to reason as follows: if the results about consciousness suggest that consciousness is *wholly* dependent and is caused by neuronal processes, then actions performed by humans, their experience of free will or agency as part of conscious experience, would also be caused by them and thus – so it may seem – they are *determined* by them and causally reducible to them. So, even apart from the actual research results about decision-making presented in the previous section, the

²⁸ Elizabeth Barnes suggested distinguishing between fundamental/derivative and dependent/independent, leading to four possible combinations. According to this categorisation, the mental would be *fundamental* and *dependent* (Barnes 2012).

results about consciousness could already be interpreted as supporting – or at least pointing in the direction of – the philosophical position of determinism and supporting causal reductionism. In fact, although Dehaene’s work focuses on consciousness, he simply concludes on the grounds of his research and his metaphysical presuppositions that determinism is true and that free will should be understood as *autonomy*, thus suggesting some form of compatibilism (Dehaene 2014, pp.262–265). “In thinking about free will, we therefore need to sharply distinguish two intuitions about our decisions: their fundamental indeterminacy (a dubious idea) and their autonomy (a respectable notion). Our brain states are clearly not uncaused and do not escape the laws of physics – nothing does” (Dehaene 2014, p.264). So one question would already be whether the results about consciousness and its dependency on neuronal activity would imply determinism, for example, which in turn would reduce the possible options for both a philosophical and a theological understanding of free will.

But what do the results about choice and decision-making presented here more specifically imply, or at least suggest? One of the more recent results presented here, the Soon experiment, gives clear indications that neuronal activity preceding our being aware of our ‘decisions’ may be determinative for the outcome of our actions. Most pressing seems to be the possibility of predicting the results of our choices. Together with the hope of even more advanced and detailed non-invasive methods of monitoring brain-activity, this opens up for speculation whether it may be possible to read and even predict our minds. Furthermore, if our awareness of our choices would be posterior to neuronal activity determinative for our actions, and if our choices were thus predictable, then the conclusion that conscious will may well be just an illusion or an epiphenomenal mental state with no causal power of its own may not be so far-fetched, despite the commonsense experience of free will. Here both the research on choice blindness and agency, and the reasoning of Wegner in relation to causation, fit well into this picture. One may have chosen something, but one does not always consciously know the causes for the choices made, and sometimes one may even *assign* agency to actions although they were not really caused by oneself. If free will were an illusion or an epiphenomenon, then these findings would fit well into the general picture and would not be surprising. Certainly, if the reasons for human choices are constructed in retrospect and in light of the actual ‘choice’, or if the feeling of agency of a person is generated with respect to her causal beliefs, or if actions are initiated at the neuronal level before the agent consciously believes them to be initiated, then it is not far-fetched that even the feeling of having chosen freely also could be constructed in retrospect. All of these results could easily be read within a deterministic framework, which regards consciousness as epiphenomenal with no own causal power; or within a reductive approach, where all the causal power is

located at the physical – in this case neuronal – level. To be sure, global determinism – determinism in every aspect of the world – is not directly supported by the results; but neuronal determinism seems at least to be supported to some – possibly even a great – extent. However, in contrast, it is possible to wonder whether it really is so surprising that humans *sometimes* (or possibly even often) do not actually know the ‘real’ causes for their actions, that their actions *sometimes* can be predicted and are initiated unconsciously, or that humans *may* be deceived in their feeling of agency. The results certainly suggest that this *may* be the case, but do not imply that this is *always* the case. In any case, a deeper analysis of the above results is necessary, especially from a philosophical point of view. But here, in accordance with the main objective, I will rather focus on the consequences of an alternative philosophical framework of consciousness for any discussion of free will.

In relation to the theistic worldview introduced above, it seems that a theological understanding of free will would already be affected both by the results about decision-making and (at least indirectly) by the possible implications of a certain interpretation of the results about consciousness. In particular, the possible personal relationship would be affected by how free will can be construed – if at all – in the light of the above research. What would a personal relationship with God or the divine mean if it were determined by neuronal activity? Would it still be personal? Would it be a ‘free’ relationship? Surely, how omniscience, omnipotence, and predestination can be understood depends on how free will may be understood, given the above results. As open theists, for example, have argued, any understanding of omniscience, omnipotence, or predestination depends strongly on the notion of free will that is presupposed (Hasker 2008; Hasker 2011; Basinger & Basinger 1986). But first it shall be discussed how an alternative philosophical framework of consciousness can be formulated, and which consequences it may have for an understanding of free will. This will narrow down the options for the theological understandings, and provide some hints for a brief discussion of omniscience, omnipotence, or predestination.

2.3. Summary

In general it can be said that none of the above results – neither those about consciousness nor those related to free will – contradict a naturalistic, physicalistic, or entirely materialistic approach. This is itself not very surprising, since many – perhaps even most – researchers within the natural sciences explicitly or implicitly presume at least some form of *methodological* naturalism or physicalism. Also, both the results and the models for consciousness seem to be in tension with a dualistic understanding of consciousness or the human mind. Yet they do not *imply* a stricter *reductive* form of physical-

ism, although they can be regarded as supporting it. The challenge for a theistic worldview in relation to the discussed findings and theories thus lies mainly in the tension between the results and the models for consciousness and dualism. As already mentioned, the above scientific findings do not directly oppose a naturalistic, physicalistic, or materialistic position. But it also is not obvious that this should be the default position. Indeed, there may be philosophical problems associated with physicalist positions that have not been explicitly or more carefully discussed in relation to the previously presented scientific research. Therefore it seems appropriate to contrast one of the arguably ‘purer’ physicalist positions – reductive physicalism – with another position at the other end of the scale – dualism – from a more purely *philosophical* point of view. By weighing the pros and cons for these positions, it may become clear why both of these positions should most likely be avoided, and which features an alternative position should have.

The results about free will and decision-making point in the direction of neuronal determinism; and, like the results about consciousness, they do not contradict a reductive physicalist position; rather, they seem to support at least causal reductionism. They also suggest that we can sometimes be deceived in our belief that we are agents of our own actions, and that we therefore sometimes – perhaps even quite often – merely have the impression of having acted ‘freely’. Indeed, certain theological concepts may be favoured directly by certain interpretations of the studies about free will, but also indirectly by how consciousness is understood.

Given the connection of understandings of consciousness with understandings of free will, in chapter 3 and 4 an alternative philosophical framework of consciousness will be developed, while in chapter 5 the possible consequences of this position in relation to free will will be briefly discussed, leading to promising suggestions for a novel approach to questions in the free will debate.

3. Why reductive physicalism and dualism should be avoided

In the light of the research results presented in the previous chapter, it has become clear that there seems to be at least some tension between reductive physicalism and dualism. (recall from section 1.3.2 that I refer to ‘substance dualism’ whenever I write ‘dualism’.) It has also been suggested that a closer philosophical investigation of these two positions may be necessary to see the limitations of these two apparently extreme positions. Certainly, also various forms of idealism could be considered. Firstly, however, the earlier investigation of the scientific research results showed that at least some form of methodological physicalism is presupposed, and that the results could be regarded as supporting a stricter form of reductive physicalism. And secondly, the challenge to a theistic world view seems to lie mainly in the tension between reductive physicalism and dualism; and so I will restrict the following investigation to central problems related to dualism and reductive physicalism. Following the methodological approach introduced in section 1.3.1, both positions can also be seen as thesis and antithesis; and the analysis in this chapter will lead to some suggestions for a possible synthesis. Also, in the debate about consciousness, the positions of reductive physicalism and dualism are often contrasted with each other (see, for example, Dennett 1991, pp.33–42; Churchland 1986, pp.315–347; Dehaene 2014, pp.1–16). Having said that, this obviously does not mean that idealism as a philosophical position is irrelevant to the mind/body problem and/or questions about free will. On the contrary: in the end it may well turn out to be the case that, in the search for alternative positions, ideas related to or reminiscent of idealism may be helpful and enlightening.²⁹ In any case, the forthcoming analysis may lead to various suggestions about alternative positions. In particular, I will argue that, given the problems highlighted in this chapter, it is reasonable to search for alternative positions, and that these may be useful to con-

²⁹ There are several ‘versions’ of idealism in western philosophy (Leibniz, Berkeley, Kant, Hegel...). In religion, important examples of idealistic approaches to reality are found within Hindu philosophies that suggest that the material world is in fact an illusion. This obviously contrasts with some versions of reductive physicalism whose proponents sometimes conclude that all mental experiences and properties are finally epiphenomena, and can be eliminated or reduced.

sider in attempts to understand consciousness from both a scientific and a philosophical point of view. Finally, it should be noted that, although some standard arguments in relation to the positions of dualism and reductive physicalism will be discussed, providing an overview of central problems, the goal of this chapter is *not* to give a complete, detailed, and overall analysis of the issues within dualism and/or reductive physicalism, but rather, with dualism and reductive physicalism as a starting-point, to outline some reasonable paths of investigation into how a plausible alternative philosophical framework of consciousness and free will should be formulated.

Thus the structure of this chapter will be, firstly, to present a brief background of dualism and reductive physicalism in section 3.1. Next, problems, but also strengths, of either position will be discussed in section 3.2. Here, two philosophical models of consciousness that both relate to scientific research will also be discussed and related especially to physicalism. Finally, the summarising and concluding section of this chapter, section 3.3, will establish which alternatives will be discussed in chapter 4.

3.1 A short background of dualism and reductive physicalism

Historically, dualistic concepts of human nature are not uncommon. One example of importance for western philosophical and theological traditions is the concepts developed by the ancient Greeks, who used three words – ψυχη-psyche, soul; νοϋς-nous, mind; and πνεϋμα-pneuma, spirit – that all somehow seem to be related to a concept of something mental, something distinct from the body, leading our thoughts to a dualistic – or even pluralistic – concept of human nature. Yet none of the above terms can simply be equated with the corresponding ‘modern’ term or translation. For example, the soul (ψυχη-psyche) in ancient Greece was actually a broader concept that included consciousness and even the principle of life. Each of the above terms could reasonably and fruitfully be analysed in depth, but that is obviously neither within the scope of this thesis, nor is it its aim. Nevertheless, at least in a Christian context, concepts and ideas from ancient Greece have had a strong influence on theologians in general, and especially on mediaeval scholars. Thus some brief remarks seem to be in order.

One of the Christian theologians influenced by the Greeks was Augustine, who adopted the idea that the soul is made of some kind of substance, and that it is able to reason and exert causal power on the physical body. Similar ideas can be found in Plato’s description of the soul as an immortal, immaterial, life-giving force (Goetz & Taliaferro 2011, pp.7–19). Interestingly, as stated in the introduction, Descartes’s famous argument, “I think, therefore I am – *cogito ergo sum*”, reminds one strongly of Augustine’s ar-

gument, who argues that we know what a soul is since we are souls. It seems quite obvious, in fact, that in modern terminology Augustine could be regarded as a dualist (Goetz & Taliaferro 2011, pp.32–47). Aristotle – in opposition to his teacher Plato – understood the soul and the body as a unity; but he also introduced the concept of *vouç-nous*-mind as an immortal, not bodily, part of a human being, thus still using a concept that, in modern terms, could be described as dualistic (Merlan 1967, pp.39–47). This Aristotelian concept of the soul had a major influence on the theology and philosophy of Thomas Aquinas. Similarly to Aristotle, Aquinas claimed that the soul and the body form a unity. But since the soul and the body form a unity, the soul must cease to exist as soon as the body ceases to exist; and this confronted Aquinas with the problem of how the immortality of the soul should be understood. In an attempt to solve this problem, Aquinas introduced the concept of *subsistence*.³⁰ The soul subsists when the body ceases to exist, and this subsistent relation is somehow maintained by God (Goetz & Taliaferro 2011, pp.48–64).

The thoughts of the philosopher Descartes have also had great influence on past and present philosophers and on theologians. Descartes proposes that the mind or soul is an indivisible substance in its own right that is distinct and exists independently from the body. This form of mind-body dualism is usually denoted as ‘Cartesian dualism’ or ‘substance dualism’. Although this may remind us of the kind of dualism the ancient Greeks proposed, Descartes regards the body more as a biological mechanistic machine, whereas Aristotle and Plato still believed in the existence of a life-giving force. Descartes cannot conceive how these biological processes in the body could possibly generate the mind and consciousness.³¹ One of the arguments

³⁰ According to McNerny and O’Callaghan, Aquinas understood subsistence as follows: “A subsistent is something capable of existing on its own, not in another. But that capacity to exist on its own is not distinctive of a substance. A chair subsists. But on Aquinas’ account, it is not a substance. A hand that has been detached from a living body is also a subsistent (Aquinas ST Ia Q75 A2 ad 1). It is not properly speaking a human hand any longer, because it cannot do the sorts of things that human hands do. Whatever it is, it can exist apart from the substance of which it was formerly a part. A substance, on the other hand, is something that is both subsistent and complete in a nature—a nature being an intrinsic principle of movement and change in the subject. A detached human hand, while subsistent, is not a substance because it is not complete in a nature. A human hand is defined functionally as part of a human substance. A detached human hand is the remains of a human hand properly speaking, and is only called human analogously. So it is subsistent but not a substance. Similarly, a human soul is a constitutive element of the nature of a human substance.” (McNerny & O’Callaghan 1999)

³¹ Based on Descartes’ writings and on his own responses to critics, Galen Strawson presents an unorthodox reading of Descartes’ works. He argues that Descartes is *not* a ‘Cartesian dualist’ in the usual reading of this term. Furthermore, he proposes that “[...] Descartes acknowledges the possibility that physicalism, i.e. real physicalism [in Strawson’s sense], may be true [...]” (Strawson 2006a, p.212, my comment). Strawson describes in further detail what he means by ‘real physicalism’ in his well-known article, “Realistic Monism – Why Physicalism entails Panpsychism” (Strawson 2006b). He also thinks that the present day debate may be

used by Descartes to prove this goes as follows: Since the body is divisible, but the soul or mind is not, they cannot be substances of the same kind, and thus the mind or soul cannot be produced by the body, and they both exist independently of each other (Descartes, Meditation Six). A similar argument is based on the observation that the mind is thinking but has no ‘extension’, whereas the body has extension but is non-thinking (Descartes, Meditation Six). Since he still has to explain somehow the origin of the mind or the soul, he claims that God must have created souls, and that they too are immortal. There are some obvious problems with Descartes’ position, one of them being how the body and the mind actually interact. Originally Descartes suggested that the mind or soul is connected to the body via the pineal gland (Goetz & Taliaferro 2011, pp.66–98). This has been shown to be false, and would anyhow not solve the problem of interaction.

At present dualism is not a position held by the majority of philosophers. However, there are still important and influential philosophers who defend this position. Amongst philosophers of religion, both Richard Swinburne (1934-) and Alvin Plantinga are proponents of dualism.³² Both present detailed and advanced arguments in favour of dualism. But before presenting and discussing some problems with dualism and reductive physicalism, it may also be appropriate to have a brief look at the background of physicalist positions.

In the case of physicalism too, it is possible to search for accounts in the history of philosophical thinkers that point in the direction of a materialistic or physicalist understanding. The atomistic doctrine of Democritus (approx. 430-370 BCE) can be seen as an early form of materialism. According to Democritus, everything is made up of indivisible *atoms*. Even the soul, the ψυχη-psyche, is regarded as composed of a special kind of atom, the fire-atom (Berryman 2010). According to Aristotle, Thales of Miletus (624-546 BCE) claimed that water is the originating principle in nature. This could also be interpreted as a form of materialism (Aristotle *Metaph.* I III:5, 983b 20). But even though Thales thought that water was the primary principle in the world, he still embraced a form of pantheism in which everything in the world was full of gods (Aristotle, *De An.* 411 a7-8). So it is far from clear whether it really is possible to regard Thales as a materialist in the modern sense. It is also noteworthy that materialism seems to have been considered in India even before the time of the Buddha (Zimmer 1979, p.554 n.1).

Whatever the case, until the rise and success of natural science, materialism or physicalism – a term often used as a synonym for materialism and

foolish “[...] in continuing to ignore the historical debate turning Descartes into a silly straw man” (Strawson 2006a, p.215). Of course, in light of Descartes’ clear emphasis elsewhere on the material, physical, and mechanical aspects of the body, this may not seem at all surprising.

³² Richard Swinburne has recently published a book in which he defends a substance dualistic position, discussing problems connected to the mind and free will (Swinburne 2013).

which, as already stated in the introduction, I shall mainly use throughout the rest of this thesis – did not have an influential position in western thinking. But with the progress of natural science, explanations of phenomena in nature became clearer and more persuasive. Einstein’s general theory of relativity, which includes Newton’s theory of gravity as a special simplified case, together with modern versions of quantum theory, made it possible successfully to describe both microscopic events in matter and macroscopic cosmological processes. Darwin’s evolutionary theory explains the process of how life developed on earth. Neuroscience attempts to explain mental properties in terms of the activity of neurons. A list of the various achievements within natural science would be long; and it is undeniable that natural science has made great progress in its fields of research. The underlying – but often not clearly stated – assumption within natural science seems to be that anything in the world can be explained in terms of natural science and, furthermore, that since biological processes depend on chemical processes and chemical processes on physical, any process ultimately can be reduced to physical processes, leading to the position of reductive physicalism introduced in section 1.3.2. – claiming, in summary, that all phenomena in our world can both be *causally* and *ontologically* reduced to mechanisms governed by the laws of physics. This seems to be in clear opposition to the dualistic claim that there are two parts of reality: one material, the other mental, spiritual, irreducible to the physical, ontologically independent, and certainly not material.

Given this brief overview of the background of dualism and reductive physicalism, it is now time to take a closer look at some problems in relation to these positions.

3.2. Problems in relation to dualism and reductive physicalism

Certainly, like most philosophical positions, both dualism and reductive physicalism may have advantages and strengths. Regardless of whether one would wish to defend one of these positions or an alternative position, it seems to be worth highlighting at least some possible strengths or advantages, thus allowing for the possibility of integrating them into alternative approaches. Therefore a short presentation of such strengths will be given before turning to a stricter and more analytical account of possible problems with dualism and reductive physicalism. This analysis will focus mainly on problems, arguments, and ideas suggested by some more well-known philosophers, without claiming to cover the entire field. Those defending – or at least sympathising with – a reductive physicalist approach will be, for example, Daniel Dennett (1942-), Jaegwon Kim, Thomas Metzinger (1958-), and

Patricia Churchland (1943-). These philosophers are also of special interest, since they frequently refer to the type of research presented in the previous chapter. Metzinger in particular attempts to explain a great variety of interesting and relevant neurological states, many of them pathological. John Searle may represent a form of non-reductive physicalism. Given that this thesis is in the philosophy of religion, the dualist position is represented by two prominent philosophers from the Christian tradition, Richard Swinburne and Alvin Plantinga. Arguments of Galen Strawson (1952-), and David Chalmers against reductive physicalism will be discussed, since they also point towards possible alternative solutions to either of these extreme positions. Of course, ideas, reflections, and arguments by other philosophers will be considered whenever relevant or necessary. Furthermore, the question will be raised and briefly discussed whether explanatory models of consciousness such as those suggested by Metzinger or Dennett can be taken as supporting the ontological positions of these philosophers.

3.2.1. The strengths of dualism and reductive physicalism

On the one hand, we have the ability of dualism to be compatible with the ‘theistic worldview’ depicted in the introduction. If the world consists of at least two different types of substances, mind and matter, it is no problem to identify the soul with the mind, or at least certain mental properties and features of the mind with the soul; and if there are souls independent of matter, it is equally simple to imagine that these souls may be immortal or may even have existed *before* birth. So ‘life after death’ or ‘reincarnation’ – both concepts being central to many religions – would pose, at least at first glance, no problem for a dualistic understanding of human beings. Given that the soul is ontologically separate, it is reasonable to think it has some causal power of its own. So if the mental realm in a dualistic view is not determined, acting freely (in the sense that we are able to choose otherwise) would at least be possible. Also, since the soul acts and exists independently from the physical, which may be determined, and often is understood as such, the soul would not be restricted by the physical; and thus any determinism that applies to the physical would not necessarily apply to the soul. But it should be noted here that the interaction problem already appears at this stage, since it is unclear, for example, how the soul is informed by the body to make a free decision. The consciousness of humans could also be understood as a ‘lesser’ form of the supposedly transcendent consciousness of God, which would also smoothly fit into a certain interpretation of the Christian theistic idea – not specified in the ‘theistic worldview’ introduced in section 1.4 – of humans as created in the *imago Dei*. Finally, the transcendence of God could simply be understood as God not being physical, being beyond the physical. If the mind or the soul are not physical – thus in a way already transcending

the physical – then why should the consciousness of God and thus of God herself not be non-physical and transcendent?

In short: a theistic worldview, including the beliefs summarised earlier, would generally fit neatly into this form of dualism. In other words, it seems that there are important *theological* reasons for favouring dualism – unless, of course, the above beliefs can also be incorporated into an alternative framework. Moreover, the possibility of free will, even in the stronger libertarian sense, could be elaborated, thus possibly providing a *philosophical* reason for favouring dualism. Of course, a physicalist would presumably *not* consider the ability of dualism spelt out here to be a strength. Nevertheless, in the context of this thesis in which theistic beliefs will be discussed, this should be considered a strength. Also, dualism would be able, in much the same way as suggested above, to account for the commonsense intuitions of humans of having first-person-perspective and of being able to act freely.

In any case, another strength, closely related to some of the arguments against reductive physicalism to be discussed further below, is the following. Dualism by definition avoids the problem of how the mental, consciousness, or – in Galen Strawson’s terminology – the experiential can be understood merely in terms of the physical. Since the mental and the physical are separate, there is no need to explain either in terms of the other, nor even the possibility of doing so.

Also, the commonsense view that we experience ourselves as unified, that there seems to be a unity of consciousness, could apparently be easily explained by a dualistic approach. John Searle regards the unity of consciousness, the sense that all conscious experiences are somehow unified, together with subjectivity – the first-person perspective – and qualitiveness – the experience that all conscious states have a certain ‘feel’ – as one of three important features of consciousness (Searle 2000, pp.559–564). Apparently, in a dualistic understanding the soul or the mind could be regarded as a unity, and thus the experience of all conscious states being unified seems to be fairly easy to understand from this point of view. Nevertheless, as shall be briefly elaborated further below, the question of unity may not be as simple as it appears to be. Further, dualism can easily account for our intuitive feeling that there is something ‘more’ to the mental, that there is a quality in the mental that cannot be fully captured in terms of the physical. It is this commonsense intuition that Searle attempts to account for in the three features of consciousness he describes.

On the other hand, we have the strengths of natural science mentioned in the introduction, and the challenges posed by natural science discussed in the previous chapter. The results and successes of natural science in general and of neuroscience in particular seem to suggest that, at least in principle, it should be possible to describe and to explain mental events and properties, consciousness, self-consciousness, and free will in terms of neural events.

This may be encouraging for natural science, but, as we have seen in the previous chapter, this success, although supportive, is not strictly an argument for reductive physicalism. The neuronal correlates of consciousness – NCC, for example – are obviously *necessary* conditions for the corresponding mental events and properties, for subjectivity, and for qualitativeness; but it is far from clear that they are *sufficient*. So the results from neuroscience do not directly imply that an entirely reductive physicalist approach is capable of solving the mind/body problem, or of explaining consciousness and free will; but they do give us the impression that this might be possible. Consequently, many neuroscientists such as those discussed in the previous chapter accept that the philosophical basis of neuroscience should be some form of stronger or weaker materialism or physicalism. Thus, although the success of natural science is not a conclusive argument for reductive physicalism, it seems that a possible and presumably even common position might be to assume or hope for the truth of reductive physicalism.³³ Furthermore, reductive physicalism regards the world as a whole, a unity. It is a monistic approach, and it is one of the major goals of a reductive physicalist to explain everything in terms of the fundamental laws of matter, to include all existing phenomena in the world in the same explanatory theoretical framework. By Occam's razor, it seems obvious that a monistic approach – not necessarily reductive physicalism – should be favoured. Consequently, the fact that reductive physicalism, in contrast to dualism, is monistic could or even should be regarded as a strength. Certainly, there may be further strengths of either position. But again, the analysis of dualism and reductive physicalism offered here makes no claim to being complete. Still, the strengths emphasised here are both fairly obvious and relevant.

In summary, dualism has its strength in its compatibility with a theistic worldview – at least for a person with inclinations towards a theistic worldview – in avoiding the apparent explanatory difficulties in understanding mental phenomena in terms of the physical, and in regarding consciousness in accordance with experience as unified. It is also able to account for the commonsense intuition that humans have a first-person-perspective and free will. Two major strengths of reductive physicalism lie in its monistic approach and the fact that scientific research – as has been exemplified in chapter 2 – is supportive of this specific type of ontology. Certainly, the above-stated strengths of both dualism and reductive physicalism could al-

³³ Dehaene is highly optimistic that the 'scientific' approach will finally provide an adequate and satisfying description of consciousness. His focus is on 'access consciousness', since he fears that "[...] the notion of phenomenal consciousness [...] leads down a slippery slope to dualism" (Dehaene 2014, pp.10, 1–16). It should be noted here that many of the arguments against reductive physicalism are based in one way or another on 'phenomenal consciousness'. But merely focusing on 'access consciousness' is an assumption that ought to be further motivated, since the 'phenomenal' aspects of consciousness are apparently part of everyday human life and experience.

ready be used as arguments, or at least as starting points for arguments, against reductive physicalism and dualism respectively; and the question is what such arguments may more specifically look like, and what kind of problems dualism and reductive physicalism may face.

3.2.2. Problems in relation to dualism

Many arguments against and objections to dualism have been proposed, revealing some major issues with the position of dualism. Here some of the more important and forceful arguments and central problems shall be presented and discussed. Although it has been mentioned as a strength that dualism need not explain the mental in terms of the physical, this seeming strength of the mental and the physical being separate can easily be turned into a weakness. Unsurprisingly, one more obvious and presumably forceful objection to dualism is directed towards the interaction between the mind, the mental or the soul, and the physical. Philosopher Daniel Dennett, defending a reductive physicalist position with regard to the mind/body problem, thinks that the “fatal flaw” of dualism is indeed its inability to explain satisfactorily *how* the mental affects and interacts with the physical, and that dualism violates the principle of the conservation of energy. The mental lacks physical mass; but according to the principles of physics, any change of the movement of a physical entity, and thus also of affecting any brain cells, involves an acceleration and thus requires energy. But how does the mind or the soul, assuming they are non-physical, supply this energy (Dennett 1991, pp.34–35)?

Dennett’s argument can be split into two: apart from the argument that interaction between the mind and the physical would violate the conservation of energy, it also seems to violate the causal closure of the physical. His reasoning could be formalised as follows:

- (1) The mind or the mental as an immaterial substance changes brain states and thus energy states (dualistic interaction).
- (2) Any change in the physical world must involve a change or exchange of energy (conservation of energy).
- (3) Being an immaterial substance, the mind or the mental cannot supply or receive energy.
- (4) Thus the conservation of energy is violated.

The problems with this argument could be resolved in three ways: the mind as an immaterial substance cannot interact with the material; the mind is not immaterial; or the conservation of energy is false.

The argument based on the causal closure is often formulated as a trilemma.

- (1) The mind and mental events are not physical.
- (2) The realm of the physical is causally closed.

(3) The mind or the mental can cause physical events.

A closer look at these three propositions reveals the following. If (2) and (3) are true, not-(1) follows. But if (1) and (3) are true, not-(2) follows. Or if (1) and (2) are true, not-(3) follows. The first would amount to some form of physicalism, the second to dualism, and the third to some form of epiphenomenalism, presumably in a physicalist setting. The third possibility – denying (3) – seems to be unreasonable. Humans in general do cause events, and denying it would contradict our everyday and commonsense experience. Also, in parallel with Plantinga’s evolutionary argument against naturalism (Plantinga 2011, chap.10), it should be possible to reason that, if the mental were causally inefficacious, then our cognitive faculties would not be reliable. The other two possibilities lead back to the choice between physicalism or some form of dualism. But at least as a physicalist denying (2) seems to be just as much out of the question. Certainly, if causal closure is valid and true, then nothing non-physical could be the cause of an event in the physical. To put it in other words: any causal process should ultimately be reducible to physical processes. Thus it seems hard to understand how, in a dualistic setting, anything non-physical such as the mental, the mind, or the soul could possibly affect the physical; and thus physicalists have a strong argument against dualism (Schlicht 2007, pp.20–22).

Historically and famously, Princess Elisabeth of Bohemia (1596-1662) challenged Descartes’ dualism in her correspondence with him. Her argument also focuses on how the mind and the body causally interact. Jaegwon Kim translates this argument into modern terminology and arrives essentially at much the same argument as presented above (Kim 2011, pp.46–50). Even the German philosopher and Jesuit Godehard Brüntrup (1957-), who definitely cannot be regarded as a reductive physicalist, considers causal interaction to be the central problem for dualism.

Dualistic theories are in the assessment of many philosophers explicitly or implicitly ‘mystery theories’. What is meant by this is that they cannot make *intelligible* the causal nexus between the observable physical world on the one hand and the realm of the mental on the other. This problem appears most clearly in flat out dualism, since the interaction of two ultimately different substances, from Descartes to Popper and Eccles, has only been explained by *ad-hoc* hypotheses (be it the notorious pineal gland or the only vaguely defined liaison brain).³⁴ (Brüntrup 1994, p.17; my translation)

³⁴ The original German text is as follows: “Dualistische Theorien sind in der Einschätzung vieler Philosophen explizit oder implizit ‘mystery theories’. Damit ist gemeint, daß sie den Kausalnexus zwischen der beobachtbaren physischen Welt einerseits und dem Bereich des Mentalen andererseits nicht *intelligibel* machen können. Am deutlichsten tritt dieses Problem beim ungeschminkten Dualismus zutage, da die Interaktion zweier grundlegend verschiedener Substanzen von Descartes bis Popper und Eccles nur durch *Ad-Hoc*-Hypothesen erklärt wer-

Indeed, the interaction problem in dualism is at least twofold, since not only an explanation of how mental life functions is required, but also the ontological gap between the mental and the physical must somehow be bridged. Interestingly, Patricia Churchland, who argues similarly that the interaction problem is especially pressing for dualism, does not conclude that dualism is false: “The unavailability of a solution to the manner of interaction between two radically different substances does not entail that substance dualism is false” (Churchland 1986, p.320). She leaves open the possibility that there might be a dualistic solution; but being a physicalist, she obviously argues that dualism is implausible (Churchland 1986, pp.317–323).

Kim discusses another argument based on causality. He wonders how mental substances, which by definition are outside physical space, can be paired successfully with the physical events they are supposed to cause. Kim writes:

It is metaphysically possible for there to be two souls, A and B, with the same intrinsic properties such that they both act in a certain way at the same time and as a result a material object, C, undergoes a change. Moreover, it is the action of A, not that of B, that is the cause of the physical change in C.

What makes it the case that this is so? What pairing relation pairs the first soul, but not the second soul, with the material object? Since souls, as immaterial substances, are outside physical space and cannot bear spatial relations to anything, it is not possible to invoke spatial relations to ground the pairing. What possible relations could provide causal pairings across the two domains, one of spatially located material things and the other of immaterial minds outside space? (Kim 2011, p.52)

Certainly, this argument by Kim – commonly known as the ‘problem of causal pairing’ – points to another important problem also related to causality and the interaction between the mental and the physical. Again, it should be emphasised that the above arguments are not a complete, all-encompassing account of problems in relation to dualism; rather, they highlight some of the more common reasonings against this position.

Doubtless, the preceding problems need to be addressed by a dualist; and it is not surprising that philosophers defending dualism have done so in various ways. Christian philosopher Alvin Plantinga points out that the conservation of energy holds for *closed* systems, and that it is not clear whether the mind/brain system can be regarded as a *closed* system. At any rate, for Plantinga, as a person believing in the Christian doctrine of *creatio ex nihilo* the universe is not a *closed* system. Furthermore, he regards the ‘causal closure of the physical’ instead as a presupposition grounded in faith. Also, with

den konnte (sei es die notorische Zirbeldrüse oder das nur vage bestimmte Liaisonhirn)” (Brüntrup 1994, p.17).

reference to David Hume's argument, he claims that understanding causation as a conjunction of events or as counterfactual dependency would not be contradicted by the cause being 'mental'. In the case of 'causal pairing', Plantinga explains that such pairing would easily be possible in a theistic setting: God could be the force that pairs 'soul A' in Kim's argument to the change in material object C (Plantinga 2007, pp.125–133). Further, in relation to the above-stated trilemma, E.J. Lowe (1950-2014) correctly points out that if the causal-closure principle is understood as something as strong as "no physical event has a non-physical cause", then the above trilemma remains with the possible conclusion that dualism is false. But causal closure could also be understood as there being sufficient physical causes for every physical event, which is obviously a weaker claim (Lowe 1999, pp.225–230). Richard Swinburne provides an argument against causal closure based on epistemological reasoning. In very brief and simplified terms, his argument goes along the following lines: a scientist would have to base his/her justified belief in causal closure on beliefs that in the past would have been caused by some conscious events. But conscious events, on the principle of causal closure, cannot be causes of brain events. Thus the scientist seems only to be justified in believing in causal closure if it is assumed to be false in the past (Swinburne 2013, pp.117–123).

Moreover, apart from the defence against the presented reasonings, dualists have attempted to account for how interaction between the mental and the physical is at least possible. Indeed, for some dualists, establishing the *possibility* of interaction might be sufficient. Here many suggestions point in the direction of quantum physics, such as those by physicist Henry P. Stapp (1928-). Yet at some point he also employs the process ontology of Alfred North Whitehead (1861-1947), thereby possibly coming closer to a panpsychist view on reality than a merely dualistic view (Stapp 2007, pp.85–98). Swinburne also regards quantum physics as a possible basis for theories for the interaction between the mental and the physical (Swinburne 2013, pp.114–117). Likewise, Roger Penrose (1931–) and Stuart Hameroff (1947–) have argued in this direction.³⁵

Although it is beyond the scope of this thesis to discuss in detail the attempts to describe mind/body interaction in terms of quantum physics, a brief comment seems to be in order. I believe that there are some major problems with such explanations. One is that quantum effects in the micro-world are usually assumed to be cancelled out so that, in general, they do not affect the macroscopic world; so a clear description of how quantum effects influence brain-processes, for example, would still be needed. This certainly would not *prove* that such quantum effects are impossible. Nevertheless, it seems that they do lose some of their plausibility; for, if quantum-effects

³⁵ Their ideas and models of consciousness can be traced back to the late 1980s, and have been developed and defended by them until today.

usually cancel out in the macroscopic world, then why should the proposed quantum effects of the mind *not* do so?

Another problem is the following: how could one possibly find out that there is some interaction between the mind and the microscopic processes in the brain at the level of quantum physics? Given the laws of quantum physics, and assuming that there were some device to observe this interaction, the observer would interfere at the points of interaction and influence the possible empirical results; and the question would then arise as to whether the effects seen in the measurements were in fact caused by the ‘mind’ interacting or by the observer interacting. In any case, it seems that such investigations would face serious experimental and methodological difficulties. Given that it is hard to see how these difficulties may be solved, the question is how a speculative explanation based on interaction at the level of quantum physics would be better than no explanation or any other kind of speculative explanation. Although it may not be possible to *prove* its impossibility, such an explanation – seemingly based on natural-science – would still be somewhat speculative. In that case, it might be better to have an explanation based on philosophical ideas instead of *giving the impression* that there might be some form of empirical evidence for it.

In any case, questions involving causation and the causal influence of the mental are central to the arguments presented above. It is also clear that causation is related to determinism and possibly to free decision-making. Further, even in a physicalist setting, the question of ‘mental causation’, of how mental processes – even if they are ultimately understood as physical processes – cause physical processes has to be answered. Jaegwon Kim has discussed problems concerning ‘mental causation’ extensively throughout his academic career. He relates mental causation to various positions, ranging from reductive physicalism to (substance) dualism, highlighting the importance and centrality of this issue (Kim 2011, pp.193–223; Kim 2005; Kim 1993). Thus, independent of the possible importance of ‘mental causation’ in alternative positions to be discussed and the problem of causal interaction in dualism, a deeper analysis of mental causation and the causal closure principle seems to be necessary, and will be included in chapter 4.

Apart from the above-mentioned problems, the case for dualism may be even worse, for even if the ‘causal closure of the physical’ is extended to the ‘causal closure of the world’, possibly including the mental, the soul, spirits, or whatever might exist in the world, thus opening up the possibility of mental causation, dualism would still need to provide an adequate account of *how* the mental interacts with the physical; it still would not satisfactorily explain how the mental has an effect on the physical. Especially in relation to the natural sciences, this is a major drawback, or possibly even a “fatal flaw” – to use Dennett’s words – since it is undoubtedly one of the main goals of natural science to find satisfactory *explanations* of how the world

functions. Consequently, the seeming ability of dualism to provide a satisfactory explanation of the interaction of between the mental and the physical must appear to be deeply unsatisfactory to a natural scientist.³⁶ Furthermore, dualism splits the world into two parts: one material and the other non-material. The former can be investigated by natural science, but what about the latter? By splitting up the world in this way, it seems that the non-material parts cannot be objects of investigation by the natural sciences. But are the mind and the mental not at least in some sense natural phenomena? Thus one may wonder whether this should be acceptable, or whether it would not be better to strive for a unified understanding of the whole world, as has been suggested in relation to the strengths of physicalism in section 3.2.1. Indeed, physicalists and dualists may have different ‘goals’. While a unified view seems to be a virtue in physicalism, dualism seems to have a stronger emphasis on ‘saving the phenomena’, as has become clear in the discussion of the possible strengths of physicalism and dualism.

At any rate, what would happen if dualism could resolve the great issue of describing the interaction of the material and the non-material? If dualism succeeded in explaining *how* the non-material – or, in the case of the mind/body, the mental – *causally* interacts with the physical, then the non-material would not stand causally apart from the material: it would be causally connected to the material. Thus – even if the non-material did not become material, and in some sense might still be ontologically independent – the understanding of the world would become causally unified, and it would at least no longer seem necessary to split up the world into two *distinct* and different parts. Rather, a successful solution to the interaction problem would open up for further investigation into the ‘nature of the non-material’. Thus, if it is not necessary to divide the world into two causally, then why would it not be more reasonable to adapt a *monistic* view? Dualism would in some sense cease to be dualism if it managed to explain this interaction. So the lack of an adequate description of the interaction of the mental, non-material and the physical is indeed, on the one hand, a major unresolved issue for anybody who wants to defend mind/body dualism, and deeply unsatisfactory for many researchers. On the other hand, resolving the problem would lead to a more unified understanding of the world, which in turn would suggest the search for an ontology that is more suitable to this unified understanding, possibly rendering dualism redundant and/or leading to a monist position. Yet the lack of a solution to the problem of interaction does not – even in the

³⁶ In the late 1970s, neuroscientist John C. Eccles and philosopher Karl R. Popper attempted to develop a dualist interactionistic account of the mind and the body in their famous and comprehensive book, *The Self and its Brain*. The philosophical part works out in detail the weaknesses of materialism/physicalism, and the neuroscientific part introduces the reader to the state of art of neuroscience in the 1970s. Many parts of the book arguably remain relevant today; but, as far as I can see, Popper and Eccles do not really describe *how* the self interacts with the brain (Popper & Eccles 1982).

eyes of dedicated physicalists such as Patricia Churchland – imply that dualism is false (Churchland 1986, p.320).³⁷

Furthermore, the seeming strength of dualism in easily explaining the unity of consciousness can be questioned on the grounds that it is far from clear what is meant by ‘unity’. Even Searle, who refers to the unity as an important feature of consciousness, describes consciousness not simply as a single entity but rather as the outcome of a unifying process (Searle 2000, pp.561–562). Certainly, there is ‘something’ or some process that unifies these centres of consciousness; but how would ‘a soul’ be a more adequate explanation than an explanation based on neural processes? Also, one may wonder whether ‘unity’ has to be understood in the sense of being simple? In fact, Metzinger and Patricia Churchland argue that the unity of consciousness is not a clear concept. How would subliminal processes, or the cases of blind-sight previously described, relate to this unity? How would the soul unify all processes involved in conscious experience (Churchland 1986, pp.321–322)? In Metzinger’s words: “Consciousness may turn out to be a ‘cluster concept’” (Metzinger 2004, p.214). Furthermore, he also thinks in relation to consciousness that “(o)ne possibility that always has to be kept in mind is the nonexistence of a singular ‘essence’ of the phenomenon” (Metzinger 2004, p.214).

In summary, many important problems in relation to dualism are in some way or another connected to causality and to the question of how the mental and the physical might interact. Firstly, it is not clear how the mental *qua mental* could *cause* any change in energy; secondly, causal closure excludes the possibility of any other form of causation than physical causation; and finally, causal pairing poses a problem to dualism. Further, proposing ‘solutions’ based on quantum physics, although not refuted in principle and defended by some, may not be the most obvious path to follow. It is also not clear whether dualism actually avoids the explanatory difficulties in relation to the mental, as suggested in section 3.2.1. Given the problems closely related to causation, it seems both necessary and worthwhile to analyse further the concept of ‘mental causation’ and its background. This will be done in chapter 4. But before turning to problems related to reductive physicalism, the relation of some models of consciousness to dualism and reductive physicalism based on philosophical ideas will be briefly discussed.

³⁷ Another difficulty briefly discussed by Churchland is that substance dualism faces the question “[...] where the soul stuff came from?” (Churchland 1986, p.320). If we have evolved from other mammalian species, then when did the soul or the mind come into the picture? Is it a product of evolution? Of course, here a theological explanation could easily be given. The soul could simply be the result of some form of divine intervention. Unsurprisingly, the price of such an explanation seems too high for Churchland, and presumably even for others involved in the natural sciences (Churchland 1986, p.320). This question is certainly relevant to a deeper analysis of the problems of dualism, but in this thesis issues of dualism in relation to evolutionary theory will not be discussed.

3.2.3. Models of consciousness in relation to dualism and reductive physicalism

Parallel to the explanatory success of the scientific research into the mind described in the previous chapter, the explanatory success of philosophical models and theories based on a non-dualistic and/or reductive physicalist ontology can, it seems, be taken as an argument against dualism. In the cases of Metzinger and Dennett, they have developed their own models; and Patricia Churchland discusses what a successful theory of consciousness may look like (Churchland 1986, pp.403–480). All of them make ontological commitments to reductive physicalism on the one hand, and on the other hand suggest explanatory models or strategies for finding models of consciousness, mental phenomena, and so on. They also frequently refer to research into the brain within the natural sciences. Their theories and models are usually regarded as supporting their philosophical positions; and, depending on the success of such models, they can thus obviously also be interpreted as arguments against philosophical positions that are contrary to the positions of the philosophers suggesting the models. Furthermore, there are of course subtle differences between the different positions of the philosophers identified above. More generally, distinctions between, for example, functionalist, representationalist, and eliminativist approaches are often made. Dennett's position could be regarded as functionalist and eliminative, whereas Metzinger's can be seen rather as representationalist and eliminative. But it seems to be more important for this investigation that the above-mentioned philosophers suggest that the mental and consciousness can be explained entirely in terms of the physical, and that they all reject and argue against dualism. The fact that Dennett's model, for example, is based on a functionalist approach may not be as important in the context of this thesis as his ontological commitment to reductive physicalism. In fact, German philosopher Tobias Schlicht argues, for example, that functionalism is ontologically neutral to start with, and that functionalists develop this position into a physicalist position by referring generally to physical states as the basis for the functions involved (Schlicht 2007, p.111). The same may be the case in relation to Metzinger's theory. Anyhow, such distinctions will not be the main concern in this investigation, and in general will not be considered. What is more interesting in this context is to give a brief description of Dennett's and Metzinger's models, some results of their models, what they conclude from their models, and how these conclusions relate to dualism and reductive physicalism.

Daniel Dennett developed his 'multiple draft model' in the early 1990s. Dennett writes: "According to the Multiple Draft model, all varieties of perception – indeed, all varieties of thought or mental activity – are accomplished in the brain by parallel, multitrack processes of interpretation and elaboration of sensory inputs" (Dennett 1991, p.111). These parallel

processes can be seen as competing with each other, some of them dying out, while others become ‘conscious’ (Dennett 1991, pp.111–138). In an earlier article, Dennett uses the metaphor of ‘fame in the brain’ or ‘cerebral celebrity’ for those drafts that finally become conscious. Consciousness is just the brain process in which some drafts achieve ‘fame in the brain’ (Dennett 2001, pp.224–228). This approach reminds one strongly of Dehaene’s ‘global network theory’, described previously; and unsurprisingly, Dennett himself refers to this model (Dennett 2001). Together with psychologist Michael A. Cohen, Dennett also argues that any scientific theory of consciousness should focus on the explanation of cognitive *functions* and conscious *access*, but not on phenomenological experience (Cohen & Dennett 2011).

In fact, Dennett has expressed a rather radical view in relation to the question of qualia or the subjective conscious experience for what something ‘feels like’. Although he acknowledges the problems connected to qualia and subjectivity, he would rather stick to the functionality of such qualitative experiences. Instead he ‘solves’ the problem by denying the actual existence of qualia. He ironically compares qualia – defined as “...intrinsic properties of experiences considered in isolation from all their causes and effect, logically independent of all dispositional properties...” (Dennett 2001, p.233) – with the naïve idea of the ‘intrinsic value’ of American dollars, of dollars being ‘real’ money. Even in relation to subjectivity, to the first-person perspective, Dennett applies a similar approach; he simply states that “there is no such thing as first-person science, so if you want to have *science* of consciousness, it will have to be a third-person science of consciousness...” (Dennett 2001, p.230; italics in the original). Nevertheless, given the similarities between Dehaene’s and Dennett’s approaches, Dennett’s model could be regarded in the same sense as Dehaene’s research, for example, as supporting a reductive physicalist approach. But what about Dennett’s claims about qualia and consciousness? Consciousness is described as “fame in the brain” and qualia is just non-existent. In fact, it seems that even if it is granted that “fame in the brain” provides a *functionally* correct description of what happens in the brain, the conclusion that consciousness *is just* “fame in the brain” cannot be drawn. It seems to be the case, rather, that this conclusion is based on the presupposition that reductive physicalism is true. But given *that* presupposition, neither Dennett’s claims about qualia nor about consciousness are surprising.

Also, the two central concepts introduced by Dennett and frequently used in his theory, the *heterophenomenological* approach and the *intentional stance*, already suggest an eliminative and/or reductive approach to the question of consciousness. The former presupposes that it is possible from a third-person perspective to account for all first-person accounts of phenomena (Dennett 1991, pp.72–78), while the latter is defined by Dennett as “[...] the strategy of interpreting the behaviour of an entity [...] by treating it *as if* it

were a rational agent who governed its ‘choice’ of ‘action’ by a ‘consideration’ of its ‘beliefs’ and ‘desires’” (Dennett 2009, p.339). But given that the third-person perspective has priority, and given that assigning intentionality in general is an ‘as-if’ strategy, it is again indeed unsurprising that Dennett in his multiple draft model ends up – as described above – in rejecting the existence of qualia, for example.³⁸

In relation to German philosopher Thomas Metzinger, the question is whether a similar line of reasoning can be applied to his ‘self-model theory’. Metzinger attempts to develop a strictly physicalist theory, and consequently one of his background assumptions is some form of physicalism – possibly even scientism (Metzinger 2004, p.13). The starting point for Metzinger’s theory is his definition of mental representation, which like many more recent approaches, involves some form of self-reflexivity. The central part of his definition is, that a part X, representing a state in the world, is part of the system S as a whole, and can itself become a representandum of higher-order representational processes, which in turn can be involved in the control of actions. This *recursive* element becomes essential for the development of a *self-model*, and Metzinger modifies and extends the definition of mental representation to other related concepts such as phenomenal representation, mental simulation, mental and phenomenal presentation, mental and phenomenal self-simulation, mental self-presentation, or phenomenal self-presentation (Metzinger 2004, p.42,44,87,90,281,282,287,288). Another important feature in his self-model theory is the distinction between various constraints for turning a neural representation or self-model into a *phenomenal* representation or self-model. It is beyond the scope of this thesis to describe all the constraints, but Metzinger himself claims that transparency – our inability to access “the representational character of the contents of self-consciousness” – is the decisive constraint in defining the phenomenal self (Metzinger 2004, p.331). The above model of consciousness could obviously be regarded as representational and, given that he also assumes a form of supervenience, even as reductive (Metzinger 2004, p.529). Furthermore, in the light of Metzinger’s central thesis that “(n)obody ever *was* or *had* a self” (Metzinger 2004, p.13), it may even be regarded as eliminative.

Now, together the above definitions and constraints form Metzinger’s ‘toolkit’, which he uses to analyse a great variety of neurophenomenological case studies. Here he emphasises that his self-model theory must be testable, and that predictions made by his theory must be verifiable; and thus, obviously, the actual phenomenological cases are used as empirical evidence for his theory (Metzinger 2004, p.213,429). Consequently, he discusses a number of highly interesting and relevant cases that are divided into deviant phe-

³⁸ Baker’s analysis also concludes that Dennett’s attempt to eliminate the first-person perspective by applying a heterophenomenological approach and the intentional stance is not successful (Baker 2013, pp.74–80).

nomenal models of reality and deviant phenomenal models of the self. His main procedure is to present the phenomenon and then to explain it in terms of the above-mentioned toolkit. Especially interesting is the example of the phenomenon of ‘out of body experiences’ – henceforth denoted as ‘OBE’ – a phenomenon often discussed by Metzinger, and relevant to this discussion, since the phenomenology of these experiences at least seems to suggest a dualistic understanding of the mind. Metzinger suggests that, in the case of an OBE, *two* representations of the ‘body’ are constructed: one visual of the physical body, the other of the perceiving self. Usually, when a person is not experiencing an OBE, these representations overlap, and the physical body is regarded as the perceiving body. In the case of an OBE, the ‘system’ – the brain activity – assigns different locations to the different representations. Metzinger presents a detailed analysis of this highly interesting phenomenon³⁹ (Metzinger 2004, pp.489–505). He also points out that such OBEs can be *induced* by, for example, placing a head-mounted display in front of a subject’s eyes that is connected to a camera placed two yards behind the subject, who then experiences herself as ‘out of the body’. Another way to induce such experiences is to stimulate specific brain areas⁴⁰ (Metzinger 2014, pp.147–151).

Similarly to the case of Dennett’s model, the strength in Metzinger’s self-model theory, in being successfully applied in the analysis and explanation of many neurophenomenological case-studies, could be seen as supporting reductive physicalism, and thus strengthening its position in relation to dualism. Moreover, the explanation of OBEs in particular would at least suggest that a dualistic interpretation of these phenomena in most cases is wrong, and that OBEs generally should *not* be seen as evidence for dualism. The experience of being ‘out of the body’ can – at least in most cases – be successfully described and reduced to processes that are entirely situated in the brain. Of course, the possibility remains that there are cases in which Metzinger’s model may be unsuccessful. Nevertheless, the application of his model and his experimental findings in inducing OBE are highly plausible, giving support to his model and weakening the position of dualism.

Of course, one possible and presumably important question arises in relation to the above models – a question that also could be justifiably posed in relation to the scientific theories and models discussed in section 2.2.1. The question is: Are these models ultimately dependent on the reductive physicalist ontology presupposed by many of their authors? The above re-

³⁹ For example, he describes the experience of believing erroneously that we are moving while we are looking at a moving train from inside another train that is not moving as a rudimentary example of OBE (Metzinger 2004, p.490).

⁴⁰ The experiment has been developed in various directions. In one of them, the subject looks via the camera and the head-mounted display at a full-size doll. Both the doll and the subject are simultaneously scratched on the back. The subject then often experiences the doll as ‘her’ body (Metzinger 2014, pp.147–151).

mark by Schlicht in relation to functionalism seems to point in the direction that this need *not* be the case. In order to exemplify this question, it may suffice here to discuss one of these models – in this case, Metzinger’s. As stated above, Metzinger presupposes a reductive physicalist ontology. Further, given the explanatory strength of Metzinger’s model suggested above, it seems that a reductive approach *is* supported. His approach successfully explains the neurophenomenological case-studies he discusses and, given the supervenience of the phenomenal content on brain functions presupposed by Metzinger, this would indeed support reductionism. In particular, if his model does indeed successfully eliminate the first-person perspective or reduce it to a third-person account, thus rendering the ‘self’ an illusion, then, I think, there would be strong reasons to accept his central claim and thesis of ‘the self being an illusion’, and thus also to regard his reductive approach as successful. But is this the case?

Several philosophers have argued that Metzinger *does not* successfully eliminate the first-person perspective.⁴¹ Lynne Rudder Baker (1944-2017) in particular has argued forcefully that Metzinger’s account is *not* successful in eliminating or reducing the self to a third-person account.⁴² Without going into the subtle details of her argument, one central idea is the following: Although Metzinger presents an analysis of the sentence, ‘I am certain that I exist’ in terms of his self-model, he – so argues Baker – still does not succeed in capturing the first-person perspective, since the analysis of the sentence is about ‘anybody’ and *not* about the *specific* ‘I’ to whom the above sentence would refer if asserted by a specific person. Thus Baker concludes that, even *if* neural correlates were discovered that correspond with the models and representations in Metzinger’s theory, thus providing necessary and sufficient *physical* conditions for the production of sentences like the one above, this still would not eliminate the actual, specific first-person view (Baker 2013, pp.91–92). The question, of course, is whether Baker’s reasoning is ultimately successful. But if, for the sake of argument, we accept that Baker’s argument holds, then support for reductive physicalism would be much weaker and, since reductive physicalism is apparently only presupposed by Metzinger, it would instead be possible to use an alternative ontol-

⁴¹ Apart from Lynne Rudder Baker, specifically mentioned in the text, many others have argued against Metzinger’s project. German theologian Lukas Ohly would be one example who, like Baker, argues that the first-person perspective is not in fact eliminated or reduced. Another example, focusing on Metzinger’s ‘phenomenological’ approach in comparison with other ‘more traditional’ continental philosophers working with phenomenology can be found in an article by philosopher Graham Harman (1968-) (Ohly 2011; Harman 2011).

⁴² Interestingly, Baker agrees on several points with Metzinger. She agrees, for example, that (1) self-consciousness is different from consciousness in non-human animals, (2) self-conscious beings can distinguish between first and third person on a conceptual level, (3) logical argument is not decisive for the truth of empirical statements, (4) the “phenomenology of conscious experience should be taken seriously”, and (5) humans can conceive of themselves as a whole (Baker 2011, p.81).

ogy that does not claim the reducibility of – in this case – self-consciousness. Baker herself obviously offers a non-reductive materialistic approach⁴³ (Baker 2013, 2011, 2009).

One interesting route for the search for an alternative ontology is indirectly suggested by the way in which Metzinger expresses himself. Firstly, it should be noted that the central definition of mental representations presented above allows for self-reflexivity. That in turn at least allows for the possibility of some form of emergence theory to be discussed in the next chapter. Furthermore, given that mental and phenomenal representations realised in humans are *ongoing* in time, the self-reflexive establishment of a self-model could be understood as a process in time. In fact, Metzinger himself emphasises that the phenomenal self is an ongoing dynamic process, using expressions such as “[...] the concrete wholeness of my own self [...] is characterized by a multitude of internal part-whole relationships. These relationships are dynamical relationships [...]” (Metzinger 2004, p.322), or “(o)n the functional level of description, a phenomenal self, again, is not a substance or an individual – be it physical or nonphysical – but an ongoing *process*: the process of self-modeling” (Metzinger 2004, pp.563–564). But such characterisations would – as shall be elaborated in the coming chapters – fit together well with the features of process metaphysics as suggested, for example, by Nicholas Rescher (1928-).⁴⁴ Thus, perhaps, Metzinger’s theory could be understood in terms of a process-philosophical approach. If this were possible, and if a deeper analysis of this possibility did not encounter insurmountable problems, then adopting a process ontology as an alternative ontology – given that it is or can be understood as neither reductive physicalist nor dualist – may have a number of advantages, one of them being that there would be much less tension between the ‘mental’ and the ‘physical’, or – using the words of Nicholas Rescher – that “mental and material operations can thus be seen as two modes of natural process at large, representing a difference in sort but not in kind” (Rescher 1996, p.114). This may not solve the problems of dualism or significantly weaken the strength of the arguments against dualism, but it would point to possible alternatives to both dualism and reductive physicalism.

⁴³ Recently Baker denoted her view as ‘near-naturalism’. In contrast with scientific naturalism, in ‘near-naturalism’ anything transcendent is ‘bracketed’; that is, ‘near-naturalism’ does not discuss questions concerning the supernatural; the first-person perspective is included as irreducible and in-eliminable; and finally, near-naturalism is understood as a form of practical realism that “[...] takes the world of medium sized objects – persons, animals and artifacts – to be basic entities, as genuine as electrons” (Baker 2013, p.208).

⁴⁴ Nicholas Rescher gives a general summary of some basic features of process philosophy without focusing on any particular philosopher. These are interactive relatedness, wholeness, self-development, innovation and novelty, unity of law, productive energy, fluidity, and agency, each having its counterpart in substance philosophy: discrete individuality, separateness, condition, uniformity of nature, unity of being, descriptive fixity, classificatory stability, and passivity (Rescher 1996, p.35).

Finally, it should be noted that Metzinger's conclusion that "the self is an illusion", whether or not reasonings like Baker's ultimately are successful, in fact could be seen as a counterargument to his approach. If his model, together with the metaphysical assumption of reductive physicalism, leads to this conclusion, then – given the commonsense experience that the self is *not* an illusion but, as the methodological approach in section 1.3.2 would suggest, rather should be taken as a fact – and applying *modus tollens*, either reductive physicalism, or the model, or both would be false. But of course Metzinger might be wrong in actually *concluding* that the self is an illusion; it might simply be his reading or interpretation of the results of his model.

In summary, it can be said that it is at least not clear whether models such as those Metzinger's and Dennett's actually *imply* the metaphysical claims made by their proponents. Certainly there is some supportive strength in the models for a reductive approach, since they provide adequate explanations for a number of phenomena. But it does not seem to be obvious, to say the least, that the strong assertions of 'the self being an illusion', 'consciousness being fame in the brain' or 'qualia being non-existent' can be concluded despite the admittedly strong explanatory power of their models. Furthermore, this points to deeper questions concerning the relation of models and theories in science and philosophy. Such questions, which have been and are discussed in, for example, the philosophy of science, are highly important and interesting, but go far beyond the scope of this thesis. The question rather seems to be whether models like Metzinger's or Dennett's could be successfully construed – as suggested in the above example of process philosophy – in other ontological frameworks, thus possibly leading to other *interpretations* of the results. However, before finally answering the central question in this chapter, 'why both reductive physicalism and dualism should be avoided', some problems in relation to the reductive approach will have to be discussed.

3.2.4. Problems related to reductive physicalism

Apart from the impossibility of deducing the *truth* of reductive physicalism from the success of natural science, it is possible to find arguments against reductive physicalism, some of them directly connected to the mind/body problem. If reductive physicalism were true, it should be possible to reduce mental properties, qualia, consciousness, self-conscious, the experience of free actions, and so on to neural events and ultimately to physical events. John Searle, defending a form of non-reductive physicalism, sees the importance of accounting for the subjective experience of human beings. "Every conscious state has a certain qualitative feel to it" (Searle 2000, p.560).

Without a conscious subject, who would experience mental states?⁴⁵ It is this ‘first-person ontology’ or ‘first-person perspective’ that Searle – in spite of being a physicalist – does not want to give up; and it is these first-person experiences of mental states, consciousness, of being free that are so hard to explain from the third-person perspective of natural-science. For in which way do neuroscientific results answer the questions *what it is like* to feel joy, to experience the quality of beautiful music, to be conscious, to feel free, and so on? This subjectivity and qualitiveness is closely related to what David Chalmers calls the “hard problem of consciousness”. Referring to Thomas Nagel’s famous article, “What is it like to be a bat?”, Chalmers describes this problem as follows: “The really hard problem of consciousness is the problem of experience. When we think and perceive, there is a whirl of information-processing, but there is also a subjective aspect. As Nagel (1974) has put it, there is something it is like to be a conscious organism. This subjective aspect is experience” (Chalmers 1995, p.201). The connection between Searle’s understanding of qualitiveness and subjectivity on the one hand, and Chalmers’ understanding of experience on the other, is fairly obvious.

Interestingly – and perhaps consequently – many arguments in the mind/body debate directed against reductive physicalism, and sometimes directly in defence of dualism, are often based on one of three important features – consciousness subjectivity, qualitiveness, or the unity of consciousness – or on a combination of them. Loosely speaking, in some form they involve the hard problem of consciousness. In the following discussion, a number of more important and presumably more forceful arguments will be considered. Once more, it should be noted that it is not possible to account fully for the arguments against reductive physicalism. Rather, an overview of important lines of reasoning will be given.

One of the better-known arguments that is often discussed and analysed in philosophy is the ‘zombie argument’ or the ‘conceivability argument’. A zombie is a system or being that, in all physical aspects, is identical to a conscious being, but does not have consciousness.⁴⁶ Based on this un-

⁴⁵ Usually experience is thought to be dependent on consciousness. The opposite is suggested by process philosopher Alfred North Whitehead. In *Process and Reality* he writes: “The principle that I am adopting is that consciousness presupposes experience, and not experience consciousness” (Whitehead 1978, p.53).

⁴⁶ Recently, Tononi, Masafumi Oizumi and Larissa Albantakis have further developed the IIT presented in section 2.2.1. Based on this development, one of their conclusions is that ‘zombies’ in a sense are possible. In other words, a complex system that, according to the IIT theory, would be regarded as conscious could be functionally equivalent to a less complex system, which according to the theory would *not* be regarded as conscious – that is, the input/output behaviour of these two systems would be the same (Tononi *et al.* 2014). This is presumably *not* exactly what Chalmers has in mind in the above ‘zombie’-argument. There a ‘zombie’ has even the same physical structure. But this conclusion would presumably affect how one should think about the results of a ‘Turing-test’. A Turing-test focuses on input/output behavior, and suggests that one should conclude that systems with the same input/output also have the same level of consciousness.

derstanding of a zombie, Chalmers gives a short and simple version of this argument:

- (1) It is conceivable that there be zombies.
- (2) If it is conceivable that there be zombies, it is metaphysically possible that there be zombies.
- (3) If it is metaphysically possible that there be zombies, then consciousness is non-physical.

(4) Consciousness is non-physical. (Chalmers 2001, p.6)

In other words, if it is conceivable that there is an exact physical copy of a human that lacks consciousness, then consciousness must be something 'more' than the physical; and thus materialism or physicalism must be false. Obviously, it is possible to question this argument on premises (1) and (2). Why should it be even logically possible that a physical being that in all respects is identical to a conscious being does not have consciousness; and in which way does conceivability entail metaphysical possibility? In an entirely reductive physicalist setting, it seems that it is *not* conceivable that there be zombies.⁴⁷ Is it not precisely an assumption of reductive physicalism that a conscious being is entirely physical, that therefore consciousness *must* arise from the physical; and thus a 'zombie' – being physically identical to its 'conscious' counterpart – also must be conscious?

Another closely related argument is the 'knowledge argument'. This argument is based on the following thought experiment: The scientist Mary

⁴⁷ Earlier Chalmers gave a more detailed account of 'conceivability'. First he straightforwardly defines that "[...] a statement is conceivable (or conceivably true) if it is true in some conceivable world." (Chalmers 1996, p.66) He then introduces a distinction between '1-conceivability' and '2-conceivability'. These forms of conceivability are based on *primary* and *secondary* intension respectively. (Chalmers 1996, p.67) Primary and secondary intension are here described as functions from possible worlds to referents. They can be understood as follows: The former "[...] picks out what the referent of the concept would be if that world turned out to be actual." The latter is "[...] the dependence by which reference in *counterfactual* worlds is determined, given that reference in the actual world is already fixed." (Chalmers 1996, pp.56–57) Thus, so Chalmers, the classical example of 'Water is XYZ' is 1-conceivable but not 2-conceivable since if evaluated in terms of primary intension one looks at whether 'Water is XYZ' if such a world turned out to be actual whereas if evaluated in terms of secondary intension one looks at what water turns out to be in the actual world and relates this to counterfactual worlds. (Chalmers 1996, p.57,67) Further down in his essay, Chalmers relates these concepts to the Zombie argument admitting that he has not shown the possibility of a zombie world if secondary intension is involved. (Chalmers 1996, p.132) Indeed, it seems that the statement in the main text that it is not conceivable that there be zombies in a reductive physicalist setting relies on 2-conceivability. 'Presupposing' reductive physicalism would in this case amount to assuming that reductive physicalism is true in the actual world.

knows all physical facts about colours, but has been brought up and lives in a black and white world. Thus, for example, she lacks the experience of the colour red. But then her knowledge of all physical facts cannot be complete, since she does not know ‘what it is like’ to see red. Chalmers summarises this argument in a formalised and more generalised version:

- (1) Mary knows all physical facts.
- (2) Mary does not know all the facts.
- (3) The physical facts do exhaust all facts.

[...]

- (1) There are truths about consciousness that are not deducible from physical truths.
- (2) If there are truths about consciousness that are not deducible from physical truths, then materialism is false.
- (3) Materialism is false. (Chalmers 2001, p.7)

Again it is certainly possible to find counter-arguments. It seems possible to deny that Mary gains ‘new’ knowledge after leaving the black and white room. Does she not simply gain an ability – or perhaps she just learns to perceive ‘red’ in a new way – but in which case she would actually not gain any new ‘phenomenal’ truth (Chalmers 2001, pp.9–14)? Further, premise (1) in the generalised argument seems to be deduced from ‘Mary knowing all physical facts about colours but not knowing what red is like’. Here Dennett emphasises that it actually is not clear what ‘all physical facts’ means. He asks whether it would not be possible to imagine *all* physical facts as even including the knowledge of the physical fact of the underlying processes of experiencing red (Dennett 1991, pp.398–401). At the very least, the argument, although convincing at first glance, seems to be problematic and questionable in various ways.⁴⁸

⁴⁸ Another argument, some of whose central ideas strongly remind one of the two previous arguments in the main text, was proposed and defended by Gregg Rosenberg. His starting-point is the cellular automaton known as *Life* or *Conway’s Game of Life*, created and implemented by John Horton Conway in the early 1970s. This argument is especially interesting, since running *Life* on a computer results in highly complex patterns that also involve self-replication. Thus the results of *Life* may suggest, that it is possible to generate even other highly complex phenomena such as consciousness merely on the basis of very simple physical rules. Yet Rosenberg argues in the *opposite* direction: “1. Facts about a pure *Life* world do not entail facts about phenomenal consciousness (either a priori or a posteriori) 2. If facts about a pure *Life* world do not entail facts about phenomenal consciousness, then facts about a pure physical world do not entail facts about phenomenal consciousness. 3. Therefore, facts about a pure physical world do not entail facts about phenomenal consciousness” (Rosenberg 2004, p.18). The German philosopher and Jesuit Godehard Brüntrup comments on this argument, suggesting that it might be preferable to the ‘zombie argument’ since it does not involve

In any case, Chalmers uses these arguments as a starting point for an analysis of different types of materialism, dualism, and monism: type A, B and C materialism, type D and E dualism, and type F monism. He subsequently argues that type D dualism, type E dualism, and type F monism, which correspond with interactionism, epiphenomenalism, and panprotopsy-
chism respectively, are the most promising options for a non-reductive approach (Chalmers 2001). Earlier, Chalmers provided a more detailed analysis of these arguments in his ‘classic’ book *The Conscious Mind*, arguing more in the direction of a weaker form of dualism (Chalmers 1996). But more recently he developed a dialectical argument with a causal argument for materialism as the thesis, and the conceivability argument for dualism as the antithesis, arriving at the conclusion that both panpsychism and panprotopsy-
chism should at least be regarded as serious options (Chalmers 2017)⁴⁹.

In any case, the arguments presented above are based on similar ideas and, in a simplified form, conclude from our inability to understand how experience or consciousness and/or their qualitiveness arises from the physical – that is, from an epistemic inability – that there is an ontological gap between the physical and mental, that thus physicalism – or as Chalmers prefers to write, ‘materialism’ – is false (Chalmers 2001, pp.8–9). The following summarised argument by Alvin Plantinga could also be read as applying a similar intuition: (1) Elementary particles cannot think. (2) Atoms, molecules, cells composed of molecules are in turn made up of such particles which cannot think. (3) Therefore nothing composed of such particles, including the brain, can think. (4) Consequently something else – something non-material – must do the thinking (Plantinga 2007, pp.102–105). Again, steps (1) to (3) involve our inability to understand how experience or consciousness arises from the physical. In this case, Plantinga in a sense assumes this. Step (3) especially does not take into account the possibility that thinking, mental activity in some form, may arise as a result of how matter is structured – a possibility that a reductive physicalist would most probably consider.

Galen Strawson does not directly argue against physicalism; instead his starting point is what he defines as ‘real physicalism’, the thesis that “[...] experience is a real concrete phenomenon and every real concrete phenomenon is physical” (Strawson 2006b, p.12). This obviously stands in contrast to what – according to Strawson – many ‘physicalists and materialists’ in the usual sense seem to be committed to – namely, that “[...] physical stuff is, in

‘possible worlds’ (Brüntrup 2011, pp.39–42). Nevertheless, the fact that *Life* can also be used to generate high-level complex phenomena such as a perfect Turing machine, I suggest, renders the above argument a *weak* argument.

⁴⁹ Chalmers refers to his argument as ‘the Hegelian argument for panpsychism’ (Chalmers 2017, p.20). The approach used in this thesis is similar to Chalmers’ approach, but results, as shall become clear, in the suggestion mainly of two lines for further investigation, namely emergence theories and panpsychism, possibly in a process-metaphysical setting.

itself, in its fundamental nature, something wholly and utterly non-experiential” (Strawson 2006b, p.11). It should be emphasised that ‘real physicalism’ is not the same as the position that is denoted here as reductive physicalism. Nevertheless, it seems clear that by contrasting the two positions stated above, Strawson points out the same tension between the experiential and the non-experiential as used in the arguments above. In fact, he deems it correct “[...] that you can’t get experiential phenomena from P phenomena, i.e. shape-size-mass-charge-etc. phenomena [...]” (Strawson 2006b, p.24). Obviously, if Strawson’s reasoning holds, then reductive physicalism in the sense given here would almost certainly be false. Strawson discusses emergence and micropsychism, leading to panpsychism, as alternatives. The former, he argues (and as shall be accounted for in section 4.1.2), is, according to him, not a viable alternative (Strawson 2006b, pp.12–21). Instead, he finally arrives at the conclusion that physicalism understood in his sense entails panexperientialism or panpsychism (Strawson 2006b, p.25).⁵⁰

Richard Swinburne arrives at the conclusion that no mental events supervene on physical events, and finally that dualism is the most reasonable position. In his case he defines ‘mental’ and ‘physical’ in a manner that allows him to formulate an argument leading to the above conclusion (Swinburne 2013, pp.4–39, 67–71). In this context the details of his reasoning – although interesting – need not be the main focus. It may suffice here to point out that his arguments, and the definitions presupposed, are based on the same intuition as the other arguments already presented – namely, that one cannot arrive at the mental from the physical.

So the inability to understand how consciousness arises from the physical seems to be the main intuition in all of the above arguments; but it is also – perhaps unsurprisingly – one possible criticism offered by other philosophers who defend a stricter reductive physicalism. Dennett suggests that philosophers supporting arguments such as the ‘zombie argument’ or the ‘knowledge argument’ may have understood them incorrectly. He calls this the “philosopher’s syndrome” or “mistaking a failure in imagination for an insight into necessity” (Dennett 1991, p.401). Metzinger explicitly highlights the importance of not becoming a victim of Dennett’s ‘philosopher’s syndrome’ (Metzinger 2004, p.213).

It should be noted that there are obviously other arguments that highlight problems within reductive physicalism, such as those based on ‘invert-

⁵⁰ In ‘Mental Reality’ (1994), Strawson already discusses panpsychism and suggests that this position should be taken seriously (Strawson 2010, pp.75–77; first published in 1994). He summarises the central points of his position at that time as follows: (a) Experiential realism should be accepted, (b) ‘intentional realism’ should be accepted, and (c) neobehaviorism should be rejected (Strawson 2010, pp.318–319; first published in 1994). Presumably, it is the first two points, together with the assumption of taking physicalism seriously, that later lead to the conclusion that “physicalism entails panpsychism”.

ed qualia'. Also, it is sometimes argued that intentionality⁵¹ poses a similar problem for reductive physicalism. But, given the limited scope of this chapter, such problems will not be elaborated. In relation to intentionality, I will instead follow Chalmers' suggestion that "(i)t is plausible, however, that any failure of intentional properties to supervene logically is derivative on the nonsupervenience of consciousness" (Chalmers 1996, p.82).

Nevertheless, whether or not the critics of some of the above arguments are in fact right, in summary it could be said that the arguments against reductive physicalism presented and suggested in this section capture and highlight an important problem. Chalmers calls it the 'hard problem of consciousness'; others such as Searle call it the 'first-person perspective', Strawson uses the concept of experience; Swinburne captures the intuition that there may be a gap between the mental and the physical in his definitions; and so on. All of them point to important and possibly major weaknesses in reductive physicalism, towards a presumed inability of the reductive approach to account for 'what it is like to be conscious'.

It has also become clear that, based on some of the research done by the philosophers mentioned above, there may be promising alternatives to dualism and reductive physicalism. Obviously, some form of non-reductive physicalist approach would be possible. Typically, such positions would nevertheless have to bridge the gap between the mental and the physical by using concepts such as emergence. Strawson's and Chalmers' reasoning strongly point in the direction of some form of panpsychism, panexperientialism, or panprotopsychism. Having said this, it is now time to summarise the discussion, together with some suggestions and conclusions about the work to be done in the coming chapters.

3.3. Summary and conclusions

It has become clear that the strength of dualism lies in its ability to integrate theistic concepts and to capture the intuition that there is a difference between the mental and the physical, the experiential and the non-experiential. It has also become clear that reductive physicalism is strongly supported by the empirical results from natural science and its undeniable success and progress. Further, understood as a monistic approach, it also has the advantage of regarding the world as a whole. A major weakness of dualism is its inability to explain the connection between the realm of the mental, the spiritual, the soul-related, or simply the non-material, and the physical; but the difficulties of explaining the mental merely in terms of the physical have

⁵¹ Searle defines intentionality as follows: "'Intentionality' is a technical term used by philosophers to refer to that capacity of the mind by which mental states refer to, or are about, or are of objects and states of affairs in the world other than themselves" (Searle 2004, p.19).

also become clear. Especially with the question of free will in mind, the former weakness leads to questions concerning mental causation and causality in general, and also points in the direction of approaches that establish a connection between the physical and the mental, such as in emergence theories.⁵² The weakness of reductive physicalism in accounting for how the mental can possibly arise from the physical, how the ‘hard problem of consciousness’ can or cannot be solved, is used in several arguments against reductive physicalism. Clearly, although they all are questionable (as briefly suggested), the arguments discussed above have their strengths, and point to the limitations of both dualism and reductive physicalism.⁵³ Furthermore, it seems at least questionable whether conclusions about dualism and/or reductive physicalism can be made on the basis of models about consciousness and their descriptive and explanatory power. Dualism could claim that the mental, souls, or anything that is not material exists independently of matter; but there are no further explanations of *how* causal interaction between matter and the mental or anything non-material takes place. Reductive physicalism can – with the help of the empirical results from neuroscience, and partly with the help of models like those introduced above – say quite a lot about the underlying processes, but cannot answer the question of *what it is like* to be conscious or to feel; it lacks the first-person experience of subjectivity and qualitativeness; it does not solve the hard problem. Of course, a researcher could be happy with the explanations of neuroscience or with the idea that the mental, the spiritual – with everything that may be connected with it – simply belongs to ‘another world – the non-physical’; but both paths seem to me to be unsatisfactory. Would it not be desirable to understand the whole world, or at least as much of it as possible, and in principle? Given that there does not seem to be a fully satisfactorily answer within dualism to the problem of interaction and the problems concerning causality related to interaction, accepting dualism – although logically fully possible – does not seem to be particularly satisfying. But given that questions of subjectivity, qualitativeness, and the like are not actually answered by reductive

⁵² It is important to note that it is possible to argue against dualism on totally different grounds. Feminist theologians, for example, frequently argue that dualism is ‘hierarchical’, that it supports male structures, separating the spirit from the body, in which the former was related to masculinity and regarded as ‘higher’, whereas the latter was associated with the female and seen as ‘lower’ (McFague 1993, pp.15–16, 35).

⁵³ The conclusion that both dualism and reductive physicalism are too extreme is not uncommon. Thomas Nagel comes to a similar conclusion. In his book *Mind and Cosmos*, he argues both that biology is not (or at least not yet) able to explain the origin of life, and that psychophysical reductionism fails. He emphasises that the reductionist attempts to explain the mind and to reduce mental phenomena to the physical on the one hand are often regarded as “not rich enough” (Nagel 2012, p.14), but that on the other hand there is a lack of alternatives to the explanations based on reductive physicalism (Nagel 2012, p.15). Of course, many of the philosophers who defend emergentism, process philosophy, or some other alternative position to be mentioned further down have also concluded that both dualism and reductive physicalism should be avoided.

physicalism, accepting this position with regard to the mind/body problem would seem to be equally unsatisfying.

This situation of having a thesis and an antithesis is commonly resolved by attempting to find a synthesis. In other words, if two positions appear to be to 'extreme' and unable to explain certain essential parts of the world, then why not avoid them and search for a different solution? Yet this 'different solution' should somehow try to assimilate the strengths of the extremes if it is a genuine synthesis. In this case, this would be the strengths of both dualism and reductive physicalism stated above. Thus it is reasonable to search for a position that incorporates these strengths: the ability of dualism to handle many theistic concepts and to account for the intuitive qualitative difference between the mental and the physical (a difference that may not necessarily be ontological); and the monistic approach of reductive physicalism with its close connection to natural-science. This position should also avoid the weaknesses of dualism and reductive physicalism: the inability of dualism to account for the interaction of the mental, the soul, or the mind with the physical; and the inability of reductive physicalism to give a satisfactory explanation of the mental properties, especially consciousness, self-consciousness, and free will. So the question is where it is possible to find positions that are fully compatible with theistic concepts and with the results of the natural sciences in general and specifically neuroscience, and that use a monistic or at least non-dualistic approach? Apparently, other researchers have worked in this direction; and in the discussion of the above arguments for and against dualism and reductive physicalism, some possible paths have already been suggested. One points, loosely speaking, in the direction of non-reductive physicalist approaches that involve some form of emergence theory. Although none of the above-mentioned philosophers directly defends or argues for emergence theories, it seems, firstly, that non-reductive approaches need somehow to explain how the mental emerges from the physical. Also, the idea of the mental somehow emerging from the physical on the one hand is close to a scientific understanding of mind, and on the other hand attempts to avoid the problems the above positions run into. The degree to which this approach is successful, and which kind of problems it may face, will be the focus of the next chapter. Another path points in the direction of panpsychism; and yet another points to process philosophy, possibly in combination with each other. Thus the next step will be to take a closer look at some of the suggested alternatives, such as emergence theories, panpsychism, process-philosophy, or a combination of them, and to argue which will be most plausible.

4. Alternative positions between dualism and naturalism

In the previous chapter we saw that both dualism and reductive physicalism face problems, thus motivating the search for alternative positions. Some possible lines of investigation for synthesis were suggested at the end of the previous chapter, one of them being emergence. Other interesting and promising directions in which it may be possible to search for an alternative position are process philosophy and panpsychism. Obviously, ideas and conceptions from these possible fields of research could be combined if the analysis that follows suggests that to be reasonable, fruitful, or possibly even logically required. It would also certainly be possible explicitly to consider other non-reductive approaches or even other weaker forms of dualism. With regard to the latter, it has already been stated in section 1.3.2 that, for example, property dualism will not be discussed. Other non-reductive physicalist approaches often explicitly use some form of emergence, or at least some account of how the physical constitutes the mental in order to capture how the physical and mental are related. I suggest, therefore, that it is reasonable mainly to consider emergence in general, since many of its benefits and problems presumably have parallels in other non-reductive approaches. To begin with, in section 4.1 emergence theory and some central issues connected to it will be analysed and discussed. In section 4.2.1 some basic features of process thought and ideas from panpsychism will be presented and introduced. Section 4.2.2 discusses the advantages of and problems with these two positions. In the concluding section 4.3, results from the previous sections will be summarised and discussed, providing a plausible alternative philosophical framework to those of reductive physicalism and dualism that takes into account the challenges of scientific research and is compatible with its findings.

4.1. Emergence theory

The concept of ‘emergence’ has been around for some time. More recently, theories of emergence have been formulated and defended by a number of

contemporary philosophers.⁵⁴ Furthermore, emergence – as shall become clear – is not a concept restricted to philosophy, but may even be fruitful in a purely scientific approach. Since one of the questions discussed here is whether and how it may be possible to reconcile natural science – and especially neuroscience – with the ‘theistic worldview’ described in section 1.4., it seems appropriate to use the results of philosophers, researchers within the natural sciences, and/or philosophers of religion who have made attempts in this direction. Philip Clayton is a well-known theologian who has repeatedly argued for the fruitfulness of the concept of emergence in relation to the mind/body question; Arthur Peacocke is another. Neuro-anthropologist Terrence William Deacon (1950-) applies the concept of emergence to the mind in a non-theological approach. His approach is of interest here, since he attempts to avoid some of the ‘standard’ problems associated with the concept of emergence, and since he seems to develop his account independently of specific ontological presuppositions. Obviously results and ideas defended by other philosophers, preferably with a connection to neuroscience, will be considered. But before discussing the possible advantages and problems related to understandings of emergence, a more detailed description of some basic features of emergence has to be given.

4.1.1. Basic features of emergence

The main intuition behind emergence seems to be the following: The constituting parts of a system – for example, particles – interact in greater aggregates to form a complex system that exhibits higher complexity and novel properties, which at least in some sense are both unpredictable from and irreducible to the constituents of the system.

This intuition is captured in Clayton’s description, which involves the following four features: (1) ontological physicalism, (2) property emergence, (3) the irreducibility of the emergence, and (4) downward causation (Clayton 2004, p.4). The first feature, ontological physicalism, is an attempt to account for the rejection of dualism as discussed and suggested, for example, in the previous chapter. Clayton considers this feature “[...] poorly formulated” (Clayton 2004, p.4) and suggests ‘ontological monism’ as a preferable and more accurate formulation. Clayton’s consideration seems reasonable, since the expression ‘physicalism’ easily can be associated with ‘reductive physicalism’ which may suggest that emergence is not an alternative at all to either dualism or reductive physicalism. Having this focus on monism in

⁵⁴ The history of emergence can be traced back as far as ancient Greece. For example, Aristotle’s principle of *entelechy* could be interpreted as a form of emergence. Even Hegel’s philosophy, with its focus on history and becoming, could in some sense be understood as a form of emergence. Apart from the contemporary philosophers mentioned in the text C.D. Broad, C.L. Morgan, and Samuel Alexander are examples of philosophers who have more recently defended different forms of emergence theory.

mind, it may even be appropriate to describe this feature as ‘ontological *neutral* monism’ – neutral with respect to whether or not matter is the basis of all phenomena.

The next two features in Clayton’s account capture more explicitly the ‘main intuition’ described above. Clayton writes: (2) “When aggregates of material particles attain an appropriate level of organizational complexity, genuinely novel properties emerge in these complex systems”, and that (3) “(e)mergent properties are irreducible to, and unpredictable from, the lower-level phenomena from which they emerge” (Clayton 2004, p.4). The former feature is clearly based on empirical evidence, and as we shall see later in the presentation of Deacon’s understanding of emergence, many examples can be given for this feature. The central part of this description is that emergence occurs at certain levels of complexity, and that these properties are *novel*. At this stage Clayton does not describe or define what is meant by ‘novel’ but, in a commonsense understanding, novelty could be understood in this context as ‘unexpected’ or ‘not-explainable by the parts’. The *irreducibility* in the third feature accounts for the existence of the emergent properties. It should be noted that there seems to be a connection with the second feature in the relationship of the novelty described by the second feature and with the irreducibility and unpredictability in the third. Genuine novelty seems to be contradicted by reducibility; and although it is not clear whether novelty follows from the unpredictability of a property, a novel property in some sense is certainly unpredictable.⁵⁵ Furthermore, if it were possible to reduce emergent properties to phenomena on a lower level, then they could be regarded as being merely a more complicated expression of lower-level phenomena. Of course, we would still observe emergent properties; but they could be reduced and explained by phenomena on a lower level. ‘Emergent properties’ would then be, at best, another term for properties that are the result of – a possibly great number of – highly complex phenomena. But this would be exactly the claim of reductive physicalism: that *all* phenomena – at least in principle – can be reduced to and explained by lower-level phenomena. Ultimately reduction would end at the most basic level described by the basic laws of physics. Thus, in order to distinguish emergence from reductive physicalism, both the second and third features, and the ‘main intuition’, are necessary for emergence (Clayton 2004, pp.4–7).

The fourth feature of emergence, downward causation, says that “(h)igher-level entities causally affect their lower-level constituents” (Clayton 2004, p.4). Many philosophers defending emergence think that this feature is a central and highly important part of the concept of emergence, but –

⁵⁵ It is certainly true that unpredictability does not imply novelty in general. For example, the time of decay of a single radioactive atom is unpredictable, but the event as such is not novel or unexpected. The question is whether this holds for properties. Is an unpredictable property necessarily novel?

as we shall see – it is also a weak point of many accounts of emergence.⁵⁶ Nevertheless, the central idea of downward causation is simple: the emergent property on a higher level can exert causal power on the lower levels by itself, not only by means of its lower-level constituents. The importance of this feature can be seen by the following reasoning. If the proposed downward causation could be fully described by the causal influences of the constituting lower-level parts, then it would be causally reducible to these lower-level parts. Furthermore, if the emergent property had no causal efficacy of its own, then it could be regarded as epiphenomenal. This short reasoning already suggests some of the problems faced by emergence, and also why the concept of downward causation is so important in the debate about emergence. Downward causation for mental properties also appears to be of great importance for the existence of free will. For how could free will in the sense defined in section 1.3.2 exist if mental properties understood as emergent properties cannot have a causal influence of their own? Is the possibility of downward causation not a necessary condition for agents to have causal influence, and thus even for free will? So the question of downward causation, or some form of mental causation, is of great importance not only for emergence and the philosophy of mind, but also for a discussion of free will. Therefore downward causation and some arguments related to it will be analysed and discussed separately in subsection 4.1.2. The concept of downward causation is also involved in another important and common distinction within emergence: the distinction between *weak* and *strong* emergence. But before providing a more detailed description of these two forms of emergence, another account of emergence shall be presented in greater detail since it both stands in some contrast to Clayton's account and – as shall become clear – attempts to avoid some of the standard problems related to emergence.

Terence W. Deacon's understanding of emergence focuses more strongly on what in Clayton's terminology would presumably be covered by the second and third features. He describes very simply what he understands as emergent:

Such major transitions in the organization of things are often described as *emergent*, because they have the appearance of spontaneous novelty, as though they are poking their noses into our world from out of a cave of non-existence. And while they are not exactly something coming from nothing, they have the quality of unprecedented discontinuity about them – an almost magical aspect, like a rabbit pulled from an apparently empty hat. (Deacon 2012, p.144)

⁵⁶ Interestingly, both Clayton and Deacon suggest that downward causation could, or even should, be formulated in terms of the ancient Aristotelian concept of formal cause (Clayton 2004, p.6; Deacon 2012, p.161).

This simple description captures essentially the same main intuition stated at the beginning of this section. To expand on it: Deacon bases his understanding on *three* different orders of emergence. He identifies higher-order thermo-dynamic phenomena as emergent phenomena of the *first-order*. Common examples are the properties of liquids such as surface tension, viscosity, and other properties specific to liquids that can be explained by statistical dynamics and/or quantum theory. The *second-order* emergence is characteristic of self-organising systems. Deacon points to the formation of Bénard cells in heated liquid as a classical example; snow crystal growth would be another. These processes have in common that a macro-state reciprocally influences the underlying micro-states, which Deacon calls *morphodynamic* processes. The *third-order* of emergence can be seen in living organisms; and, in addition to the first- and second-order processes, these third-order processes involve information and memory – that is, the reciprocal process is spread out over time. Another self-organising level – organising processes of the second-order – is added. Since components of organisms such as the haemoglobin molecule have evolved towards a specific function or goal, Deacon calls this class of processes *teleodynamic*.⁵⁷ He emphasises, for example, that what a molecule such as the haemoglobin molecule *is*, is determined by its evolutionary history, involving many recurrent, self-organising processes. Evolution has cancelled all other possible arrangements of atoms, and haemoglobin is what is left. In a way it is best understood by what *it is not* (Deacon 2006, pp.126–146; Deacon 2012, pp.207–287). All of the examples mentioned above are obviously also examples of emergent properties that are also possibly irreducible and unpredictable. Deacon’s description of emergent phenomena is especially interesting, since his different orders of emergence also could be used to categorise natural phenomena in general. Furthermore, by choosing this somewhat different approach, he also attempts to avoid the concept of downward causation (Deacon 2006, p.122; Deacon 2012, pp.231–232). One may get the general impression that Deacon’s description of emergence, based on these ‘three orders’, is not so strongly linked to particular metaphysical commitments or presuppositions.⁵⁸ Also, the examples and descriptions of emergent phenom-

⁵⁷ Interestingly, Deacon suggests, that the three orders of emergence suggested by him, could be loosely linked to Aristotelian causation as follows: efficient causation to thermodynamic processes, formal causation to morphodynamic processes, and final causation to teleodynamic processes (Deacon 2006, p.148).

⁵⁸ Together with Tyrone Cashman (1938-), a philosopher of science, Deacon has recently tentatively suggested that a ‘metaphysics of the incomplete’, capturing central ideas of Deacon’s emergence theory, should be developed. Indeed, they think that the approach in Deacon’s *Incomplete Nature* contrasts both with “[...] the currently dominant mechanistic metaphysics [...] and [...] with current alternative vitalist, pan-experientialist, theological, and process-metaphysics perspectives as well”, and thus “(t)his begs for a serious reconsideration of the metaphysical assumptions that are thereby challenged” (Deacon & Cashman 2016,

ena suggest the possible fruitfulness of the concept in relation to natural science.

It should be noted that the field of emergent properties of concern in this essay involving mind, consciousness, self-consciousness, and mental properties in general could all be taken as examples for property emergence or third-order emergence; but they should certainly not be taken as the *only* examples. There are many examples of property emergence in Clayton's description, such as the dynamics of fluids, and structures and patterns in plant and animal life. Rudimentary forms of self-awareness may well be categorised as third-order emergent phenomena in Deacon's understanding (Deacon 2012, pp.264–287). From these examples it becomes clear that, although emergence may be a useful concept in relation to the realm of the mental in general, it is by no means restricted to them. Emergent phenomena can be discovered practically anywhere in nature. Nevertheless, a legitimate question would be whether Deacon's 'three orders of emergence' describe emergent phenomena with sufficient accuracy. For example, would it not be necessary to distinguish between consciousness and self-consciousness? Deacon himself seems to regard the latter as a special, more advanced, and more complex case of the former, and both as a case of third-order emergence (Deacon 2012, pp.464–466, 474–476): "Thus it is inevitable that having a brain should also entail the generation of a form of teleodynamic relationship that is partly organized with respect to itself as environment. This higher-order form of teleodynamic causal circularity creates an entirely novel emergent realm of self-dynamics" (Deacon 2012, p.476).

Having introduced Deacon's account of emergence, it is time to turn to the important distinction between *weak* and *strong* emergence.⁵⁹ One way of formulating this distinction is again based on Clayton's description, and may serve as a starting-point for the subsequent discussion: "Strong emergentists maintain that evolution in the cosmos produces new, ontologically distinct levels, which are characterised by their own distinct laws or regularities and causal forces. By contrast, weak emergentists insist that, as new patterns emerge, the fundamental causal processes remain those of physics" (Clayton 2004, p.9). In this short description by Clayton, it already becomes clear wherein the crucial difference between these two concepts of emergence lies. Weak emergence accepts that new patterns or properties emerge, and thus at first glance is consistent with the first three features named

p.401). I myself believe that it was precisely one of the strengths in Deacon's approach that he was *not* heavily committed to specific metaphysical assumptions.

⁵⁹ There are obviously slight differences in how emergence, and thus 'strong' and 'weak' emergence, are understood. For example, in *Das Leib-Seele-Problem*, Brüntrup defines emergence in terms of microdeterminism and irreducibility (Brüntrup 2016, pp.70–71); or in her thesis about panpsychism and the combination problem, Hedda Hassel Mørch focuses on the unpredictability in principle, the 'bruteness' and the epistemic gap in her account of *strong* emergence (Hassel Mørch 2014, p.40,48,143).

above, but would not include the fourth feature. It still claims some form of monism: the emergent properties are assumed to be the novel properties, which seem to be unpredictable and perhaps even irreducible. It is the fourth feature that poses a problem for weak emergence: if “[...] the fundamental causal processes remain those of physics” (Clayton 2004, p.9), then how could downward causation be possible, how could higher-level states genuinely affect lower-level states? Would the higher-level causal effects not be reducible to lower-level effects, at least in principle? And if they were in principle reducible to lower-level effects, in which way would weak emergence still be consistent with the third feature stated above? Still, defenders of weak emergence may claim that this reducibility is only in principle, that it is practically impossible and beyond reach, that the emergent properties are unpredictable, and that thus weak emergence nevertheless is at least a methodologically useful concept. It may be suspected that the approach of Deacon involving the distinction between thermodynamic, morphodynamic, and teleodynamic processes is not affected by the distinction between weak and strong emergence in the same way, since it does not focus on the origin of the causal forces involved. Nevertheless, Deacon is clearly aware of this distinction and of the problems connected with it (Deacon 2012, p.231). Ultimately, it may be the case that his approach also avoids the deep problems to be discussed in relation to downward causation. I will return to this interesting feature of Deacon’s approach later.

Chalmers gives an account, similar to Clayton’s, of weak and strong emergence, although he does not use the concept of reducibility. He writes: “We can say that a high-level phenomenon is *strongly emergent* with respect to a low-level domain when the high-level phenomenon arises (in some sense) from the low-level domain, but truths concerning that phenomenon are not *deducible* even in principle from the truths in the low-level domain” (Chalmers 2006, p.244). Later he discusses the importance of downward causation for the concepts of both strong and weak emergence, and suggests that the distinction between *strong* and *weak* – in correlation with the distinction of strong and weak emergence – should be extended to the concept of downward causation:

To be clear, one should distinguish *strong* downward causation from *weak* downward causation. With strong downward causation, the causal impact of a high-level phenomenon on low-level processes is not deducible even in principle from initial conditions and low-level laws. With weak downward causation, the causal impact of the high-level phenomenon is deducible in principle, but nevertheless unexpected. (Chalmers 2006, p.249)

Both Clayton’s and Chalmers’ understandings of strong and weak emergence suggest the following. In the case of weak emergence, it is in principle possible to reduce the emergent phenomena to phenomena at a

lower level. In the case of strong emergence, this reducibility is not even possible in principle. Due to this claim of reducibility in principle, weak emergence is sometimes referred to as *epistemological emergence*, whereas strong emergence – having stronger *ontological* claims about reducibility – is sometimes referred to as *ontological emergence* (Clayton 2004, p.10; Gregersen 2006, pp.282–286).

Summarising the above, weak emergence claims that the fundamental causal processes involved are those of physics, that the impossibility of causal reduction is only due to our lack of insight or knowledge, and that downward causation in principle can be deduced from the underlying lower-level phenomena. Strong emergence, in contrast, claims that the emergent levels are new levels with their own causal forces, and either that these causal forces cannot even in principle be reduced to lower-level causal forces, or that the emergent level in some sense is ontologically novel. In Deacon's account the first- and possibly even the second-order emergence described by him could be classified as examples of weak emergence. But it is not clear whether Deacon's third-order emergence involves strong downward causation in the sense described above, or merely weak downward causation, since it is apparently used to describe both consciousness and self-consciousness. Consequently, it is also not clear whether Deacon's account should be regarded as a case of either strong or weak emergence. Actually, I believe that Deacon attempts to find a middle solution as he writes:

I will argue that we can still understand the emergence of *novel* forms of causality without attributing it to the introduction of unprecedented physical laws. Indeed, I will argue that only to the extent that an unbroken chain of causal principles links such higher-order phenomena as consciousness to more basic physical processes will we have an adequate theory of emergence. (Deacon 2006, p.122; emphasis added)

Indeed, here Deacon appears to require causal reducibility, but not necessarily ontological reducibility. In any case, the significant difference between weak and strong emergence raises the question which of these concepts could be more useful in the light of the previous discussion of dualism, reductive naturalism, and the conclusions reached in the previous chapter, or whether perhaps a more neutral account such as Deacon's would be preferable.

It has already been hinted that weak emergence is in conflict with the fourth feature of emergence stated by Clayton, and is possibly even in conflict with the third. A closer look suggests the following: In weak emergence, causal reduction to lower-level phenomena is possible in principle, and the fundamental causes are physical. Thus any emergent phenomenon is – at least in principle – caused by lower-level phenomena and ultimately by phenomena within the realm of physics. Furthermore, if downward causation is

only possible in the weak sense described by Chalmers, this weak downward causation is ultimately caused by lower-level causes. Now, another claim of weak emergence is that, although this is possible in principle, it is not possible for us to *know* how the lower-level phenomena cause the higher-level phenomena or how the higher-level weak downward causation is caused by lower-level causes. But if it is not possible for humans to know these connections *now*, why should it not be possible to find these connections in the future? And if these connections were found, would weak emergence, already being a form of monism, not actually collapse into reductive physicalism? Even if it is granted that these connections remain unknown, reduction still would be possible *in principle*, and thus weak emergence would still *in principle* collapse into reductive physicalism.⁶⁰

In the case of strong emergence, downward causation is understood in Chalmers' stronger sense, and any causal influence by higher-level emergent phenomena cannot – even in principle – be reduced to lower-level causes. So strong emergence does not have to face the problems of weak emergence and the threat of collapsing into reductive physicalism; but it has to explain and argue for how downward causation in the stronger sense actually is possible. Strong emergence is also consistent with all the features stated by Clayton; and although Deacon – as previously cited – wishes to link “[...] higher-order phenomena as consciousness to more basic physical processes[...]” by “[...] an unbroken chain of causal principles” (Deacon 2006, p.122), the ‘three-order’ approach of Deacon does not make any assumptions as such about the causal efficacy of the emergent phenomena, and thus it should also be consistent with *either* understanding of emergence. Anyhow, given this understanding of weak and strong emergence, and given that dualism and reductive physicalism should be avoided, one may suspect that strong emergence is the kind of emergence worth investigating in relation to consciousness, self-consciousness, free will, and subsequently to a theistic worldview. But is it really the case that strong emergence can solve the problem of consciousness and at least allow for the possibility of free will? In order to answer this question, it is necessary to discuss some major objections to strong emergence and to downward causation as the central concept within strong emergence.

4.1.2. Possible problems with emergence and downward causation, and possible solutions

In this section, I shall first present an important and presumably forceful argument against downward causation, and thus also against emergence theories involving downward causation. Next, objections to the concept of

⁶⁰ This reasoning in the text about weak emergence has a parallel in Kim's reasoning that the position of non-reductive physicalism is unstable (Kim 1989, p.47).

strong emergence will be presented, based on the unpredictability and irreducibility in principle of emergent properties and the definition of emergence *via negativa*. Possible responses to these objections will be discussed, including a brief account of the responses of Murphy, Baker, and Peacocke. Finally, some reasons will be given to explain why causal closure could and possibly should be understood as a methodological principle.

To start with, it became clear in the previous section that the concept of downward causation is a highly important feature of strong emergence in particular. This feature of emergence is also very often subject to criticism, and thus may be regarded as its weakest point. At the same time, this feature is often also regarded as the most exciting part of strong emergence. Also, as has been stated earlier, emergence is often part of non-reductive physicalist approaches. Two examples with connections to the philosophy of religion would be the positions defended by Nancey Murphy and Lynne Rudder Baker (see, for example, Murphy 2006; Murphy 1998; Baker 2009). Even Searle's approach (mentioned in chapter 3), which he calls 'biological naturalism' in an attempt to avoid the terms 'materialism' or 'physicalism' (Searle 2004, p.79; Searle 2000, pp.566–567), would need some form of conceptual framework to describe how the mental is realised by the physical (Searle 2004, p.79). He explicitly discusses mental and/or downward causation as an important question within the philosophy of mind (Searle 2004, chap.7). Thus, given that defenders of non-reductive physicalism in general use and discuss the concept of downward or mental causation, the discussion given here may apply to both downward causation within emergence and other non-reductive approaches. In relation to research into consciousness related to the mind/body problem and free will, this concept may also be of importance.

Within neuroscientific research, Dehaene and Changeux describe how, whenever the neuronal global workspace (described in chapter 2, section 2.2.1) is activated, perceptions become conscious, correlating with processes of *top-down* amplification. In other words, brain systems of a higher order amplify and alter the activity in lower order systems. Conscious perceptions are also correlated with long-distance reverberation in the brain, the possibility of maintaining activation at will, and of reporting the conscious experience (Dehaene *et al.* 2006, pp.205–206). This reminds one of downward causation, discussed above. So a clear philosophical understanding of the concept of downward causation could even be useful to the work and research of neuroscience and related disciplines, and to the question about which philosophical framework(s) are compatible with the results from neuroscience.

In the preceding section, some simple definitions of downward causation were presented. Recall that in the case of strong downward causation, the causal power of a high-level or emergent phenomenon cannot be de-

duced from the laws or phenomena it is based upon. In the case of weak downward causation, such deduction is possible in principle or – more generally – downward causation can be understood as emergent phenomena or properties having a causal power of their own. The main objections concerning downward causation presented here are directed at the concept of *strong* downward causation; and henceforth, if not otherwise specified, the term ‘downward causation’ will be used synonymously with ‘*strong* downward causation’.⁶¹

4.1.2.1 Kim’s argument

One of the philosophers who has made a clear and strong case against downward causation in the above sense – and thus even against many non-reductive approaches to the mind/body problem – is Jaegwon Kim (1934-). As early as the 1980s he formulated arguments against non-reductive physicalism; and since then he has continued to question and criticise positions involving ‘strong’ downward causation in the sense given above and downward causation in general. Whether it would also count against top-down causation in, for example, the global workspace model would depend on whether or not the processes involved should be regarded as strongly emergent. The model itself leaves open which of the forms of emergence would be applicable. In any case, in the following a summary of a compressed but nevertheless clear version of what Kim usually calls ‘the supervenience argument’ and ‘the exclusion argument’ shall be given.⁶²

Unsurprisingly, the concept of supervenience plays an important role in Kim’s argument and in his philosophy of mind in general. Kim gives a simple definition of supervenience: “Whenever something has a mental property, M, at t, it does so in virtue of the fact that it has, at t, a physical base property, P, where P necessitates M (that is, necessarily anything that has P at t has M at t)” (Kim 2009, p.40). His argument is divided into two separate parts: the exclusion argument and the supervenience argument. In both, M and M* are thought to be supervenient on P and P* respectively. The first, the exclusion argument, can be summarised as follows: Presupposing the causal closure of the physical, if a mental property M causes a physical property P*, then the physical property P* by causal closure also has a sufficient physical cause P, which by assumption is not identical to M. Thus the physical property P* is overdetermined, and we have the choice either to say that *all* mental-to-physical causation is overdetermined, or to reject one of the causes. Rejecting the physical cause P contradicts the causal closure of

⁶¹ At this point it may be worth observing that it should be possible to argue that weak downward causation is not downward causation at all, but bottom-up causation in disguise.

⁶² Jaegwon Kim has discussed the issues concerning downward causation at several points in his career. More detailed analyses and versions of ‘the supervenience argument’ and ‘the exclusion argument’ can be found in, for example, *Physicalism or Something Near Enough, Supervenience and Mind*, or *Philosophy of Mind* (Kim 2005; Kim 2011; Kim 1993).

the physical, which is presupposed by Kim and which he defines as follows: “If a physical event has a cause at t , it has a sufficient physical cause at t ” (Kim 2009, p.38).⁶³ Therefore the mental cause M should be rejected. The second argument, the argument of supervenience, is roughly as follows: Suppose a mental property M is the cause of another mental property M^* . Given supervenience, there has to be a physical property P^* that serves as a supervenience base, which means that P^* is necessarily sufficient for M^* , no matter whether or not M had instantiated M^* . Therefore M must also cause the supervenience base P^* , and we have a case of the previous exclusion argument by which the mental cause M should be rejected. Together both arguments establish Kim’s claim that neither mental-to-physical causation nor mental-to-mental causation can be understood independently of the subvenient physical base, and thus the mental understood as supervenient would be epiphenomenal (Kim 2009, pp.39–41).

From this short description of Kim’s argument, it becomes clear that there are at least two major interrelated problems for emergence: (1) The physical property P^* is apparently overdetermined: it seems to be caused by both M and P . (2) The other problem is – as Kim points out – the causal closure of the physical; and since, according to causal closure, event P^* should have a *physical* cause, the mental cause becomes redundant, or could ultimately be reduced to the physical – as a reductive physicalist would propose. Consequently, Kim concludes in relation to emergence theory that an emergentist must choose either to “[...] provide sufficient and compelling reasons for rejecting the closure principle or else show that downward causal efficacy of irreducible emergent properties is consistent with physical closure” (Kim 2006, p.200).

The above problem is presumably the biggest within emergence theory; and precisely as Kim suggests, in its defence it may be possible either (a) to argue against the causal closure of the physical, or (b) to show how downward causation and emergence could be construed without violating the causal closure principle. But I deem that these are not the only possibilities. Furthermore, there are also other possibilities: (c) to show that the overdetermination in the argument above – that both M and P are possible causes for P^* – is unproblematic; (d) to redefine some of the concepts involved – for example, supervenience or causation itself. But there is, importantly, also (e): the possibility of revising some of the underlying metaphysical assump-

⁶³ In section 3.2.2, Lowe’s reasoning that the problem with mental causation arises in relation to the *stronger* presupposition that ‘no physical event has a non-physical cause’ was briefly discussed (Lowe 1999, pp.225–230). A similar situation seems to arise in the above case of Kim’s reasoning. The presupposition of ‘a physical event having a sufficient physical cause’ seems to ‘generate’ the problem of overdetermination. Lowe thinks that the presupposition given by Kim can be modified such that the problem of overdetermination can be avoided by placing the mental cause ‘in between’ the set of sufficient physical causes for a physical event (Lowe 1999, pp.229–230).

tions. Obviously it is possible to combine two or more of the aforementioned approaches.

4.1.2.2 Emergence *via negativa*

Another more general – nevertheless important – objection to the concept of emergence is that the irreducibility in emergence is a *negative* characterisation, whereas what would at least be preferable is a *positive* characterisation (Kim 2006, p.201). Kim’s observation about this problem certainly is correct – recall, for example, the features of emergence given by Clayton. One central theme – apart from downward causation, which has its own problems – was the *ir*-reducibility and *un*-predictability that describe emergence *via negativa*. A possible opponent could always argue that the irreducibility or unpredictability is due only to a lack of understanding and insight or an inability to find predictions or reductions. It simply may not – as yet – be able to predict or reduce the phenomena in question. It seems that it is possible to argue that strong emergence could at least turn out to be weak in the sense given above, unless it can somehow be successfully argued that strong emergence actually *is* the most reasonable position. But the description of strong emergence *via negativa* at best supports the conclusion that ‘we at present are not able to reduce or predict’ emergent phenomena. What would be needed in support of strong emergence is a strong metaphysical argument in favour of irreducibility and unpredictability *in principle*. Therefore emergence theorists should strive instead for a *positive* description that is based not on the inability to do something (which can always be argued to be temporary), but based on what can be observed or conceptualised, or on what it is possible to do.

4.1.2.3 Emergent properties as *facta bruta*

Godehard Brüntrup comments on emergence theory, which he regards as a possible alternative to reductive physicalism and dualism (Brüntrup 2011, p.27). In particular, he raises another problem for the concept of strong emergence. “Emergence in which entities of an entirely new kind suddenly appear is not really intelligible. Even a being with perfect cognitive abilities could not deduce these transitions from the basis. They must be accepted as *facta bruta*” (Brüntrup 2011, p.30; my translation).⁶⁴ Galen Strawson reasons about strong emergence in a similar way to Brüntrup. He questions whether emergence as a concept actually makes sense (Strawson 2006, p.12). Emergence, Strawson argues, “[...] can’t be brute” (Strawson 2006b, p.18), pointing out that emergent properties cannot be independent of the

⁶⁴ The original German text is as follows: “Eine Emergenz, bei der Entitäten einer ganz neuen Art plötzlich auftreten, ist nicht wirklich verstehbar. Selbst ein Wesen mit idealen kognitiven Fähigkeiten könnte diese Sprünge nicht aus der Basis ableiten. Sie müssen als *facta bruta* akzeptiert werden“ (Brüntrup 2011, p.30).

underlying properties. In my reading, both conclude from the irreducibility and unpredictability in principle that emergent properties in strong emergence must be regarded as brute facts. This would especially be the case in relation to mental phenomena. They would be of a new kind if they were not in some sense equated with the physical. But unintelligible emergent properties as brute facts are not an explanation of these properties at all. Just claiming that they ‘somehow’ emerged without the possibility of any prediction from or reduction to the properties they emerged from does not add anything new at the level of explanation. Yet, I believe, both Strawson and Brüntrup would accept emergence in the weaker form, which does not *in principle* exclude reducibility or predictability; but they would *not* accept the stronger form. The conclusion that strong emergence or emergence in which the emergent properties are *facta bruta* is unintelligible, and thus should be rejected, would be of importance for any account of consciousness involving some form of emergence. As shall be returned to later, apart from emergence theory, both Strawson and Brüntrup also suggest panpsychism as another possible alternative to reductive physicalism and dualism. But even in a panpsychist account, emergence of the above form would remain unintelligible. Still, it should also be noted and emphasised that, although Strawson and Brüntrup reject emergence and suggest instead a change in metaphysics, it is not clear whether the weak form of emergence or emergence as Deacon understands it actually has to be abandoned; both Brüntrup and Strawson mainly criticise and argue against *strong* emergence.

4.1.2.4 A brief discussion of responses to problems with emergence theories

In response to the supposedly strong objection to emergence offered by Kim, several paths of reasoning have been taken. Recall the possibilities stated at the end of section 4.1.2.1: (a) to argue against the causal closure of the physical; (b) to show how downward causation and emergence could be construed without violating the causal closure principle; (c) to show that the overdetermination in the argument is unproblematic; (d) to redefine some of the concepts involved; or (e) to revise some of the underlying metaphysical assumptions.

Possibilities (b), (c), and (d) are closely related to each other. Nancey Murphy (1951-) would be an example of a response that accords with (b) and (d). She takes the path of trying to show how downward causation could be made compatible with the causal closure principle by not defining supervenience in the same way as Kim does. Alternatively, she defines “Property S supervenes on property B if and only if *e*’s having B constitutes *e*’s having S under circumstance *c*” (Murphy 2006, p.231). In comparison with Kim’s definition, which says that “[...] P necessitates M (that is, necessarily anything that has P at t has M at t) [...]” (Kim 2009, p.40), Murphy’s definition of supervenience is conditional – namely, ‘under circumstance *c*’. This

would allow her to avoid that all mental properties can be reduced to their underlying base properties.

Lynne Rudder Baker's response can be understood as an example of possibilities (b), (c), and (d). Firstly, she has developed the concept of *property constitution*, thus avoiding the concept of supervenience. In her account of property constitution, the constituted property instance is not reducible to the constituting event, since it is only constituted under certain relevant circumstances (Baker 2013, pp.209–214). I will not discuss property constitution in further detail; but this approach certainly reminds one of Murphy's alternative definition of supervenience, since Baker, like Murphy, introduces further conditions for her *property constitution*. Further, she also briefly explains why an argument based on overdetermination, such as the one presented above, may not work. She refers to a similar argument by Kim, in which he seeks support by using the analogy of two assassins who both independently kill a victim at the same time, and arguing that it is not reasonable that events caused by mental causation are overdetermined in the same sense. In the case of mental versus physical causation, Kim suggests that the situation of possible overdetermination is unstable, and that we actually analyse the relation of the possible causes to each other. In fact, given the causal closure of physics, we should preferably choose the physical cause before the mental (Kim 2006, p.199; Kim 1998, pp.65–67). Baker agrees that this may be the most reasonable choice, given that the possible causes are *independent*; but in the case of mental causation – so Baker emphasises – this is not the case. The mental and physical events in mental downward causation are *not* independent, but metaphysically connected (Baker 2009, p.114),⁶⁵ which (as shall become clear) is also the case in panpsychism, and leads to her conclusion that events caused by mental causation are not overdetermined in the same sense as the two assassins above.

In both Murphy's and Baker's cases, I believe, a defender of Kim's position would argue that the modifications made to supervenience by Murphy or by Baker's property constitution still can be understood in terms of Kim's supervenience. This will not be explicated here, but it certainly is a possible counter-response.

Peacocke mainly follows the path of redefining causation, as in possibility (d). In *Theology for a Scientific Age*, Arthur Peacocke emphasises the importance of recognising the role of *top-down causation* (Peacocke 1993, p.54). Especially when coming to more complex systems, such as biological

⁶⁵ The dependency of emergent properties is sometimes used as an argument against them. On the basis of a fundamentalist ontology, Elisabeth Barnes suggests that there may be four different kinds of entities: fundamental and independent, fundamental and dependent, derivative and independent, and finally derivative and dependent. Examples would be mereological simples, emergent entities, necessarily existing abstracta (such as numbers), and complex objects, in that order (Barnes 2012, pp.882–886). The question, of course, is whether this approach can be successfully combined with concepts such as supervenience or causation.

systems, Peacocke argues that the common understanding of causality as a linear, temporal chain of events $A \rightarrow B \rightarrow C \rightarrow \dots$ is insufficient for an adequate understanding of the phenomena involved (Peacocke 1999, p.221). In the case of the relationship between the mental and the physical, linear causation, Peacocke argues, is simply insufficient. “A wider use of ‘causality’ and ‘causation’ is now needed, one that includes the kind of whole-part, higher-to-lower-level relationships that the sciences have themselves recently been discovering in complex systems, especially the biological and neurological ones” (Peacocke 2006, p.264). His suggestion, therefore, is that the concept of causation should be broadened. The basic idea in Peacocke’s alternative description of downward causation is that events at lower levels should be regarded as “[...] the result of the *joint* operations of both higher- and lower-level influences” (Peacocke 2006, p.269).

Interestingly, it is possible to find empirical support for Peacocke’s approach in neuroscientific research. As mentioned in chapter 2 section 2.2.1, one common model of consciousness is the global workspace model introduced by Bernard Baars and developed by, for example, Stanislas Dehaene and Philip Changeux. Another was the ‘integrated information theory’ of Tononi. Briefly recapitulating, this global workspace model of consciousness consists of the global workspace itself, attentional systems, evaluation systems, memory, perception, and the motor systems connected to it. In the event of an effortful task, groups of neurons will operate in a top-down manner on other populations of workspace neurons (Dehaene *et al.* 1998, pp.153–155). In addition, if we imagine the brain as an enormous network of neurons, then it is not difficult to realise that – at least in a global perspective – there are *no* neuronal states that are exactly alike previous states. The totality of neuronal states is in constant change. Nevertheless, similar states will occur and can be correlated with similar mental events and properties. So, although it is possible to correlate specific neural states with specific mental properties, these neural states will never be exactly the same. Furthermore, what becomes conscious is not only one single mental state, but a combination of several inputs and possible outputs that, in turn, are at least partly dependent on each other. The sound I hear in a concert will be dependent on both my mood and what my other senses are focused on – for example, the scene I see and the feelings I have about the sound will in turn be dependent on both; and so forth. Thus, even from the point of view of the physical neuronal reality, everything happening in our brain and in our mental life is somehow interconnected and interdependent. Likewise, interdependence and interconnectedness is also emphasised in Tononi’s account and model of neural processes in the brain briefly introduced in section 2.2.1. Although this does not entail a process view, this supports Peacocke’s view on causation; and it also emphasises that a change of metaphysics in the direction of a process or process-oriented view would be reasonable.

Gregg Rosenberg has also reasoned in a similar direction, likewise emphasising a novel approach to causality. He suggests that an understanding of causality in terms of constraint and ‘causal significance’ should be developed. The latter is defined as follows: “The *causal significance* of a thing is the constraint its existence adds to the space of possible ways the world could be” (Rosenberg 2004, chap.9; Rosenberg 2017, p.159). By shifting the focus to constraints in his approach to causality, he also captures the importance of the *causal nexus* in relation to the phenomenon of consciousness (Rosenberg 2004, pp.158–164). Interestingly, he has recently arrived at the conclusion that theories of consciousness such as Tononi’s ‘integrated information theory’ and Dehaene’s approach, based on Baars’ ‘global workspace model’, could be seen as part of a “synoptic understanding of consciousness” (Rosenberg 2017, pp.166–172).

Certainly, following Kim, one may argue that the above suggested joint-networked causation should again be – at least in principle – ultimately reducible to linear causation. Nevertheless, although neural correlates can be observed in real time with modern techniques, they cannot be isolated either from the rest of the neuronal activity in the brain or from the other mental states occurring simultaneously. Thus an understanding of causation in mental life would need to account for this kind of dependency or interconnectedness both in space and time. In isolated cases the linear model of causation may be sufficient. In simple cases, it may be easy to establish a ‘traditional’ causal connection between, for example, two or even several interacting neurons. But in the brain, each of the *billions* of neurons is connected, on average, to 1,000 other neurons, rendering – at least in practice – a complete causal description impossible.

Furthermore, taking into account the networked structure of the brain, the type of joint or networked causality Peacocke proposes is supported by Deacon’s account of third-order emergence introduced above, in which self-organising, recurrent processes not only connect macro-states to micro-states, but are also *spread out over time*. The causality involved in such third-order emergent phenomena is distributed over both time and space. Unsurprisingly, Peacocke finds Deacon’s description of emergent phenomena useful (Peacocke 2006, pp.263–264), and it seems that Deacon’s account of emergence is close to the understanding of causation suggested by Peacocke. As mentioned earlier, joint causation may well be understood as networked causation, and the interdependency and interconnectedness in a network of causes may obviously include recurrent, reciprocal, and self-organising processes that are distributed both across space and time – processes that are not easily described by a simple linear approach. Consequently, a shift to a more process-oriented metaphysics is at least a reasonable alternative.

In relation to Kim's argument, it would also be possible to argue against the causal closure principle (henceforth denoted as CCP). In *Mythos Determinismus*, Brigitte Falkenburg suggests a revision of the understanding of the causal closure principle, as suggested in (a) at the end of section 4.1.2.1. This approach would also be an example of changing the metaphysical assumptions, as in possibility (e). Falkenburg observes the historical role that the CCP has had in being used to fight superstition, to get rid of spirits, ghosts, and other immaterial beings in our descriptions of nature. She argues on the basis of the epistemology of Immanuel Kant that the CCP should be understood as a *methodological* assumption. Firstly, she points out that the CCP is "[...] an extremely strong metaphysical thesis!" that also forbids any attempt "[...] to trace back physical effects to mental causes"⁶⁶ (Falkenburg 2012, p.46). Secondly, she underlines the role this principle has had in the Enlightenment to counter superstition and magic by excluding supernatural causes, at least in methodological considerations. Thirdly, she observes that, the first and last part of the trilemma introduced in section 3.2.2 – that (1) mental events are not physical, that they are strictly different from physical events, and that (3) mental events can cause physical events (that is, mental causation is possible), are in harmony with our subjective everyday experience of ourselves. The third part (2), the 'closure' in the CCP, in contrast does not necessarily have a simple connection to everyday experience. Instead, it is the result of having changed a methodological principle into a metaphysical assumption. She also regrets that, at present, very few philosophers dare to question the CCP (Falkenburg 2012, pp.45–51). Interpreting Kant, she likewise claims that his understanding of causality has the following three features: "The order of cause and effect is constitutive for the *order of time*. – The effect *necessarily* follows the cause according to the principle of causation. – The assumption of this necessary connection is merely a *methodological principle*, without which we would not have any coherent experience"⁶⁷ (Falkenburg 2012, p.273; my translation). Falkenburg's interpretation of Kant may not be a mainstream interpretation of his work, but here it is assumed to be at least possible and plausible.⁶⁸

With a different starting point, but also directed against the causal closure principle, philosopher of science John Dupré, on the basis of ideas of

⁶⁶ The original German text is: "Die Behauptung der kausalen Geschlossenheit der physischen Welt ist – bei aller Plausibilität, die sie scheinbar aus dem Kausalprinzip bezieht – eine äußerst starke metaphysische These! (K) verbietet es nämlich *auch*, physische Wirkungen auf mentale Ursachen zurückzuführen; [...]" (Falkenburg 2012, p.46).

⁶⁷ The original German text is: "Die Reihenfolge von Ursache und Wirkung ist konstitutiv für die *Zeitordnung*. – Die Wirkung folgt nach dem Kausalprinzip *notwendig* auf die Ursache. – Die Annahme dieser notwendigen Verknüpfung ist aber nur ein *methodologisches Prinzip*, ohne das wir keine zusammenhängende Erfahrung hätten" (Falkenburg 2012, p.273).

⁶⁸ Kant claims that the law of causality is to be understood as an assumption that *must* be made if experience is to be possible (Kant KrV B240). This could be interpreted in the sense that Falkenburg's reading is at least a possible reading of Kant's view on causal closure.

Nancy Cartwright, argues that it is not plausible to believe in what he calls *causal completeness*. One line of argument suggested by him is as follows: It is often *assumed* that determinism and causal completeness are necessary methodological assumptions. But is there direct evidence for causal completeness and/or determinism? Although regularities can be found under specific conditions in experiments, evidence for causal completeness would require more – namely, that even more complex systems can be shown to be causally explained in terms of individual entities; but *such* evidence does not exist. Similarly, he argues that the amount of evidence for regularities in everyday life decreases as the complexity of the situation in question increases. Furthermore, Dupré claims that the impossibility of the solution of even the three-body problem in Newtonian mechanics points to the limitations of mechanistic, reductive thinking (Dupré 2001, pp.164–170). Another central idea related to the former is that deterministic processes such as those observed in machines are artificially created: machines are *made* to be deterministic by their designers and by the engineers who built them. But the fact that machines are so carefully constructed should make us realise that it is far from obvious that other parts, or even *all* parts, of the world could be understood in terms of mechanisms (Dupré 2001, pp.170–177).

It should be noted here that, although Dupré *seems to be* right when arguing that there is less evidence for regularities and causal completeness as the complexity of a system increases, it is possible to argue against his position on the grounds that computer simulations can successfully model even systems of very great complexity on the basis of mechanistic laws. For example, it is *not* problematic to simulate many-body problems in Newtonian mechanics that give highly accurate results, which in turn could count as evidence for the supposed regularities even in complex systems. Thus, although Dupré's approach at first glance appears to be promising for an argument against causal completeness, there are also important problems with his line of argument. Nevertheless, Dupré's ideas could still be read as at least pointing in the direction of *not* understanding the CCP in the stronger metaphysical sense, but rather as a methodological assumption that is generally very useful in the scientific enterprise.

Philosopher Mathias Frisch comes to a similar conclusion in relation to physics, one that also points in the direction of the principle of causality as a *methodological* principle: "Thus the causal assumption is introduced as a general condition, without considering a possible non-causal reduction of the condition. [...] This circumstance is better met by understanding the causal assumption, similar to the conservation of energy, as a general but questionable restriction – that is, a restriction that seems to be satisfied by our experience of the world and that we may therefore be justified in holding as long as

it proves to be fruitful for physics” (Frisch 2012, p.424; my translation).⁶⁹ Here causality is understood in a more pragmatic sense. Clayton and Knapp take a further step, and make the following observation: “By the time one begins to study living organisms, for example, the assumption of CCP plays no significant role in day-to-day scientific work” (Clayton & Knapp 2011, p.56).

Also, like the philosophers mentioned above, philosopher Mikael Stenmark not only argues for and confirms that the CCP should be understood as a methodological principle, but emphasises that “(m)oreover it is seldom observed that the social sciences and the humanities, in contrast to the natural sciences, rely on rejecting the principle of the causal closure of the physical” and that instead “(f)or them what we would call the principle of physical-causal openness in society and the cultural sphere constitutes the fundamental methodological principle” (Stenmark 2016, p.61; my translation). It is simply a fruitful approach within the social sciences and the humanities to assume the possibility of mental causation, regardless of the ontological status of such causation. Further, Stenmark highlights that it is important to realise that assuming that the CCP is an ontological principle is not a consequence of scientific results, but is rather the outcome of philosophical considerations (Stenmark 2004).

Thus it can be said that, given Falkenburg’s reading of Kant and the other arguments briefly presented here, the CCP need not be understood as a metaphysical principle.⁷⁰ In fact, *if* it is understood as an important and valuable *methodological* principle, *then* it still can play the role it has played in the natural sciences. The benefit then would be that the trilemma stated previously in section 3.2.2 about mental events, and arguments such as Kim’s argument, would not have the same force as it would have if one were to take the CCP as a strong metaphysical assumption. The line of argument suggested by Dupré may seem promising to start with; but a brief glance at the possibilities and power of computer simulations suggests that there may be greater problems than initially expected.

⁶⁹ The original German text is: “So wird auch die Kausalannahme als eine solche allgemeine Bedingung eingeführt, ohne sich über eine mögliche nichtkausale Bedingung Gedanken zu machen.[...] Diesem Umstand scheint man besser gerecht zu werden, wenn man die Kausalannahme ähnlich dem Energieerhaltungssatz als eine allgemeine, jedoch anfechtbare Beschränkung auffasst - das heißt als eine Beschränkung, der unsere Erfahrung der Welt zu genügen scheint und die wir daher so lange berechtigterweise machen dürfen, wie sie sich als physikalisch fruchtbar erweist” (Frisch 2012, p.424).

⁷⁰ Lowe, Bishop, and Atmanspacher suggest that it is not necessary to assume the stronger version of the CCP, that there are *only* physical causes. Actually, Atmanspacher and Bishop think that that would be to *assume* physicalism (Bishop & Atmanspacher 2011, p.103); and Lowe points out that the stronger version is not “[...] strongly confirmed by empirical evidence, however much it may be an article of faith with some philosophers” (Lowe 1999, p.230). This points to a position similar to Falkenburg’s: that the causal closure principle is a strong metaphysical assumption that *need not* be made.

Returning more specifically to the above argument by Kim, this principle is of great importance in his argument presented above; and, without this assumption, the argument is actually not nearly as forceful as it seemed to be, despite Peacocke's objections about linear causation or the modifications to supervenience by Murphy and Baker stated above. Kim himself writes, "(t)he deep problem for emergent causal powers arises from the closed character of the physical domain [...]" (Kim 2006, p.199), indirectly emphasising the central role of causal closure in his argument. Also, as stated in the previous chapter, Daniel Dennett's conclusion that dualism is flawed is mainly based on the CCP (Dennett 1991, p.35). Certainly, the assumption of the CCP seems at first glance to be obviously true; but as the preceding discussion strongly suggests, it may actually be reasonable and plausible to adopt a less strict understanding of this principle.⁷¹

In relation to the objection to the concept of emergence, based on the observation that emergence is often understood via *negativa*, the description of emergence given by Terrence Deacon may be helpful. One major feature and advantage of his description is that it is *not* based on the irreducibility and unpredictability of the emergent phenomena, which are construed as a consequence of processes involved in the different levels of emergence. Recall that Deacon's account of three levels of emergence – thermodynamic, morphodynamic, and teleodynamic – is based on the recurrent processes involved in the phenomena at these levels, and it is presumably due to the complexity of the recurrent processes that the emergent phenomena are irreducible and unpredictable. So, in Deacon's account, emergence is not described *via negativa* but by the *positive* description of the recurrent processes; and although Philip Clayton's account is clear and accurate, Deacon's more descriptive account may, for this reason, actually be more suitable. So, although emergence often is described *via negativa* it may be successfully described *via positiva* as in the example of Deacon's account. Furthermore, as stated in section 4.1.1, Deacon's account of emergence does not focus on mental or downward causation in the same way as, for example, Clayton's understanding of emergence does. In fact Deacon, presumably consciously, avoids this apparently problematic concept.

Finally, in response to the problem of emergent properties as *facta bruta*, the following can be said. Firstly, it has become clear that this objection is mainly directed towards *strong* emergence. Thus defending a form of weak emergence or emergence as in Deacon's account would be unproblem-

⁷¹ Based on a general analysis of mental causation, Godehard Brüntrup arrives at a similar conclusion. He distinguishes between causal relations and causal explanations ('Kausalrelationen und Kausalerklärungen'), claiming that one single overall *explanation* of the mind-body relationship that is independent of the explanatory context would not make sense. One conclusion made by him relating to this context-dependency is that to use the mental as an explanation in a *physical* context would be a *methodological* error. It is in *this* sense that he suggests that the physical is causally closed (Brüntrup 1994, p.225).

atic in relation to this objection. Also, it was suggested, but not elaborated, that a change of metaphysics may solve the problem of emergence as *facta bruta*. Apart from the suggestion of understanding the CCP as a methodological principle, the possibility (e) of responding to Kim's argument by revising some metaphysical assumptions has obviously not been discussed, since the suggestions of panpsychism and process philosophy, to be discussed in section 4.2, would be prime examples of this approach.

4.1.3. Short discussion and summary

The three responses by Murphy, Baker, and Peacocke presented in the previous section (section 4.1.2) have in common that at some point they introduce a form of dependency in the relationship between the physical and the mental. Murphy's alternative definition of supervenience uses circumstances as an extra condition; Baker's concept of property constitution also has relevant circumstances as a further condition for constituting an event; and Peacocke rejects a linear understanding of causation in favour of joint causation, where both physical and mental events are interconnected and dependent on each other. Peacocke's defence is closest to the networked picture presented by neuroscientific research in emphasising the interconnectedness and dependency of mental and physical events. Without going into detail, it has already been suggested that it should be possible in reply to Baker and Murphy by arguing that their 'further conditions' in their understanding of supervenience or property constitution could be reduced to physical conditions, which in turn could be included in the subvenient base to mental properties. Thus it is not clear whether their approaches are ultimately successful in relation to Kim's argument or similar arguments.

How about Peacocke's account involving joint networked causation? In the case of Kim's argument, Kim does not explicitly account for this kind of interdependence. He does connect the physical to the mental via supervenience. But supervenience only allows dependency in one direction, from the subvenient base to the supervenient property. So, even though Kim's argument as such is sound, it still may be questioned on the grounds whether it correctly describes the relationship between the mental and the physical, or whether the description used is actually too simple to account for the networked, web-like structure of the brain. This, I deem, is the case especially with regard to the form of linear causation involved in Kim's argument against downward causation. In the case of mental causation, and probably in many other cases of emergent phenomena, a more adequate and more successful approach would be to understand causation not as a linear connection but as a form of 'network' relationship.⁷² Although Peacocke does not

⁷² Michael Silberstein arrives at a similar conclusion. He suggests a combination of ontological emergence and systemic causation, in effect rejecting both the causal closure of physics

use the term ‘network’, his joint causation would certainly not contradict a form of networked causal relationship, and the term accounts for the networked structure in the brain. Mental or downward causation would be included in this joint networked causation. Furthermore, Peacocke’s emphasis on the interconnectedness and interdependency of neural *processes* and his joint networked causality fit well into a process-approach, thus at least not contradicting a change of metaphysics in the direction of process philosophy.

Nevertheless, a reductionist physicalist would presumably still claim that all causation ultimately can be construed as linear causation, that the causal network or joint causation ultimately can be *reduced* to elements consisting of linear causal relationships. It is – so the reductionist physicalist might argue – possible, for example, to group neurons associated with specific mental tasks. These groups could then be regarded as entities having causal influence, simplifying the causal network at a higher level. The causal connections within certain groups of neurons could then be analysed, subsequently reducing the causal connections to those in lower levels and finally arriving at a level entirely described by physical laws. But is this really possible? Certainly, there are methodological and practical limitations. Brigitte Falkenburg correctly observed a problem with the isolation of events in experiments in relation to her discussion of the experiments of Benjamin Libet. She writes, “In many neuroscientific experiments, it is hardly or not at all possible to control whether neglected factors are causally relevant for the interpretation of the measurement results, since the mental ingredients of such experiments – the contents of the consciousness of the test person – cannot be isolated” (Falkenburg 2012, p.182; my translation).⁷³ So, given the complexity of our brain, of our mind with all the unconscious processes happening in the background, it certainly seems at present impossible – given a strictly reductionist and naturalist approach – successfully to isolate *exactly* which specific neuronal processes are causally relevant or not. It is possible, of course, to idealise or simplify situations. This is usually done in the ingen-

and the kind of supervenience defined by Kim (Silberstein 2006, pp.217–220). Likewise, German psychiatrist and philosopher Thomas Fuchs (1958-) suggests that causality should be understood as ‘circular’ and ‘integrated’ in living organisms (“zirkuläre und integrale Kausalität von Lebewesen“) rather than as ‘linear’ (Fuchs 2013, pp.121–132). He also suggests a position that, in my reading, could be regarded as a form of ‘dual aspect monism’, often emphasising the importance of interrelatedness to all mental phenomena (Fuchs 2013, pp.224–268). The latter surely is unsurprising, given his background as a psychiatrist. As with many of the ‘alternative’ positions in between reductive physicalism and dualism, his position is close to *both* an understanding incorporating empirical evidence *and* a commonsense understanding of the mind, the mental, or consciousness.

⁷³ The original German text is as follows: “In vielen neurowissenschaftlichen Experimenten ist kaum bis gar nicht kontrollierbar, ob vernachlässigte Faktoren kausal relevant für die Deutung der Messergebnisse sind. Denn die mentalen Ingredienzen solcher Experimente – die Bewusstseinsinhalte der Versuchspersonen – sind nicht isolierbar” (Falkenburg 2012, p.182).

ious arrangements of many neuroscientific experiments. Yet the global, total picture has not been captured – and, so far, cannot be.

But methodological limitations are *not* ontological limitations. The observations about the limitations of neuroscientific experiments do not allow any conclusions about whether, ultimately or in principle, it is impossible to describe causal processes involving the mental in terms of a great number of linear, temporal causal chains. So are we back at our starting-point? Allowing for methodological limitations is certainly not in opposition to weak emergence; but it does not ultimately support the stronger form of emergence involving downward causation. Such methodological limitations allow for the possibility of downward causation – but *also* for the possibility that downward causation may be shown to be a complex case of physical causation. A similar reasoning could be applied to the above suggestion that the CCP should be understood as a methodological principle. Again, it would not be possible to make any *metaphysical* conclusions about the causal efficacy of the mental. In method we may distinguish between physical and downward or mental causation, but it would not be clear whether this distinction ultimately could or should be made. Nevertheless, understanding the CCP as a methodological principle would still leave open the *possibility* of strong emergence, and even dualism, which as such could be regarded as a benefit.

Also, it should be noted that understanding emergent properties as brute facts is related to the problem that emergence is often understood *via negativa*. Is it not precisely the fact that we are unable to predict and reduce emergent properties that leads on the one hand to the impression that emergent properties are to be accepted as brute facts, and on the other hand that they are only understood *via negativa*? Deacon's account may *appear* to be helpful, since it understands emergence via the *positive* description of the recurrent processes. But an approach to emergence that focuses on the recurrent, reciprocal, and self-organising processes involved in emergence would not exclude the possibility of understanding his account in a reductive physicalist ontology. Why, then, in light of the *theoretical possibility* of fully describing emergent properties in terms of the recurrent, reciprocal, and self-organising processes, should his understanding not be construed as a form of *weak* emergence?

Another problem raised was the question about whether emergent properties in strong emergence must be understood as brute facts. This certainly poses a problem for anyone wishing to defend strong emergence. Indeed, if on the one hand emergent properties must be understood as brute facts, if emergent properties are correlated with certain physical events or processes with no possibility of predicting them or otherwise relating them to the underlying physical events, then it seems that we are moving much closer to a position in which the mental is regarded as ontologically inde-

pendent of the physical; and obviously the question then arises, whether it would not be more reasonable to embrace dualism after all. But dualism was precisely one of the positions to be avoided. If, on the other hand, the emergent properties can be predicted and/or reduced in principle – as, for example, in weak emergence – it may seem that reductive physicalism is a reasonable position after all. So once again: does this lead back to the starting-point? Or does it lead to a conclusion similar to Kim’s, that “[...] nonreductive materialism is not a stable position. There are pressures of various sorts that push it either in the direction of outright eliminativism or in the direction of an explicit dualism” (Kim 1989, p.47). I deem that the above reasoning, and the reasoning in relation to weak emergence at the end of section 4.1.1, support Kim’s conclusion; and thus non-reductive physicalist approaches using the concept of weak or strong emergence would indeed respectively collapse into a reductive approach or end up close to dualism.

So, in summary, it can be said that Peacocke’s alternative understanding of causation is promising, at least as a methodological approach. Especially in relation to divine action and interaction – as shall be elaborated on in chapter 6 – Peacocke’s account may become interesting. But it is not clear whether his causation, having the possibility in mind that joint networked causation may be reduced to linear causation, ultimately refutes arguments like Kim’s, and ultimately answers the question about whether or not downward causation or mental causation – essential for strong emergence – is in fact just a case of complex linear and physical causation. A similar case could be made in relation to Murphy’s or Baker’s non-reductive approaches. Both would presumably have to face problems similar to those discussed above, and either collapse into a reductive approach or end up in dualism.

But what about the possibility of a change of some of the metaphysical assumptions? Maybe the questions and problems with downward causation can be resolved if the metaphysics are changed? The possibility of understanding the CCP as a methodological principle was suggested, which would significantly weaken the impact of Kim’s argument, supporting the possibility of strong emergence. Yet, both Strawson’s and Brüntrup’s arguments against strong emergence would not be affected by understanding the CCP as a methodological principle, since it is not based on the causal power of the strongly emergent properties, but rather on the fact that, in a strong emergentist account, they appear to be brute. Peacocke’s approach with its joint networked causation – although possibly not successful in securing downward causation as an ontological possibility – also points in the direction that mental activity is adequately described as a *process*, indicating that process philosophy may be a fruitful metaphysical approach. This has also been suggested in the discussion of Metzinger’s ‘self-model theory’ in section 3.2.3. Furthermore, it has been suggested in the brief accounts of some ideas developed by Brüntrup and Strawson (sections 3.2.4 and 4.1.2.3), who

both reject stronger forms of emergence, that panpsychism may be a metaphysical position worth investigating in relation to the problems in question. Also, as shall become clear, panpsychism is suggested in some major process philosophical approaches that indicate it to be a reasonable metaphysical approach. Thus it seems appropriate to introduce some major thoughts from panpsychism and process philosophy.

4.2. Process philosophy and panpsychism

The discussion in the previous chapter and in the previous sections of this chapter has pointed in the direction of process philosophy and panpsychism. But before turning to some central features of process philosophy and panpsychism, a brief overview of their history should be given, indicating that neither of these positions is novel in the history of philosophy, and even that history suggests that these positions are close to each other and are supposedly related – or, at least, can be successfully related.

Like many other philosophical ideas, process philosophy can be traced back to ancient Greece. Heraclitus of Ephesus (approx. 500 BCE), for example, claimed that the process of fire is the basis of all natural processes, and regarded everything in the world to be a result of this ‘fire process’ – the fundamental force in nature manifesting change and process. He also emphasised that everything is in motion, that everything flows. In recent times – especially in the Anglo-American tradition – process philosophy has often been associated specifically with the philosophy of Alfred North Whitehead (Rescher 1996, pp.9–10). Philosophers from other traditions could also be regarded as process philosophers. Some better known examples are Gottfried Wilhelm Leibniz (1646-1716) with his monadology; but Johann G. Fichte (1762-1814), Friedrich W.J. Schelling (1775-1854), Georg W.F. Hegel (1770-1831), and even Martin Heidegger (1889-1976) have also used and/or developed ideas that could be regarded as process philosophical ideas (Seibt 2012). In the philosophy of religion, and in the tradition of Whitehead, John B. Cobb (1925-), Charles Hartshorne (1897-2000), and David Ray Griffin are more well-known examples. But also William James (1842-1910), Charles Sanders Peirce (1839-1914), and Henri Bergson (1859-1941) – the first two better known for their pragmatism – could, according to Rescher, be regarded in some sense as process philosophers, or at least as sympathetic to process philosophical ideas (Rescher 1996, pp.14–18).

Similarly, panpsychistic ideas can be traced back to ancient Greece; and, more interestingly, several of the above-mentioned philosophers with process philosophical ideas, such as Leibniz, Heidegger, James, Bergson, Peirce, Whitehead, Hartshorne, and Griffin, reappear in the history of panpsychistic thinking (Skrbina 2005). In particular, Griffin and Hartshorne

have both used terms such as ‘panexperientialism’ or ‘psychicalism’, which can be regarded as synonyms for panpsychism (Griffin 2001, p.97; Dombrowski 2001; Enxing 2013, p.37; Griffin 1998, p.78). Moreover, the fact that A.N. Whitehead attributes both a mental pole and a physical pole to his entities which he called ‘the actual occasion’ (Whitehead 1978, p.239) – to be described further later – could be interpreted as a form of panpsychism; and it is also presumably one of the reasons that Hartshorne and Griffin, who have both further developed Whitehead’s philosophy, have openly used the above terms for their positions. Of course, it shall not be argued here that either position entails the other, but rather that there is at least some form of closer historical relationship.

In summary, it can be said that in the history of philosophy there are overlaps between the positions of panpsychism and process philosophy, and that ideas from process philosophy have been combined with ideas from panpsychism. Also, given that the final goal of this thesis is to discuss theistic beliefs in relation to consciousness and free will, and that two of the philosophers, Hartshorne and Griffin, are both process philosophers and panpsychists, and that both have directly elaborated questions concerning religious beliefs, this suggests that it may be reasonable to introduce ideas from *both* positions in relation to each other.

4.2.1 Basic features in process philosophy and panpsychism

Having highlighted some historical aspects of the two positions of panpsychism and process philosophy, and shown that there is at least some relatedness between the two, it is now time to turn to the question about the basic features of process philosophy and panpsychism respectively.

4.2.1.1 Process philosophy

The basic idea of process philosophy is to give priority to processes instead of substances. Nicholas Rescher (1928-), who is not a panpsychist, describes some more general features of process philosophy. The primacy of activity, process, change, and novelty over substance, product, persistence, and continuity is central to process philosophical approaches. To quote Rescher:

Accordingly, ‘process philosophy’ is best understood as a doctrine committed, or at any rate inclined, to certain basic teachings and contentions: that time and change are among the principal categories of metaphysical understanding, that process is a principal category of ontological description, that processes – and the force, energy, and power that they make manifest – are more fundamental, or at any rate not less fundamental, than things for the purposes of ontological theory, that several if not all of the major elements of the ontological repertoire (God, nature-as-a-whole, persons, material substances) are best understood in process terms, that contingency,

emergence, novelty, and creativity are among the fundamental categories of metaphysical understanding. (Rescher 1996, p.31; Rescher 2000, chap.2)

He summarises some of the main features of process philosophy, without focusing on any particular philosopher, as follows: interactive relatedness, wholeness, self-development, innovation and novelty, unity of law, productive energy, fluidity, agency. All these features have their counterparts in substance philosophy: discrete individuality, separateness, condition, uniformity of nature, unity of being, descriptive fixity, classificatory stability, passivity (Rescher 1996, p.35).⁷⁴ This is in clear opposition to the primacy of substances proposed by Aristotle (Aristotle *Metaph.* IV:2 1003 b6-11), which has been the dominant view in Western natural science.

This seems to be the right place to present briefly some central concepts in the philosophy of Whitehead, especially since several of the above philosophers, including Griffin and Hartshorne, have developed their ideas specifically in the tradition of Whitehead, and also have related to both panpsychism and theology. All three of them can also be regarded as panpsychists. Process philosophy is often associated with Whitehead. Whitehead uses a less common terminology that is specific to him and to those working in his tradition. Although I believe that it is important briefly to introduce his terminology, since it is used by some of the philosophers referred to in this thesis, I would also wish to emphasise that it is *not* necessary to stick to his terminology.

Three of the more important categories of existence – Whitehead names eight in total – are *actual entities*, *prehension*, and *nexus* (Whitehead 1978, pp.18–22). “Actual entities – also termed ‘actual occasions’ – are the final real things of which the world is made up” (Whitehead 1978, p.18). Prehensions are the “[...] concrete facts of relatedness” (Whitehead 1978, p.22). “Actual entities involve each other by reason of their prehensions of each other. There are thus real individual facts of the togetherness of actual entities, which are real, individual, and particular, in the same sense in which actual entities and the prehensions are real, individual, and particular. Any such particular fact of togetherness among actual entities is called a ‘nexus’ [...]” (Whitehead 1978, p.20). Macroscopic objects are complex nexus, and can for some purposes be treated as single actualities (Sherburne 1966, pp.77–89). In “The Categories of Explanation”, Whitehead says “(t)hat the actual world is a process, and that the process is the becoming of actual entities” (Whitehead 1978, p.22). Thus actual entities are related and connected to each other by prehensions, and a group of actual entities interconnected to each other forms a nexus. The relatedness of actual entities has two poles: a mental and a physical pole. David Ray Griffin – a process philosopher in the

⁷⁴ See also section 3.2.3, note 44.

Whiteheadian tradition – describes the bipolarity of actual entities, referring to Whitehead's *Process and Reality* as follows:

Every occasion of experience is said to be *dipolar*, having both a physical and a mental pole [...]. The physical pole is the occasion's prehension of influences from past actual occasions; the mental pole, which originates with conceptual prehensions [...], is the occasion's self-determination. The physical pole in other words, is constituted by *efficient causation* from the past, while the mental pole is the occasion's *final causation* in the sense of self-determination of an ideal. (Griffin 2001, p.109)

Final causation and efficient causation are also linked to two other important concepts in the philosophy of Whitehead: *concrecence* and *transition*. Whitehead writes: "The discovery is that there are two kinds of fluency: One kind is the *concrecence* which, in Locke's language, is 'the real internal constitution of a particular existent'. The other kind is the *transition* from particular existent to particular existent" (Whitehead 1978, p.210), and further down: "Concrecence moves towards its final cause, which is its subjective aim; transition is the vehicle of the efficient cause, which is the immortal past" (Whitehead 1978, p.210).

Summarising, actual entities have both a mental and a physical pole, and are related and connected to each other by prehensions. Groups of actual entities interconnected to each other form a nexus, and the becoming of actual entities is a process. The process of becoming is named 'concrecence', and the process of connection to other actual entities is named 'transition'. Since any relation of an entity to other entities would recursively affect the entity, and since the process of becoming has its starting-point in itself, thus re-determining itself through its relation to its surroundings, it has also become clear that some rudimentary form of creativity and self-determination is granted in the mental pole and interrelatedness. Clearly, although the terminology used by Whitehead is less common, the concepts used by process philosophers in the Whiteheadian tradition fit well into Rescher's brief description given above. These process philosophical ideas obviously can be, and have been, applied to various areas, one of them being the philosophy of mind, and another being theistic religion.

4.2.1.2 Panpsychism

How can *panpsychism* be briefly described? The word itself, which etymologically can be traced to the ancient Greek words παν-pan-all and ψυχη-psyche-soul, already suggests some form of definition – namely, that everything in some sense has a soul. David Skrbina (1960-) uses the following definition by T.L.S. Sprigge (1932-2007) as a starting point:

Panpsychism is the thesis that physical nature is composed of individuals each of which is to some degree sentient. It is somewhat akin to hylozoism,

but in place of the thesis of the pervasiveness of life in nature substitutes the pervasiveness of sentience, experience or, in a broad sense, consciousness. (Sprigge 1998)

In an attempt to avoid some of the more problematic and contentious concepts such as ‘consciousness’ or ‘sentience’, Skrbina suggests the following short definition of panpsychism: “All objects, or systems of objects, possess a singular *inner* experience of the world around them” (Skrbina 2005, chap.16; my emphasis). D.S. Clarke makes a further distinction between *restricted* and *unrestricted* panpsychism. The former involves further conditions, such as restricting the scope of ‘pan’-psychism to organic lifeforms, while the latter – although more controversial – can, according to him, be extended to one-cell organisms and even to molecules and subatomic particles (Clarke 2003, pp.5–6). Also, the distinction between *constitutive* and *non-constitutive* panpsychism is often used. The former “[...] is the thesis that macrophenomenal truths are (wholly or partially) grounded in microphenomenal truths”, whereas the latter “[...] is the thesis that macrophenomenal truths are not grounded in microphenomenal truths” (Chalmers 2017b, p.181). I will usually refer to panpsychism in general, but this distinction will be useful when considering the combination of ideas from emergence and panpsychism. As already mentioned, although he regards himself as a panpsychist, Griffin uses the term *panexperientialism*, which he thinks is preferable, since the term ‘psyche’ suggests both a higher ‘soulish’ form of experience and that experience lasts over a longer period of time, which he believes need not be the case in the basic units of experience (Griffin 1998, p.78; Griffin 2001, pp.5, 95–96). It should be noted that, although *pan* in a sense is understood as universal, it need not be the case that it refers to ‘every-thing’ but only to ‘genuine *units* and *individuals*’. Clearly, at least some panpsychists wish to exclude presumably problematic statements that can be developed into major objections, such as that ‘Rocks may have feelings’ (Griffin 1998, p.78 n2; Clarke 2003, pp.2–6). Moreover, Brüntrup for example emphasises that “(thus) panpsychism does not entail the absurd thesis, that the mental properties of the lowest levels of complexity, that is the level of elementary particles, have to be thought of according to the model of human subjectivity” (Brüntrup 2011, p.35; my translation).⁷⁵

Even at this stage it becomes evident that Whitehead’s process view of the world, which involves both mental and physical poles and the concept of prehension, could be regarded as a form of panpsychism. Consequently, even Griffin’s and Hartshorne’s position – and presumably any position rely-

⁷⁵ The original German text is as follows: “Daher impliziert der Panpsychismus auch nicht die absurde These, dass die mentalen Eigenschaften der untersten Komplexitätsschichten, also der Elementarteilchen, nach dem Modell menschlicher Subjektivität gedacht werden müssen“ (Brüntrup 2011, p.35).

ing heavily on the philosophy of Whitehead – could be regarded as panpsychistic. Yet it is not clear whether process views *in general*, as understood by Rescher, would count as forms of panpsychism. Certainly, features such as interactive relatedness or agency as stated in Rescher’s understanding may be interpreted as leading to panpsychism, and may even suggest that panpsychism is to be considered, given a process philosophical understanding of reality; but it is far from obvious whether panpsychism in general is *entailed* by a process view. Conversely, by embracing a panpsychist position, one need not think that processes are the primary ontological category. Substances, although having some form of ‘singular inner experience’ or ‘sentience’ as in the definitions given above, may still be the primary ontological category. The feature of passivity assigned to ‘substance philosophy’ by Rescher may possibly be problematic, given a panpsychistic view in a supposedly substance philosophical setting. Clearly these questions require further investigation, but not in this thesis. In any case, it is now time to take a closer look at some of the advantages and problems of the proposed positions.

4.2.2 Advantages and problems with process philosophy and panpsychism

In the next two sections, some of the more common advantages of and objections to process philosophy and panpsychism will be presented and discussed. The main focus in both sections will be on arguments concerning panpsychism since, I believe, a focus on process in relation to understandings of nature, and more specifically of the human mind, is less controversial.

4.2.2.1 Possible advantages with process philosophy and panpsychism

One apparent advantage of both process philosophy and panpsychism is the following: Given a process view, the interrelatedness often highlighted by scientific research about the mind, consciousness, and/or the brain is captured at the ontological level. This would particularly mean that both networked brain processes and even their temporal character – the fact that they are fluid and ever-changing throughout time – is captured and even suggested by a process approach.⁷⁶ This possibility has already been presented in sections 3.2.3, 4.1.2.4, and 4.1.3. Further, Griffin, Whitehead, Hartshorne, but also Rescher, who explicitly does not use Whiteheadian terminology, argue that the mind/body problem as described in chapter three can be ‘solved’ within a process philosophical framework (Griffin 1998, pp.77–

⁷⁶ There are advantages of a process philosophical approach even in other fields of research; and these advantages could presumably be developed into a more general argument that a process philosophical approach should be preferred.

116). Rescher concludes that both material and mental operations can be regarded as “[...] modes of natural processes at large, representing a difference in sort but not in kind” (Rescher 1996, p.114). The question, especially in relation to the first three philosophers, is how much work is done by the process understanding and how much is done by their obviously panpsychistic approach. And even the above citation of Rescher, although he does not regard himself as a panpsychist, could, I deem, be interpreted as pointing in the direction of panpsychism.

But what, more specifically, are the advantages of a panpsychist approach? Here, I shall present what I deem to be the most convincing arguments and advantages with a panpsychist approach: (1) the hard problem presented in chapter 3 is solved; (2) the problems associated with strong emergence can be avoided; (3) panpsychism is monistic; (4) it solves the problem of downward causation, as discussed earlier in this chapter; (5) Tononi’s IIT is supported by panpsychism; (6) the ‘origination argument’; (7) there may be some advantages in relation to theism; and (8) there are advantages in relation to basic epistemological and ontological presuppositions.⁷⁷

One of the results in chapter 3 was precisely to suggest panpsychism as a position that avoids the problems stated in relation to reductive physicalism and dualism, which would amount to the first advantage listed above (1). The problems in relation to reductive physicalism – such as its inability to answer the question of *what it is like* to be conscious or to feel, that it misses the first-person experience of subjectivity and qualitiveness, or that, it does not solve the hard problem, as has been briefly sketched in section 3.2.4 and concluded in section 3.3 – disappear given panpsychism. The qualitiveness, the subjectivity, would arise from the ‘inner experience’ of all micro-entities in panpsychism. Recall, for example, that Strawson argues that the following two theses are opposed to each other: “(P)hysical stuff is, in itself, in its fundamental nature, something wholly and utterly non-experiential”, and “[...] experience is a real concrete phenomenon and every real concrete phenomenon is physical” (Strawson 2006b, pp.11–12). According to him, the latter thesis is the thesis of ‘real physicalism’. A physicalist should not deny the latter – she is after all a physicalist – hence the former must be false; which leads – after having ruled out emergence – ultimately to panpsychism (Strawson 2006b). Nagel, in contrast to Strawson, does not conclude that panpsychism is a viable option, although he briefly discusses its possibility (Nagel 2012, pp.61–63). Likewise, the problems raised by the conceivability argument discussed in section 3.2.4 would be avoided.

⁷⁷ Similar lists of the advantages of panpsychism can be found in, for example, Griffin’s or Skrbina’s work (Skrbina 2005, pp.250–254; Griffin 1998, pp.89–92). Some of their ideas overlap with the above list; others have not been considered here.

Of course, the above relation to the reasoning in chapter 3 could be emphasised once more. Panpsychism avoids not only the problems of reductive physicalism, but also those of dualism. Indeed, it is possible to argue, as Skrbina does, that this is a ‘last man standing’ argument (Skrbina 2005, pp.252–253). But the approach in this thesis has rather followed Chalmers’ Hegelian argument (Chalmers 2017a, p.20) that panpsychism (and emergence, whose stronger form has been questioned in section 4.1.2) is suggested by what should be avoided in physicalism and dualism, and what should be incorporated from these two extreme positions.

But panpsychism could also be combined with emergence. Griffin sees no tension between his position of panexperientialism – a form of panpsychism – and the idea that the mind emerges from the brain (Griffin 1998, p.235). If weak emergence, or a more neutral form of emergence such as Deacon’s, were to be combined with panpsychism in the version represented by Griffin (and presumably also by Hartshorne and Whitehead), then on the one hand the problem of emergence as *facta bruta* would not arise as in strong emergence; and on the other hand the threat of collapsing into reductive physicalism (as argued at the end of section 4.1.3) would still be avoided. So panpsychism would be supported in the sense of advantage (2). Likewise, arguing for panpsychism on the basis of rejecting what I understand to be strong emergence, William Seager (1952-) suggests the following, involving and referring to the difficulties within strong emergence as a possible argument for panpsychism:

Matter must have an intrinsic nature to ground its dispositional properties. [...] An emergentism which made the generation of consciousness intelligible would be one which showed how experience emerged from what we know about matter; that is, from its dispositional properties. But it seems impossible to see how the dispositions to move in certain directions under certain conditions could give rise to or constitute consciousness, save by the kind of brute and miraculous radical emergence discussed above. If granting some kind of experiential intrinsic aspect to the fundamental physical entities of the world eliminates the problem, it might be worth the cost in initial uncomfortable implausibility. (Seager 2009, p.215)

Recall, however, that both Strawson and Brüntrup suggest panpsychism together with emergence theories as possible distinct alternatives to dualism and reductive physicalism. They treat them separately, but then *dismiss* emergence as a possible alternative, in what I presume is understood to be *strong* emergence (Strawson 2006b, pp.12–21; Brüntrup 2011, pp.27–31). So there might be problems with combining emergence with panpsychism or process panpsychism. Nevertheless, the question remains whether emergence – at least in some form – could be combined after all with panpsychism. In the end, Brüntrup thinks that this is in fact possible

(Brüntrup 2011, p.35; Brüntrup 2017), and even Strawson suggests that the notion of emergence – presumably in its weaker sense – may be applicable to his understanding of experience (Strawson 2006b, p.27). Brüntrup argues that the emergence of attributes belonging to a different category cannot be made intelligible; in this case this would be the emergence of the mental from the physical. But the emergence of attributes of the same kind is fully possible (Brüntrup 2017).⁷⁸ It may thus be possible to combine panpsychism and *some* form of emergence. Given that there are different understandings of emergence – not only the ‘brute’, presumably strong, forms referred to by Strawson and Brüntrup – Skrbina also claims that the two positions are not mutually exclusive (Skrbina 2005, pp.6–8). Moreover, as stated above, Griffin also claims that his version of panexperientialism is compatible with emergence theories. Thus it is plausible that a weaker form of emergence may be combined with both panpsychism and a process philosophical approach. Still, in her thesis, Hedda Hassel Mørch reasons that a combination of emergence and panpsychism inherits the problems discussed in section 4.1.2 in relation to emergence, and relates this to the ‘combination problem’, which will be discussed in the next subsection (Hassel Mørch 2014, pp.39–54).

The strength of being monistic, as in advantage (3), was one of the features of reductive physicalism that an alternative position should retain. Obviously, panpsychism has precisely this advantage in the approach taken here. But this advantage can be further supported. A monistic view certainly seeks ontological unity. Unsurprisingly, Brüntrup argues that there is an ontological simplicity in panpsychism (Brüntrup 2017) that could be regarded as a reason to favour panpsychism. This claim, that there is an ontological simplicity in panpsychism, could provide a new basis for the ontological unity of science, philosophy, and religion; and I believe that this idea is important in relation to this thesis. Research from science and philosophy has already been (or will be) taken into account in this thesis; and presumably such unity could be extended to include theology. If panpsychism at least allows for such a unity, then this consequence should count in favour of its position. It should be further noted here that the central claim of panpsychism – that there is some inner experience in any object among the world’s entities – is contradicted neither by the methodology of science nor its results. The objection that science does not, or even cannot, observe the *inner* experience of other entities would not count since, in the case of inner experience at the macro level, it is likewise not possible to observe the inner

⁷⁸ Brüntrup introduces two further distinctions: between inter-attribute and intra-attribute emergence, and between weak, strong, and superstrong emergence (Brüntrup 2017). It is unclear (but will not be discussed here) how his terminology corresponds with the terminology used in this thesis. In any case, it is superstrong emergence that “[...] breaches or transcends categorical frameworks” (Brüntrup 2017, p.68) that he deems most problematic.

experience of, for example, a fellow human being. What I do when meeting another person is that I *infer* from my own inner experience that s/he has experiences significantly similar to mine.

According to Griffin, the problem of downward causation described in the previous section is easily resolved in his process philosophical and pan-experientialistic approach (4). Discussing causal closure, Griffin points out that, in his panexperientialistic version of physicalism, the entities are not merely ‘physical’ entities but ‘physical-mental’ entities. But if these entities are also mental, there is little reason to understand causal efficacy merely in terms of the physical, leading to Griffin’s conclusion that “(a)ccording to panexperientialism, the causal efficacy can also occur by virtue of the mental aspect of an occasion of experience, meaning that aspect in which self-determination may occur” (Griffin 1998, p.237).⁷⁹ Referring directly to the terminology of Whitehead briefly introduced above, Griffin attempts to explain mental or downward causation in the mind/body problem:

The experienced unity of the psychophysical society is enjoyed by a dominant occasion in its process of concrecence, during which it exercises self-determination, deciding, among other things, how to exert influence upon its body in the next moment. Then, after its concrecence has reached satisfaction, its decisions exert influences upon various parts of the brain, thereby giving instructions to various parts of the body. This is the ‘mental’ of ‘downward’ causation that materialism is unable to affirm. (Griffin 2001, p.121)

In other words, given that entities are both mental and physical and that the power of exerting causal influence already lies in both aspects of these entities, it is not surprising that actualities at a higher-level – for example, the mind – also are capable of exerting causal influence (Griffin 1998, p.235). Likewise, Rosenberg argues in relation to panpsychism that this position “[...] shouldn’t be adopted simply because it might be a solution to the mind/body problem”, but also because it is “[...] a solution to the carrier-causality problem, the problem of what intrinsic natures carry the schemas of causality in our world” (Rosenberg 2017, p.155). Indeed, given the problems with mental and downward causation discussed earlier in section 4.1.2, the

⁷⁹ In his early works on consciousness, Chalmers already realises that there is the possibility of mental properties ‘inheriting’ their causal powers from mental entities at the micro-level, although at the same time he speaks of ‘intrinsic properties’ and ‘the threat of panpsychism’. Chalmers writes: “Either way, this sort of intimate link (panpsychism) suggests a kind of causal role for the phenomenal. If there are intrinsic properties of the physical, it is instantiations of these properties that physical causation ultimately relates. If these are phenomenal properties, then there is phenomenal causation; and if these are protophenomenal properties, then the phenomenal properties inherit causal relevance by their supervenient status [...]. In either case, the phenomenology of experience in human agents may inherit causal relevance from the causal role of the intrinsic properties of the physical” (Chalmers 1996, p.154).

above reasoning should be regarded as supporting the adoption of panpsychism.

Another advantage (5), I deem, would be that the IIT theory of Tononi (introduced in section 2.2.1) is supported by panpsychism. Firstly, if this is correct, then this would be a good example of how panpsychism relates positively not only to empirical results as such, but also to scientific theory, again supporting advantage (3). Recall that Tononi's theory actually provides a measure for consciousness. This suggests that there are levels of consciousness that correspond with levels of complexity. To be sure, Tononi points out that his theory does *not* entail panpsychism. Granting that this is correct, it is nevertheless the case that, if panpsychism were true, then Tononi's theory would not be contradicted, since it could be applied to *any* kind of system, and it would then still provide a measure for higher forms of consciousness arising even in systems other than the human brain.⁸⁰ Indeed, panpsychism *supports* his theory, since it also suggests that there are levels of consciousness, and that consciousness need not be restricted to animal or human consciousness. Furthermore, Tononi's theory – and also to some extent panpsychism – would be supported by the observation that every living system has some form of dynamic sensitivity. To be sure, this cannot be taken strictly as an argument for panpsychism 'all the way down', but it at least supports the notion that some form of subjectivity and qualitativeness is far more common than if one were to assume that such properties are merely to be found in humans.

Another interesting and important argument for panpsychism, based on the evolution of the mental, and sometimes called the 'origination argument' (6), can be summarised as follows: At some point in evolution, mentality in some primitive form occurred for the first time. In order for this ability to develop mentality to survive and be passed on to succeeding generations through evolution, it would have to have some adaptive advantage. Certainly, the behavioural capacity in mentality would have some advantage, but what about experience as such? It seems that the experience in itself has no advantage, that behaviour could be simulated mechanically, and thus that the question remains of how experience could continue to survive in evolution if experience, at least in some rudimentary form, was not present all along (Clarke 2003, pp.109–110).

Also, since panpsychism allows for at least some rudimentary form of inner experience at all levels, the question can be posed whether this is of advantage in a theistic worldview (7). At this point, one may already suspect

⁸⁰ In her clear and comprehensive description of Tononi's theory, Hassel Mørch claims that panpsychism actually follows from Tononi's IIT theory (Hassel Mørch 2017). I do not agree entirely with her reading of Tononi's theory, since the measure introduced by Tononi, the ϕ , may well be zero for many systems (Tononi 2008, p.236). But at least, as stated in the main text, Tononi's IIT is not opposed by the metaphysical position of panpsychism, but is instead supported by it.

that to be the case. This question certainly has to be elaborated further. Recalling the aim and outline of this thesis, this will be done in chapter 6, and will lead in the direction of panentheism.

Another interesting argument, offered by Christian DeQuincey, relates to epistemological and ontological presuppositions (8). DeQuincey introduces what he calls the ‘Ep-On bootstrap principle’: that “(o)ur choice of epistemology (Ep) is constrained by our ontology (On), and vice versa” (DeQuincey 2002, p.142). His argument relates mainly to idealism and physicalism – DeQuincey uses the term ‘materialism’ – and could be briefly summarised as follows: In absolute idealism, the ontology denies that material is real, which leads to the problem that human perception based on physical sense organs must be illusory, and thus cannot provide access to truth and reality. Materialism faces a similar problem – namely, that if matter is completely non-experiential and insentient, then it is inconceivable that reason as a mental function arises from matter; and consequently it seems hard to see how reason and rationality can have epistemological legitimacy. DeQuincey claims that panpsychism avoids this problem, and can ‘bootstrap itself’ out of the above entanglement of epistemological and ontological problems (DeQuincey 2002, pp.142–145).⁸¹

The first five of the eight advantages listed above relate more directly to the overall approach of this thesis, and also to more specific problems raised in this chapter. Indeed, one of the central objections raised against emergence theory – the problem of mental or downward causation – is easily solved within a panpsychistic and process philosophical setting. The descriptive advantages of accounts of emergence such as Deacon’s – if, as I presume, it is not read as a form of *strong* emergence – can be retained in combination with panpsychism. Also, the hard problem of consciousness briefly discussed in section 3.2.4, which can be seen as a major problem for reductive approaches, may find a solution, for if some form of mentality/experientiality is already present at the lowest levels of reality, then it is not surprising that they also occur at higher levels in more complex forms. In fact, in a sense the hard problem is at the core of some of the arguments *for* panpsychism; for how could mentality, the qualitative, consciousness, and so on arise from matter that is devoid of all these properties? Further, in a process panpsychist approach, all entities encountered in the phenomenal world would presumably have both physical and mental aspects; in other words, there is only one ‘stuff’. Thus an emergent, panpsychist, and process philosophical approach could presumably be regarded as monistic, and would consequently also have the strength of monism accounted for in relation to

⁸¹ Interestingly, Chalmers considers and discusses idealism in a chapter in a forthcoming book, and concludes that “(n)o position on the mind–body problem is plausible” (Chalmers 2018, forthcoming), and that “(i)dealism is not significantly less plausible than its main competitors” (Chalmers 2018, forthcoming).

the reductive physicalist approach (as discussed in section 3.2.1). In relation to Kim's argument, this would mean that causal power is also granted to the mental by the metaphysical approach, and therefore the CCP would not refer merely to physical causes, but even to mental causes. So, irrespective of whether or not the CCP is understood as a methodological principle, the problem connected with mental or downward causation would not arise in the same way. Also, it supports the scientific IIT theory of Tononi. In any case, given the approach in this thesis and the results from chapter 3, it is clear that panpsychism encounters the problems of neither dualism nor reductive physicalism. It is not contradicted by science, it is monistic, and it allows for an understanding of the mental at all levels – and thus even at the level of human consciousness.

So an emergent, panpsychist, and process philosophical framework is both hopeful and promising for the task of solving the mind/body problem; and it can be regarded as a viable alternative to dualism and reductive physicalism. But it is obvious that there may be problems, especially for panpsychism, such as the combination problem referred to earlier.

4.2.2.2 Possible problems with process philosophy and panpsychism

Certainly, one of the central objections to process philosophy relates to its main premise that processes, not substances, are the primary ontological category. In his description of process philosophy, Rescher states that a proponent of the former should be able to defend her position against the 'process reducibility thesis': "The only sorts of processes there are, are *owned* processes – processes that represent the doing of substances. There are just no processes apart from those that constitute the activity of identifiable agents. All process is reducible to the doings of (nonprocessual) things" (Rescher 1996, p.44). In response, taking a closer look at this 'reducibility thesis', Rescher suggests the following: Given a traditional understanding of substance described by primary and secondary properties – the former understood as properties the substance has in itself, the latter as those which the substance has in relation to other substances – the question arises whether *any* of these properties can be established without relating to and interacting with the substance in question. But if this were so, why should substances, and *not* processes, be regarded as primary? In other words, in a substance ontology, properties could not even be established without involving *processes* (Rescher 1996, pp.44–49). Even if properties were described as 'relational' or 'non-relational', it would still be unclear whether non-relational properties can exist independently, since it would not be possible to establish non-relational properties without involving some form of relation.⁸² Rosen-

⁸² Michael Rea (1968-) suggests the distinction between relational and non-relational properties in his description of David Armstrong's understanding of substances (Rea 2014, pp.38–39).

berg argues that, given his theory of causal significance, even the properties of particles at the micro level, such as electrons, cannot be regarded as determinate in isolation (Rosenberg 2017, p.163). Again, this would point in the direction of every entity being part of a relation or a process as primary. Furthermore, ideas from contemporary physics also point in the direction that a process philosophical approach that focuses on interactivity, dynamics, and interrelatedness is at least as reasonable as an approach based on a substance ontology. Already, the well-known fact that elementary ‘particles’ are perceived as either waves or particles depending on their *relationship* to the measurement points towards the concept of substances being questionable and problematic. Likewise, the concept of fields, widely used in physics, suggests similar thoughts about the primacy of *relation* and *interaction*. Of course, it is not the aim of this thesis to discuss in detail the advantages and/or disadvantages of a process or substance ontology in relation to scientific research in general. But a process approach is clearly as plausible as a substance philosophical approach.

But what about objections to and problems with panpsychism? This position is often more-or-less dismissed out of hand. John Searle, for example, briefly discusses this position in his book *Mind*; referring to Chalmers’ example of an experiencing thermostat, he writes:

Aside from its inherent implausibility, pan-psychism has the additional demerit of being incoherent. [...] If the thermostat is conscious, how about the parts of the thermostat? Is there a separate consciousness to each screw? Each molecule? If so, how does their consciousness relate to the consciousness of the whole thermostat? And if not, what is the principle that makes the thermostat the unit of consciousness and not the parts of the thermostat or the whole heating system of which the thermostat is a part or the building in which the heating system exists? (Searle 2004, pp.104–105)

Searle’s citation points to several possible lines of arguments against panpsychism. He claims that the position of panpsychism in general is implausible. Moreover, his question about the thermostat suggests that there is a problem for panpsychism for how the individual entities combine, for example, into the complex form of human consciousness – or even, for that matter, into rudimentary forms of consciousness. These two problems for, or arguments against, panpsychism are certainly important, and will be discussed. Here I shall present what I regard to be the most substantial objections, including the two above: (1) panpsychism is unnecessary: the mental can be explained by the physical; (2) panpsychism is implausible and makes claims such as ‘rocks have feelings’; (3) the mind/body problem is a mystery; (4) panpsychism is an empty position; (5) panpsychism is in conflict

with science; (6) panpsychism cannot be empirically tested; and (7) the combination problem.⁸³

Objection (1) is clearly related to the overall approach of this thesis. It should certainly have become clear by now that one of the main reasons for considering panpsychism as an alternative to physicalism was precisely the problem that consciousness cannot be explained merely in terms of the physical. This obviously corresponds with the first advantage of panpsychism, discussed in the previous subsection. But this objection – that it should be possible to construe consciousness merely in terms of the physical – is also related to the idea that a monistic position is more reasonable. Again, panpsychism, as has been argued for here, is clearly a position that precisely incorporates the important feature of physicalism, that of being a monist position.

Objection (2), that panpsychism is implausible and that it claims that inanimate objects have feelings, I regard as more forceful. Thinking of humans and other possibly inanimate objects in a strict analogy may indeed seem unreasonable and render the position of panpsychism both implausible and unintelligible. But that is not the question at hand. As already stated in the description of central features of panpsychism, Griffin, Clarke, Skrbina, or Brüntrup (and presumably many others with them) *do not* understand panpsychism as the thesis that everything has some form of *human* subjectivity, mentality, or consciousness. So the proposed analogy is not at the level of inanimate objects having *human* subjectivity, mentality, or consciousness. Rather, it is suggested that there is some form of inner experience even at the lowest levels of reality. Here, once again the importance of avoiding contentious concepts in the definition of panpsychism – as suggested by Skrbina – becomes clear. In fact, terms such as ‘proto-mentality’ and ‘low-grade-awareness’ are often introduced in order to qualify what should be understood by panpsychism (Skrbina 2005, p.18). This problem has also been noted by Griffin and Hartshorne, who use the terms ‘panexperientialism’ and ‘psychicalism’ respectively. Griffin specifically introduces the term ‘panexperientialism’ in an attempt to avoid the term ‘psyche’ in panpsychism, which may easily be associated with ‘soul’ (Griffin 1998, p. 78, 78 n1).

Clearly, objections based on implausibility or referring to ideas such as that ‘rocks have feelings’ rely on misunderstandings or inaccuracies in the readings of the panpsychistic positions in question, which may in turn lead to the conclusion that panpsychism is implausible. In the example of ‘rocks have feelings’ the form of mentality assigned to entities other than humans is

⁸³ As previously mentioned in note 77, Skrbina and Griffin have listed a number of problems for panpsychism (Skrbina 2005, pp.264–265; Griffin 1998, pp.92–98). There may again be overlaps with the above list; but there are certainly also problems that have not been discussed here.

understood to be at least very close to human mentality, and thus such statements are used as ‘arguments’ to show how implausible the position of panpsychism actually is. It also seems that the statement that panpsychism is implausible is based on the metaphysical presuppositions of those making the claim. Certainly, if one is convinced that there is nothing more to matter than matter itself, then it is strange, and even *implausible*, to assign something mental to ‘matter’. But likewise, if one were convinced – as is Strawson, for example – that experience is fundamental, then it may be just as implausible to try to understand how experience can arise from non-experiential matter. In the light of this reasoning and the reasoning in chapter 3, it is hard to see why panpsychism should not at least be considered as a serious alternative to positions such as dualism, reductive physicalism, or emergence theories.

Objections (3) and (4) have both been discussed by Colin McGinn. He defends the position that the mind/body problem is ultimately a mystery (McGinn 1999). Basically, McGinn argues that humans do not have the cognitive capacities to solve the problem of consciousness. But the conclusion that consciousness is an unsolvable mystery for human minds is deeply unsatisfying, and it seems to me that *concluding* that something is a mystery is to abdicate from resolving the problem. To be sure, many things may be initially mysterious and may inspire human minds to investigate their mysteries. Also, it may be a humble and honest conclusion that a problem is a mystery *for me*. But that does not mean that there is *no* solution to the problem. Further, the idea of something being a mystery opens up the possibility of believing *anything* about that mystery. Also, since McGinn is a materialist himself (he uses the term ‘materialism’), the question may arise whether the presupposition of materialism leads to the conclusion that the mind/body problem is a mystery. This inability of materialism to solve the problem is, as should have become clear by now, one of the main problems with materialism, and thus one of the reasons that panpsychism should be (and has been) considered as an alternative in the first place. Furthermore, panpsychism is not contradicted by the conclusion that the mind/body problem is a mystery. For all we know, it could be a mystery irrespective of the kind of metaphysics one wishes to defend. In other words, the mind/body problem could indeed be a mystery, but panpsychism could nevertheless be the most reasonable position in relation to the problem. So I deem that claiming that the mind/body problem is a mystery – whether or not this is true – is not a direct argument against panpsychism.

Be that as it may, McGinn also briefly discusses the possibility of a panpsychist approach. More importantly, he regards panpsychism as an empty position that simply restates the problem of consciousness; and so he rejects this position (McGinn 1999, pp.95–101). McGinn is surely right in claiming that the fact that consciousness somehow arises from whatever

constitutes it is a truism. But he also understands the mental properties to be the mental properties of *matter* (McGinn 1999, p.99). However, the point is that the mental, as has been argued here, cannot arise from something different in kind; that whatever constitutes reality is ultimately *both* physical and mental. Also, as I understand it, panpsychism *does not* claim that, given panpsychism, the *process* of how human consciousness, for example, specifically comes into existence is suddenly explained. Obviously and importantly, scientific research on the human mind, such as that described in chapter 2, still has great value and significance for an adequate understanding of the human mind. It is the underlying *metaphysical* problem of how consciousness can arise that is addressed by panpsychism. Nevertheless, as shall become clear below, I agree that there are problems connected with panpsychism that may lead to the conclusion that panpsychism is not better than other positions such as reductive physicalism or dualism. This would not mean that it is an *empty* position; but it would mean that it offers no major advantages after all. I will return to this related line of reasoning in the final section of this chapter.

The previous objection that panpsychism is an empty position, that it does not really explain anything, leads to two other possible objections – namely, that panpsychism is not empirically testable, and that panpsychism violates the objectivity of science. Following a line of reasoning of Skrbina, it could be said that it is never actually possible to verify the inner experience of another being empirically, not even a human. Instead, in the case of humans, the fellow human infers that the mind of the other human is significantly similar to their own mind. In the case of most other beings, whether they are sentient or not, this is generally not the case (Skrbina 2005, pp.258–259). This has in fact already been mentioned in relation to the third advantage in the previous subsection. So, in the case of the micro-entities of nature, such inference is not possible; rather, one has to find arguments, such as those presented previously in chapter 3 and section 4.2.2.1, that support panpsychism – and these arguments are not based on empirical observations. But one could also reverse the problem and ask whether *any* metaphysical position is *empirically* testable. Skrbina thinks that this is not the case (Skrbina 2005, p.259). This, I deem, is a reasonable conclusion. Take, for example, the position of reductive physicalism. If – against panpsychism – the physical at any level would be entirely non-experiential, then I would have to test that there is in fact *no* experience at any level. But that does not seem to be possible. I may infer that, say, an electron does not have *human* inner experience; but is it possible to infer more than that?

With regard to the question about panpsychism being in conflict with science (5) and that it possibly even violates the objectivity of science, it is quite obvious, firstly, that results from the natural sciences are not contradicted by this metaphysical position. Research in science is done from a

third-person perspective, and thus cannot directly relate to the inner experience of any entity, be it at the micro- or macro-level. Consequently, the proposed *inner* experience is not in conflict with what science investigates from the outside. Also, panpsychism does not question the importance and value of scientific research on the human mind for an understanding of it. But perhaps it could be claimed that the objectivity of science is violated. Here Griffin emphasises that, if ‘objectivity’ is understood in terms of method and epistemology, which I suggest it should primarily be, then there is no problem (Griffin 1998, pp.97–98). For example, in physics a researcher may safely assume in her *method* that an electron is devoid of experience. But if she assumes that the electron is devoid of all experience on an *ontological* level, then she obviously makes a claim about her own ontology – namely, that she is a physicalist, for example. That would clearly stand in opposition to panpsychism; but the scientific method as such would not.

Also, as has been explicated in relation to advantage (5), the IIT theory of Tononi introduced in section 2.2.1 is actually supported by panpsychism. I will not repeat the argument from the previous section, but it should be emphasised that this clearly shows that panpsychism is not in conflict with natural science.

What remains is a more thorough discussion of what is presumably the most forceful objection to, and greatest problem for, panpsychism: the ‘combination problem’ (7). This problem has already been discussed above, indirectly and briefly, in relation to the objection based on the alleged implausibility of panpsychism. Historically, the combination problem – at least in a more contemporary version – can be traced back to William James. In the words of William Seager, it “[...] is the problem of explaining how the myriads elements of ‘atomic consciousness’ can be combined into a new, complex and rich consciousness such as that we possess” (Seager 1995, p.280; James 1890/1950, p.160).

Defenders of panpsychist positions have realised the above problem, that mentality, experience, and so on should, on the one hand, combine to form human consciousness, for example; but on the other hand, that mentality and experience should somehow be qualified in relation to other entities. Also, as stated earlier, they acknowledge that it would indeed be implausible to assign some *higher* level of feeling, experience, prehension, or whichever term is used to describe ‘rocks’, for example. In order to address these problems in a more accurate and presumably more adequate way, Griffin, for example, introduces the distinction between *compound* or *true individuals* and *aggregational societies* in his philosophy. Similar distinctions have also been made by Leibniz, Whitehead, and Hartshorne (Griffin 2001, pp.120–122; Whitehead 1978, pp.34–36). This distinction between compound individuals and aggregational societies is described as an *organisational duali-*

ty,⁸⁴ human beings and animals would be examples of the former, rocks of the latter. In the former, the entities give rise to dominant higher-level experiences, whereas in the latter there is no dominant experiencing, and the experiencing assigned to the forming fundamental entities is averaged out in the aggregational society⁸⁵ (Griffin 2001, pp.120–122; Griffin 1998, pp.185–187). This at least provides a possible approach to how to deal more specifically with the objection that ‘rocks have feelings’, and it also attempts to address the combination problem by suggesting that it is the organisational structure that determines whether or not something is a true individual.

But it should be noted that a problem arises *instead* about how to demarcate between these two forms of combining micro-entities. More specifically, how do we know whether something is a compound individual or an aggregational society? If this is dependent on the organisational structure itself, then it may be possible to return to, and seek help in, weaker forms of emergence theories, such as Deacon’s, that mainly focus on the dynamic organisation and interrelation in different levels of emergence without making ontological claims about the emergent properties. In other words, if panpsychism is combined, for example, with the account of emergence by Deacon, which does not (nor needs to) make any ontological presuppositions, and which has already been suggested, then it may be possible to defend panpsychism against the objection of the combination problem. For if it were possible to understand clearly and thoroughly how the most basic entities in a panpsychist approach *combine* to form either compound individuals or aggregational societies by combining a form of emergence with panpsychism, then we would most probably understand better how they combined to form the human consciousness or mind, with all its features.

But it is possible that the issues raised by the ‘combination problem’ lie deeper. According to William Seager, the combination problem seems to be analogous to the problem of how consciousness arises from matter in a physicalist setting. Seager directly suggests that there is an obvious parallel to the problem faced by reductive physicalists about how non-experiential matter generates consciousness, for example (Seager 1995, pp.280–281).

⁸⁴ In his discussion of the distinction between compound individuals and aggregational societies – using Griffin’s terminology – in process philosophy in the tradition of Hartshorne and Whitehead, Skrbina correctly observes this *organisational duality*. But he actually claims that “[...] process philosophy in fact advocates a dualistic theory of mind” and that Griffin “[...] attempts to downplay the distinction [...]” between experiencers and non-experiencers (Skrbina 2005, p.214). This, I believe, does not seem to be entirely correct, since the duality – as Griffin himself clearly states – is rooted in the organisational structure, and is *not* a duality based on ontological differences.

⁸⁵ Interestingly, the idea that the experiential properties of fundamental entities are averaged out in aggregational societies has a parallel in quantum mechanics, where effects on the microlevel are averaged out, resulting in the possibility of a description entirely based on mechanistic principles (Brüntrup 2011, p.51). But, arguing against this presumed analogy, there does not seem to be an obvious parallel in quantum physics to the forming of true individuals.

Chalmers also very clearly highlights this parallel by explicitly formulating an argument based on conceivability that formally resembles the ‘zombie argument’, cited earlier in section 3.2.4:

One way to pose the combination problem is in the form of a conceivability argument. [...] Here PP is the conjunction of all microphysical and microphenomenal truths about the world, and Q is macrophenomenal truth such as ‘Some macroscopic entity is conscious’.

- (1) $PP \& \sim Q$ is conceivable.
- (2) If $PP \& \sim Q$ is conceivable, it is possible.
- (3) If $PP \& \sim Q$ is metaphysically possible, constitutive panpsychism is false.

(4) Constitutive panpsychism is false.

Here premises (2) and (3) parallel the corresponding premises of the conceivability argument against materialism, and are supported by the same reasons. So the key premise here is premise (1). This premise asserts the conceivability of *panpsychist zombies*: beings that are physically and microphenomenally identical to us [...] without any macrophenomenal states. (Chalmers 2011, p.21)

The above argument seems to be forceful – possibly as forceful as the ‘traditional’ conceivability argument – and Chalmers continues in the same article with a discussion of justifications for the first premise, the zombie-premise, and also suggests possible forms of panpsychism that may render the problem less pressing. Discussing the combination problem in a general setting – not the specific formalisation of Chalmers – Griffin argues that, although the combination problem *may* render panpsychism, or in his terminology ‘panexperientialism’, *unintelligible*, it does not exclude the *possibility* that “[...] panexperientialism might provide an intelligible conception of an experiential part-whole relation” (Griffin 1998, p.94). Similarly to the suggestion made above, Griffin argues that, by applying the idea of emergence – presumably not strong emergence – different forms of organisation and interaction may produce different forms of functions. He also reasons that, given the experiential properties of entities at the micro-level, and given that these entities can form compound/true individuals at higher organisational levels, such individuals may have causal influence on the organisation as a whole. But since the entities at the micro-level already have mental properties, the causal influence at the higher level can also be regarded as at least partly mental (Griffin 1998, pp.186–190, 236–237).⁸⁶ Thus, as was

⁸⁶ It should be noted at this point that, although even in Griffin’s understanding one could talk of higher and lower levels, and thus of downward causation, this might actually be con-

stated earlier in section 4.2.2.1, Griffin solves the problem both of how higher-level consciousness arises and of how mental causation can possibly be understood by suggesting that it incorporates a form of emergence.

Another possibility to deal with the combination problem is simply to deny the problem, as Barbara Gail Montero does. She reasons, firstly, that panpsychism is certainly not in a worse situation than, for example, physicalism; both have to find a way to make the combination of micro-properties into macro-mentality intelligible, regardless whether the micro-properties are mental, physical, or both; or, as she writes, she fails “[...] to see why there should be a special problem – the combination problem – that is supposed to make panpsychism impossible” (Montero 2017, p.224). She also thinks that panpsychism is favoured, since “[...] the insertion of mentality at the fundamental level makes it easier to see how the fundamental level could necessitate consciousness” (Montero 2017, p.227).

There are certainly more solutions to the combination problem, and more ways to address it, that are not discussed here.⁸⁷ Nevertheless, the main observation to be made here, I deem, is that Chalmers’ reasoning in his conceivability argument shows that the question of how higher-level experience or mentality – and thus human consciousness with all its features – arises, *returns* in different forms, *even* if the underlying metaphysics are modified. This appears to be both highly interesting and perhaps even surprising. Recall one of the major problems for reductive physicalism in chapter 3: the problem of how, in reductive physicalism, mentality, qualitiveness, and ultimately consciousness arises merely from matter. But in panpsychism there is also the problem of how mentality, qualitiveness, and ultimately consciousness on a higher level arises by combining experiential entities at a lower level. So the question, obviously, is whether panpsychism – even in combination with a process approach, as in the philosophy of Griffin – is actually a better alternative. Philip Goff reasons in a similar direction, and concludes that, although panpsychism may not be a worse alternative, it is nevertheless not better than physicalism (Goff 2009). Also, if process panpsychism is further combined with a form of emergence – following Deacon’s account, for example – then this combined position still may inherit the problems within emergence theory, as already has been suggested, for example, at the end of section 4.2.2.1. So the combination problem does indeed pose the strongest objection to panpsychism. As has been briefly shown, the first six objections can be handled quite easily, whereas the combination problem suggests that at least one central problem discussed in rela-

fusing, since ‘downward’ may easily be associated with a higher *distinct* level as in dualism, for example .

⁸⁷ In the recently published volume *Panpsychism* (Brüntrup and Jaskolla, eds), a number of approaches can be found to addressing the combination problem, the approach by Montero being one of them (Brüntrup & Jaskolla 2017).

tion to reductive physicalism and dualism seems to return. This leads directly to the final discussion of this chapter.

4.3. Summary and discussion: Where does this lead to?

Before discussing and concluding which alternative is more plausible and reasonable, and can thus be proposed, a summary of the previous sections amounts to the following: Emergence theory initially seems to be a promising approach. As stated at the end of section 3.2.4, it is also typically a central concept in many non-reductive physicalist approaches. Emergence is often understood as either *weak* or *strong*. Weak emergence encounters the problem of ‘collapsing’ into reductive physicalism; yet there are approaches, such as Deacon’s, that focus on the descriptive aspects, and thus may be useful independently of the metaphysics they support. Strong emergence encounters the problem of mental or downward causation (Kim’s argument), and has been criticised for being ‘brute’ in the sense that the connection between the underlying phenomena and the emergent properties cannot be explained, even in principle. The joint networked causation suggested by Peacocke, and in reply to Kim’s argument, is more suitable for capturing causal processes in the human mind, and leads to the question whether a process approach may be preferable. Yet it is unclear whether joint networked causation may be reducible after all to linear causation. The question of how the CCP may be understood has been raised, and if it is *not* understood as a metaphysical principle, then this would at least *allow* for strong emergence. Still, given the strong objections by Strawson and Brüntrup discussed in section 4.1.2, strong emergence turns out to be the less reasonable position. Process philosophy captures the dynamics of interrelatedness and interdependence observed in nature in general, and more specifically in the human brain. In fact, one of the consequences of a process approach obviously is to understand even higher-level phenomena such as human consciousness as processes. On the ontological level, the question of how mentality at a higher level arises from lower-level entities can be approached by panpsychism, which promises a better solution than does reductive physicalism. In combination with a form of weak emergence and a process philosophical approach, panpsychism – in the version of Griffin’s panexperientialism, for example – offers a possible solution to both how consciousness arises from lower-level phenomena and how mental causation may be understood. Yet the combination problem in panpsychism in general, and thus even in Griffin’s approach, despite his attempt to defend his position against this problem with reference to the concept of organisational duality and a form of weak emergence, highlights that even panpsychism encounters a problem very similar to the problem raised in the ‘conceivability argument’

for reductive physicalism (section 3.2.4). Moreover, if panpsychism is combined with emergence, then it presumably inherits the problems discussed in relation to different forms of emergence. Thus, if panpsychism is combined with a stronger form of emergence, then – as Hassel Mørch points out – this form of “emergent panpsychism” would need an argument against emergent properties as brute facts (Hassel Mørch 2014, pp.41–42).

Recall also that one of the conclusions in chapter 3 was that it would be reasonable to search for alternatives to reductive physicalism and dualism, given the problems they face; and that this alternative should incorporate the advantages and avoid the weaknesses of either position. So, if panpsychism and emergence-theories face similar problems to those of reductive physicalism and dualism, it appears reasonable briefly to include these positions once again in the present discussion. Recalling some questions discussed in chapter 3, and given the observation that the problems encountered here do not seem to arise specifically in relation to a process view, the problems for reductive physicalism, dualism, panpsychism, and emergence can be summarised as follows:

- (1) Reductive physicalism faces the conceivability argument, which questions how mind, consciousness, or the experiential arises from matter. The ontological gap between mind and matter remains.
- (2) Panpsychism faces a similar problem, the combination problem, which asks how the mind, consciousness, or the experiential is combined from fundamental entities. But there is no ontological gap.
- (3) Strong emergence has to accept the emergent properties such as the mind, consciousness, or the experiential as ‘brute facts’, since *in principle* they are unpredictable and irreducible; *and* it has to face the question of how these properties can have causal influence on the underlying physical world. But it *does not* have to explain causation from the physical to the emergent (downward causation and emergent properties as *facta bruta*).
- (4) Weak emergence avoids the problems of strong emergence at the risk of collapsing into reductive physicalism. Thus, as in the case of reductive physicalism, the ontological gap between mind and matter remains.
- (5) Dualism accepts the mind or consciousness as ontologically different; they are in a sense ‘brute facts’ and, similarly to strong emergence, dualism still faces the question of how these can have causal influence on the physical world. It must also explain *how* the physical has causal effect on the mental, despite the obvious correlation between the physical and the mental (interaction including downward causation).

Certainly, as has also become clear from Chalmers' argument and from Seager's comment, there is an apparent parallel between the problems for reductive physicalism and panpsychism. Chalmers realises that this might pose a problem for panpsychism, but points out in relation to physicalism that panpsychism does better "[...] in *at least one respect*: it accommodates the very existence of experience" (Chalmers 2017a, p.39; my emphasis). Similarly, in replying to critics of his 'Realistic Monism', Strawson writes that "[...] unintelligible experiential-from-experiential emergence is not nearly as bad as unintelligible experiential-from-non-experiential emergence" (Strawson 2006a, p.250). Chalmers goes one step further, indirectly suggesting that dualism might have an advantage, since it does not have to deal with the combination problem (Chalmers 2011, p.24). But it does have to deal with the interaction problem, which in a sense is two-fold: both downward causation and *how* the physical can have causal effect on the mental have to be made intelligible. So, as Chalmers points out, although the combination problem or the problem of how the mental is generated does not arise in dualism, one still has a problem with the relation between the mind and the physical, as has been elaborated in section 3.2.2, and which in this case can be regarded as *two-fold*. Strong emergence with unpredictability and irreducibility *in principle* ends up very close to dualism. It also has to deal with downward causation; but ideas from emergence – at least on the descriptive level – seem to be helpful for how the mental may arise from the physical. Yet, given the unpredictability of emergent properties, one still has to accept them as 'facts', which seems to be close to accepting that emergent properties such as mental properties are ontologically separate – as in dualism. Nevertheless, strong emergence still seems to have a slight advantage over dualism, since it 'only' has to focus on downward causation. If downward causation could be made intelligible, then the emergent properties might not have to be understood as brute. Weak emergence faces the problem of collapsing into reductive physicalism, but may still be useful at the level of description.

So, given the above summary, and even after reconsidering dualism and reductive physicalism due to the problems that appeared in the analysis of panpsychism and emergence theories – and thus even process panpsychism – there is still a slight advantage for the position of panpsychism, and even for emergence in general, compared with the two initial positions of reductive physicalism and dualism, to which they were supposed to be alternatives. Also, the combination problem may be avoided if combination can be made intelligible. In section 4.2.2.1 it was suggested that panpsychism can be combined not only with a process approach, but also with an account of emergence that is independent of metaphysical pre-suppositions, as Deacon's is, for example. But would not such *emergent process panpsychism*, as has been pointed out here and argued for by Hassel

Mørch and Brüntrup, inherit the problems of emergence (Hassel Mørch 2014, pp.39–52; Brüntrup 2017, pp.64–65)? Indeed, I believe that this would be the case. A combination with strong emergence would have to deal with the problems discussed in relation to strong emergence, such as the problem of emergent properties being brute. A combination with weak emergence would inherit the threat that weak emergence might collapse into a reductionist approach. Hassel Mørch goes as far as suspecting “[...] that constitutive panpsychism cannot avoid its combination problem because it preserves too many features of physicalism – not only monism but also reductionism” (Hassel Mørch 2014, p.142). If she is correct in her suspicion, and if the combination of weak emergence and panpsychism amounts to a form of constitutive panpsychism, then there would still be a reductionist claim against even this form of emergent panpsychism. But this is only a problem if, as Hassel Mørch does, one wishes to avoid *any* form of reductionism.

It has also been argued that an account like Deacon’s, which captures the descriptive features of emergence without making the claims of strong emergence, may indeed be a middle way between strong and weak emergence; thus, presumably, the problem posed by Hassel Mørch may not be so pressing. Also, Deacon’s account adds a temporal aspect to emergence, which at least points in the direction that process philosophy should be favoured (see section 4.1.1 and Deacon’s third-order emergence). Indeed, Brüntrup thinks that such temporal dynamics lead to a “causal process-oriented metaphysics” as, for example, in Whitehead’s philosophy (Brüntrup 2017, pp.65–66), and presumably also in accounts such as that of Griffin, discussed here. Like Griffin, Brüntrup concludes that the emergent properties will have new causal powers that go beyond a mere summation of the causal powers of the underlying entities (Brüntrup 2017, p.66). So, apart from the observation that a process approach already captures the interrelatedness and interdependency of the human mind at an ontological level, this would further strengthen the conclusion that a process view is preferable. Given the type of emergence proposed by Deacon and a process account: on the one hand, the problems with strong emergence are avoided as such; and on the other hand, the causal powers would still be more than the mere sum of the causal powers of the micro-entities. Indeed, I deem that the combination, in accordance with compound or true individuals as formed in Griffin’s panexperientialism, should not be understood as a mere summing up of powers and properties, but rather as a fusion. So a position combining Deacon’s emergence and process panpsychism, apart from the process approach, seems to be close to the form of emergent panpsychism suggested and argued for by Hassel Mørch (Hassel Mørch 2014, pp.188–203). But, given Chalmers’ definition of constitutive panpsychism as “[...] the thesis that macrophenomenal truths are (wholly or partially) grounded in microphenomenal truths” (Chalmers 2017b, p.181), this form of panpsychism would

still be constitutive, since the macrophenomenal truths still partially are grounded in microphenomenal truths; whereas Hassel Mørch regards her position as non-constitutive panpsychism (Hassel Mørch 2014, pp.39–40).

Once more, in summary, the process approach suggested here has the benefit of capturing the dynamics in research both about the mind and about phenomena in nature in general, which would amount to a slight advantage, based on its relation to empirical research; and, according to both Griffin and Brüntrup, it would also have the advantage of granting causal powers to macro-mentality causal powers (as in compound individuals) (Griffin 1998, pp.185–188). Also, the advantage of dualism referred to in section 3.2.1. – that of avoiding the explanatory difficulties in understanding mental phenomena in terms of the physical – would be captured in a process panpsychist setting. If, furthermore, a process approach were to be combined with a form of emergence similar to Deacon’s (briefly described at the beginning of this chapter), then there would be further support from empirical research, since his form of emergence successfully describes many dynamic processes in nature. One of the strengths of reductive physicalism as highlighted in chapter 3 was that it is monistic. Both panpsychism and process philosophy in the versions presented above are monistic. Together with the observation that they both accommodate “[...] the very existence of experience” (Chalmers 2017a, p.39), this further supports a ‘process panpsychistic’ approach. Moreover, as pointed out in section 4.2.1, not only would Dehaene’s and Tononi’s models of consciousness fit into Peacocke’s understanding of joint networked causation, but also Rosenberg suggests, from a panpsychist viewpoint, that these theories could be integrated into a ‘synoptic view’ of consciousness (Rosenberg 2017, pp.166–172) – thus again emphasising that a panpsychist metaphysics does not stand in opposition to scientific research. Similarly, Nathaniel Barrett claims that “[...] process philosophy [Barrett usually refers to ‘process panpsychism’ in this article] connects especially well with those neuroscientists who favor dynamic population theories of conscious neural activity” (Barrett 2009, p.203; my comment), and names amongst others the theory of Tononi referred to earlier in this thesis. Peacocke’s joint networked causation, which could be used as a methodological approach to mental causation, with its focus on interrelatedness and interconnectivity, could also easily be incorporated into a process approach. Still, I suggest that the conclusion in favour of a process approach is slightly more tentative, even though there is clearly a historical and conceptual closeness between the positions of panpsychism and process philosophy.

Taken together so far, a ‘process panpsychism’ combined with emergence in a version similar to Deacon’s is the most promising approach. I will henceforth call this ‘emergent process panpsychism’. The details will certainly need to be spelled out in the future – or, as Philip Goff writes: “It’s

high time we started working out the details” (Goff 2017, p.300). Possibly understanding the CCP as a methodological principle would grant some advantages, especially in relation to strong emergence. Also, one should keep in mind that such an understanding may have some particular significance for the discussion of divine action. Moreover, it should be noted here that the position of process panpsychism – be it in combination with emergence or not – could indeed be regarded as close, or at least closer, to an idealistic position. It should be the case in panpsychism, after all, that the focus on the mind or the mental should be as important as on the focus on the physical.⁸⁸ This is especially noteworthy, since the choice at the beginning of the philosophical analysis in chapter 3 was not to discuss idealism. One question to be discussed in the next chapter is how this position will affect the problem of free will. The other question – to be discussed in chapter 6 – is the relationship of this position to the theistic worldview depicted in section 1.4.

⁸⁸ The philosophical analysis of conceptions of God by T.L.S. Sprigge, for example, acknowledges the importance and strength of a panpsychist approach, but concludes that a form of ‘pantheistic idealism’ would be preferable (Sprigge 2006, chaps.8–10).

5. Determinism, indeterminism, and free will

The previous chapters have suggested the following: It has become clear from chapter 2 that the *scientific* results from brain research and cognitive science about free will, agency, and decision-making will be relevant to an adequate understanding of free will; and recalling those results suggest that they support at least the position of neural determinism, and that they show that human actions can sometimes be predicted, are often initiated unconsciously, and thus that humans are sometimes deceived in their feeling of agency. Chapter 3 has motivated the search for alternative positions to those of reductive physicalism and dualism. In this context, the problem of mental and/or downward causation and of attempts to understand how this notion can be construed – if at all – were discussed in chapter 4. That chapter led to the suggestion that process panpsychism in combination with a form of emergence similar to the emergence suggested by Deacon is the most reasonable approach to the mind/body problem. The main focus, though, is on panpsychism, as the other conclusions about Deacon's emergence and process philosophy were slightly more tentative. This emergent process panpsychism also provides a more promising approach to the question of mental causation. The possibility of understanding the CCP as a methodological principle rather than a metaphysical one was also suggested.

This chapter will discuss the consequences of the proposed emergent process panpsychism for the problem of free will and for concepts closely related to free will, and will present a sketch of how to understand free will. As has been briefly argued in the introduction (section 1.3.2), the problem of free will can be regarded – and thus also treated – as a sub-question within the philosophy of mind. Therefore, the understanding of consciousness and self-consciousness proposed here may have consequences for how to understand free will and related concepts such as decision-making. This will lead to some novel and promising approaches to questions in the free will debate.

In order to achieve the above aim, the outline of this chapter will be as follows: Firstly, I will briefly present some central ideas about determinism and indeterminism. Secondly, some standard concepts, arguments, and problems in the free will debate will be presented, giving an overview of the present debate. Thirdly, I will discuss the scientific results about decision-making presented in chapter 2, the standard problems, and relate them to the position proposed at the end of chapter 4. Finally, I will tentatively suggest

how free will should be understood, given the results in this chapter and the proposed emergent process panpsychism. It should be kept in mind that the results of this chapter will finally have to be related in the remaining chapters to the *theistic worldview* introduced in chapter 1.

5.1 Some central and relevant ideas about determinism and indeterminism

The concepts of determinism and indeterminism are both closely related and often used in the contemporary free will debate. This section will present some important ideas about these concepts, discuss them briefly, and argue that indeterminism is slightly more plausible.

Determinism could be defined very simply as the past uniquely determining the future, thus expressing the view that the future is fixed (van Inwagen 1983, p.2). This description seems to suggest that, since the future is fixed, we do not have free will in the sense of having a choice. Determinism is often also discussed in relation to causality. In a more common everyday sense, it would be possible to think that ‘all present events are caused by past events’. It is not clear whether this proposition leads directly to determinism. Instead, it seems to resemble a – presumably weak and unspecified – version of the CCP. Anyhow, Peter van Inwagen remarks that this principle – in his terminology the ‘principle of universal causation’ – leads to determinism only under certain conditions. He identifies these conditions as follows:

- (1) if an event [...] has a cause, then its cause is always itself an event (or what have you) and never a substance or continuant such as a man;
- (2) if an event (or what have you) *A* was the cause of an event *B*, then it follows, given that *A* happened and given the laws of nature, that *A* ‘causally necessitated’ *B*, that *B* could not have failed to happen;
- (3) every chain of causes that has no earliest member is such that, for every time *t*, some event in that chain happens earlier than *t* (van Inwagen 1983, p.4).

Although these conditions seem reasonable, they still are necessary to deduce determinism from the ‘principle of universal causation’ and all of them can be, and have been, questioned by philosophers such as van Inwagen himself (van Inwagen 1983, pp.3–5). Nevertheless, a remark on the first two conditions seems in order. The first condition clearly captures the idea that agents causing actions does not necessarily contradict the idea of every event having a cause; and the second at least highlights that it would be possible, for example, to have some probabilistic causes. But what certainly becomes

clear is that causation, and thus the CCP, are closely related to ideas about determinism, but that they should nevertheless not be equated.⁸⁹

Bertrand Russell (1872-1970), in his essay *On the Notion of Cause*, argues that “same cause, same effect” should be replaced by “sameness of relations”. He also suggests that determinism should be defined in more technical and mathematical terms, capturing the idea in the above simple definition of determinism that it should be possible to infer future events from past events. Thus, in plain terms, Russell understands “deterministic systems” as follows: Within a certain time interval t , a system is deterministic if it is possible to establish a functional relationship between certain data at certain times and any time within this time interval (Russell 1913, p.18).⁹⁰ If this view is extended to cover the entire time line, then this view amounts to what Pierre Simon Laplace (1749-1827) says in the famous introduction to his book, *A Philosophical Essay on Probabilities*. He is convinced that, if an intellect at a certain moment knew all forces, all positions, all states of the universe, than this intellect would see both the whole past and the future before its eyes. The future would be *determined* by the past (Laplace 1932, p.2). The analytical (and at times mathematical) approach of Russell to the question of causality and determinism leads directly to more contemporary scientific, mathematical, and philosophical thinking. Consequently, the powerful mathematical approaches to systems in general, and more specifically to deterministic systems in the natural sciences, are clearly based on the same idea as the above definition given by Bertrand Russell.⁹¹ Interestingly, the development of mathematical tools during the 20th century has also shown that *any probabilistic* description of a system *can principally be embedded in a – more complex – deterministic system* (Bishop 2002, p.17; At-

⁸⁹ Geert Keil (1963-) discusses the close connection of causality to determinism, and concludes that, although there is a relationship between the concepts, and that the principle ‘every event has a cause’ is sometimes used synonymously with determinism, this connection is nevertheless not unproblematic. For example, according to him, the observation that causes need not be deterministic is important for a proponent of libertarianism (Keil 2013, pp.42–45).

⁹⁰ Russell originally defined this in more technical terms: “A system is said to be ‘deterministic’ when, given certain data, e_1, e_2, \dots, e_n at times t_1, t_2, \dots, t_n respectively, concerning this system, if E_t is the state of the system at any time t , there is a functional relation of the form $E_t = f(e_1, t_1, e_2, t_2, \dots, e_n, t_n, t)$. The system will be ‘deterministic throughout a given period’ if t , in the above formula, may be any time within that period, though outside that period the formula may be no longer true. If the universe, as a whole, is such a system, determinism is true of the universe; if not, not” (Russell 1913, p.18).

⁹¹ For example, Robert Bishop states three properties a system needs to fulfill if it is to be called deterministic. It must be possible to describe the system with an algorithm based on differential equations; these must evolve *uniquely*; and it must be possible to determine values with arbitrary accuracy (Bishop 2002, p.7). Gregor Nickel also uses a mathematical definition of determinism based on the concept of phase space. In this respect his description is very similar to Bishop’s definition. Such mathematical concepts are frequently used in natural science, and mean in plain words that every possible state of a system is represented by a specific ‘point’ in an abstract – possibly multi-dimensional – space (Nickel 2002, pp.35–41).

manspacher 2002, p.67; Gustafson 2002, pp.117–125). In other words, a finite dataset can always be modeled by a deterministic system.

Some interesting observations, especially in relation to the more scientifically and mathematically oriented accounts of determinism, can be made. Firstly, one important distinction that is often made is between the difference between what is *ontological* and what is *epistemological*. Atmanspacher notices that this distinction between ontological and epistemological⁹² in modern science – especially in physics – was originally motivated by quantum physics. A similar situation arose in connection to chaos theory; the equations used to describe non-linear dynamic systems are deterministic, but the observable behaviour is not – that is, such systems are ontologically determined, but epistemically non-determined. Thus Atmanspacher thinks that determinism is often understood as ontological, whereas determinability and the often-observed indeterminism are epistemological (Atmanspacher 2002, p.63). He thinks that mixing up what is ontological with what is epistemological must be regarded as a serious fallacy (Atmanspacher 2002, p.50). What is important to realise here is that it is the question whether the world is determined or not at the ontological level that is important in relation to free will. Also – as mentioned above – probabilistic schemes can be embedded in more complex deterministic schemes; so indeterminism described by *probabilities* does not add anything new, compared with a ‘purely’ deterministic understanding of a system (Dieks 2002, p.216).

But what is the relationship between the modern mathematical descriptions of determinism and the distinction between ontology and epistemology? Assuming some form of *hidden determinism* in quantum physics – as, for example, the deBroglie-Bohm theory suggests – is similar in principle to the above-stated idea of embedding a probabilistic system in a more complex deterministic system. But since it is *hidden*, it does not provide information, whether the system *is* deterministic metaphysically speaking, unless of course the description itself is taken as the *reality* to be described, which would lead to a form of scientific realism. Nevertheless, it certainly is correct to point out that the indeterminism produced by quantum physical events *could* likewise be interpreted as merely epistemic, and thus does not have significance for free will. In other words, it cannot ultimately be decided whether or not indeterminism in quantum physics should in fact be interpreted as ontological indeterminism. Further, if it is possible to embed a stochastic system in a – more complex – deterministic system, at least the indeterminism produced by this stochastic system does not necessarily seem to be ontological, since it is *possible* to describe it by deterministic equations. So the modern indeterministic descriptions of physical processes do not *decide* the question whether or not indeterminism is *ontological*. Also, mathematical models of processes in decision-making may result in probabilities that,

⁹² Atmanspacher uses the terms *ontic* and *epistemic*.

presumably, are of great *practical* value; but it is far from clear whether any conclusions can be reached about the metaphysical truth of indeterminism merely on the grounds that probabilities can be established. Nevertheless, one should likewise be careful about concluding that, just because the *truth* of indeterminism cannot be established, consequently determinism must be true.

It certainly is possible to *claim* that systems described by deterministic equations are deterministic on the level of ontology. (Gustafson 2002, pp.143–144; Dieks 2002, p.212) But this kind of claim, one may suspect, is based on the presupposition not only of metaphysical realism, but also of scientific realism in the sense that the (deterministic) equations and laws used in science are assumed to describe an ontological reality. Actually, one may suspect that scientific realism may be more deeply rooted in everyday thinking than we usually admit. For example, questions directed to the ‘standard model of particle physics’ such as “Why do exactly four fundamental forces exist?”, are not uncommon, and they consciously or unconsciously suggest that the theory not only *describes* a part of reality but actually *should* also answer questions about how things *are* (in themselves) and *why*. Certainly, *if* scientific realism is assumed to be true, *then* the possibility of describing systems in terms of deterministic equations *would* indeed say something about reality. But scientific realism, or even metaphysical realism, is not the only possible nor most reasonable position by far. On the contrary: in practical applications all equations are *idealised* descriptions of the empirical data we observe. Hume concludes that the laws of nature are derived from experience, which obviously may be prone to error; and Russell states that they *never* describe exactly what is happening; there is always a certain vagueness (Russell 1913, p.8). Does this vagueness not mean that the mathematical descriptions should *not* be taken as descriptions of an ontological reality? Here is an example: consider the simple case of the mathematical description of a pendulum: together with the initial and boundary conditions, the mathematical description ‘determines’ all future states of the system; but this is only the case if the system is ideal and isolated, which it is not.⁹³ So the vagueness ‘indicates’ that the mathematical description cannot describe the system perfectly. Obviously, nature could still be strictly determined in the background – determinism could be hidden; but we would not *know* this for certain. Assuming that mathematical descriptions reflect an ontological reality is a metaphysical assumption, and thus, once it is *assumed* that *there*

⁹³ In his book *Laws, Minds and Free Will*, Steven Horst gives a much more detailed discussion of the problem hinted here. He argues for a form of cognitive pluralism based on the rejection of the distinction between strict laws and *ceteris paribus* laws, finally attempting to resolve the tension between free will and scientific accounts of how the brain works (Horst 2011). For this comment on cognitive pluralism, I am indebted to Aku Visala, University of Helsinki, who presented a paper on the topic at the ‘Agora Conference on Free Will’ in Siguna, Sweden in 2017.

is a mathematical description that correctly describes *all* states of the universe, the universe should be understood as determined. But *assuming* something like a ‘world formula’ is a statement about how the world *is* and not a conclusion proving or disproving determinism or indeterminism at the level of ontology.

Returning to Falkenburg’s ideas referred to section 4.1.2.4: being a physicist herself, she searches for support for her ideas within natural science, especially physics. She observes that explanations by deterministic laws in physics are time-symmetrical, whereas ‘cause and effect’ is not (Falkenburg 2012, p.218). This asymmetry of time also appears in relation to indeterminism. In the past one would talk about what *might* have happened, but there is only one *actual* past; in the future one would talk about possibilities that actually could happen. The same asymmetry also reappears in a commonsense understanding of causality; it does not seem to be possible for a *future* event to cause something in the past.⁹⁴ Global determinism, both in non-mathematical formulations and in mathematical ones, but – especially in mathematical descriptions such as those introduced by Laplace or Russell – on the contrary actually treat the future and the past alike; and in order to give a ‘correct’ description of a system, the asymmetry is usually ‘imported’ via the initial and boundary conditions. Certain instances of time are usually not favoured unless some boundary conditions are specified to do so. In the case of non-mathematical descriptions – such as van Inwagen’s version: “[...] the thesis that there is at any instant exactly one possible future” (van Inwagen 1983, p.3) – all future states are fixed, which would, at least in the sense of being *fixed*, mean that the world would be *symmetrical* in relation to time. Of course, this is not surprising, since it seems to be precisely the meaning of determinism that everything is fixed, determined. So determinism and indeterminism are not only opposites by definition: they also oppose each other with respect to their relation to time. Determinism is essentially symmetrical with respect to time, whereas indeterminism is not; and determinism should, within what is epistemically possible, at least allow for both *prediction* and *retrodiction*.

This discrepancy between the symmetry of time in determinism and our everyday experience of the asymmetry of time can in fact be developed into an argument against determinism. Loosely based on ideas of Kant, Falkenburg argues as follows. Since determinism as described above is symmetrical with respect to time, it seems at least implausible that determin-

⁹⁴ In a discussion of ‘Ockham’s way out’, Alvin Plantinga modifies the notion of ‘accidental necessity’ such that counterfactual power over God’s past belief is at least possible. This could be interpreted as allowing for something in the future to affect the past (Plantinga 1986). But discussing this rather unusual suggestion would be beyond the scope of this thesis. Likewise, there are speculative suggestions that it may be possible to cause events in the past based on modern physics. Again, discussing the possibility of, for example, backwards causation by speculating in the possibility of time-travel certainly is not the aim of this thesis.

ism – being time-symmetrical – can be inferred from the principle of causation, which is time-asymmetrical. Or, to put it in other words, are we not actually missing an important aspect of reality if we attempt to understand it deterministically (Falkenburg 2012, p.218)?⁹⁵ Thus determinism does not in fact account for this important aspect of reality, and might even be false.

But apart from the previously presented ideas, which are more closely related to science and the philosophy of science, other arguments against determinism can be found. One such reasoning against determinism, based on ideas from epistemology, has recently been explicated by philosopher of religion Richard Swinburne. A brief sketch of his argument is as follows: Firstly, he defines ‘physical determinism’ such that “[...] every event has a physical event as its necessary and sufficient cause [...]” (Swinburne 2015, p.45).⁹⁶ Next he argues that, if epiphenomenalism, understood as the doctrine that “[...] conscious events never cause physical events”, is implausible, then so is physical determinism (Swinburne 2015, p.45). He then elaborates that “[...] there could not be a justified belief in a physical theory which entailed epiphenomenalism” (Swinburne 2015, pp.51–56). Here his idea is that, in order to justify epiphenomenalism, the epiphenomenal conscious events must be experienced, recalled, or testified about. But if one were to trust experiences, memories, or testimonies justifying epiphenomenalism, then – given epiphenomenalism – these experiences, memories, or testimonies must be caused by brain events. But, according to an epistemic assumption made by Swinburne, a theory may only make true predictions based on experience, memory, or testimony. So if epiphenomenalism were true as a theory and thus able to make certain predictions, then these should be based on experience, memory, or testimony – *contrary* to what epiphenomenalism claims (Swinburne 2015, pp.51–56). He transfers this reasoning to determinism, and argues that “[...] if the deterministic physical theory were true, the scientist

⁹⁵ Bishop and Atmanspacher follow a slightly different line of argument, reasoning that, since there is a discrepancy between time-symmetry in physics and causality, they must refer to different levels of description, thus leading to some basic inconsistencies in relation to the CCP (Bishop & Atmanspacher 2011, pp.103–104).

Falkenburg also points out that neither are all processes in physics reversible, nor are all theories deterministic. With examples from thermodynamics and quantum physics in mind, she concludes that physics does not provide us with a clear concept of causality. She suggests that present-day physics offers us, and uses, at least *four* different concepts of causality: (1) the ‘traditional’ principle of causality; (2) deterministic descriptions of processes connecting cause and effect by reversible laws, which do not explain the time line; (3) irreversible processes, which only are probabilistically determined and; (4) Einstein-causality, by which only events within the ‘light cone’ can be causally connected. Her conclusion is that, if we hope that physics might be better in providing a concept of causality, this leads only to disappointment (Falkenburg 2012, pp.276–282).

⁹⁶ It should be noted here that Swinburne defines determinism through causality, whereas the starting point in this chapter was determinism understood in terms of a fixed future. It has already been pointed out that – although related – these two understandings cannot be equated.

would not have been caused to give testimony by any conscious event [...]” (Swinburne 2015, p.58). Consequently, one may wonder how anyone could then be justified in believing or relying on any theory about physical determinism, rendering determinism implausible at the very least.⁹⁷

So where does this leave us? Although the mathematical tools used to describe nature, together with the possibility of embedding probabilistic systems in more complex deterministic systems, *seem* to suggest determinism, they only lead to a deterministic understanding under the *assumption* that they actually reflect an ontological reality. Of course, the same would hold for indeterminism; we seem to be simply unable to decide whether experienced indeterminism or determinism reflects an ontological reality. In both cases one would need to make further metaphysical assumptions. So it seems that it is not possible to know for sure whether *either* indeterminism *or* determinism is necessarily ontological. But the above-stated symmetry of determinism suggests that, at least in one respect, determinism does not adequately account for reality. Also, determinism could be rejected on the basis of epistemological reasons, as Swinburne has argued. Moreover, if it were correct that one of the consequences of determinism is the impossibility of free will, then this would be in conflict with one of our most basic intuitions. It would therefore be possible to argue that this basic intuition about the human experience of free will *should* actually be reflected in the metaphysical assumptions made, and that metaphysical assumptions contradicting this intuition should be rejected, or at least revised. Furthermore, another ‘basic commonsense’ intuition is that the future is undetermined. So if, as stated in section 1.3.2 in relation to commonsense intuitions, *all data* should be considered, not only conclusions and data from scientific reasoning (Nagel 2012, p.31), then the above intuitions would tip the scale slightly in favour of indeterminism. Taking into account such data and the above intuitions would also be supported by Swinburne’s ‘principle of credulity’, which claims that it is *prima facie* reasonable to believe that the world is the way we experience it (Swinburne 2004, p.303).⁹⁸ This would mean that the burden of proof would be placed on those who want to show that the future is in fact determined and that free will may in fact be an illusion. But, keeping *this* in mind,

⁹⁷ This line of reasoning reminds us strongly of John Hick’s argument in favour of free will and against determinism. The basic idea in Hick’s argument, and presumably even in Swinburne’s, can be traced to Epicurus (Hick 2010, pp.119–123).

⁹⁸ In detail, Swinburne writes describing ‘the principle of credulity’: “Having the experience of its seeming (epistemically) to you that I am here giving a lecture (that is, your seeming to hear me give a lecture) is good evidence for supposing that I am lecturing. So generally, contrary to the original philosophical claim, I suggest that it is a principle of rationality that (in the absence of special considerations), if it seems (epistemically) to a subject that x is present (and has some characteristic), then probably x is present (and has that characteristic); what one seems to perceive is probably so. And similarly I suggest that (in the absence of special considerations) apparent memory is to be trusted” (Swinburne 2004, p.303).

other approaches capturing such basic intuitions might become much more attractive.

Also, since it cannot be decided whether determinism is true at the level of ontology, some metaphysical assumptions have to be made. Here the results from chapter 4 suggest that emergent process panpsychism should be presupposed. This should be kept in mind until section 5.3, in which some possible consequences of this position will be discussed. Furthermore, keeping the discussion about the mathematical notions of determinism in mind, we may realise that our minds and our thinking may be formed and constructed by the assumptions of metaphysical and scientific realism and by the legacy of Laplace much more than we admit. Anyhow, although it cannot be decided on the basis of the above reasoning whether determinism or indeterminism is *true*, given the ideas from the asymmetry of time, Swinburne's reasoning based on epistemology, and the commonsense intuitions about indeterminism, indeterminism still seems to be slightly more preferable. Given the result from chapter 4 that the CCP should be understood as a *methodological* principle, determinism also cannot be deduced from this principle, as suggested at the beginning of this section. So, having discussed some basic ideas about determinism and indeterminism, and having argued that indeterminism is slightly more plausible, it is appropriate to turn now more specifically to some standard philosophical arguments related to the notion of free will before discussing how free will may be construed in an emergent process panpsychist setting.

5.2 The consequence argument, the basic argument, Frankfurt cases, and the mind argument

In this section, four standard arguments relevant to the philosophical free will debate will be presented. The discussion of these arguments will be brief, focusing on the central intuitions exemplified by these arguments. Standard examples for how to deal with the problems raised by these arguments will also be briefly introduced. The central intuitions of these arguments, and the response to each, will be the starting point for how emergent process panpsychism relates to the free will debate. But before more specifically turning to the arguments, some general concepts in the free will debate will be introduced.

To start with, any discussion of, and conclusions made about, free will obviously depend on what is meant by this term. As has been stated in section 1.3.2, the *starting point* in this thesis will be a libertarian account of free will in Robert Kane's version. This account has two main features: *alternative possibilities* and *ultimate responsibility*. This choice of starting point seems reasonable, since it captures commonsense intuitions about free

will. The former feature, *alternative possibilities*, relates to humans being able to choose, for example, whether to buy a red or a yellow car. The latter feature, *ultimate responsibility*, captures the idea of being the ‘origin’ or ‘source’ of an action: It was *not* my neighbour who decided for me to buy a yellow car, but I myself. The former feature is defined by Kane in these terms: an “[...] agent has *alternative possibilities* (or can do otherwise) with respect to A at t in the sense that at t, the agent *can* (has the *power* or *ability* to) do A and *can* (has the *power* or *ability* to) do otherwise” (Kane 1996, p.33). The latter feature is understood in these terms: “[...] to be *ultimately responsible* for an action, an agent must be responsible for anything that is a sufficient reason, cause or motive for the action’s occurring” (Kane 2005, p.121).⁹⁹ Furthermore, Kane introduces the concept of ‘self-forming actions’, which grant that at least at some point there were alternative possibilities, even in decisions made on the basis of a person’s conviction (Kane 1996, pp.75–78).¹⁰⁰ An example would be that a person may be convinced that one should not kill an animal for eating. Thus she has ‘no choice’ in relation to killing an animal for food *now*, but before and at the time of her ‘self-forming action’ related to this conviction, she *did* have a choice. Certainly, ‘self-forming actions’ capture yet another commonsense intuition, namely that humans make decisions in their lives that *form* their character and that possibly restrict and determine a great number of future decisions.

Recall that, in section 1.3.2, the following general and common categorisation of possible positions in relation to free will was introduced. In parallel with an analysis by Peter van Inwagen, the following four positions were identified (van Inwagen 2008): (1) *compatibilism*, the position that free will exists and is compatible with both determinism and indeterminism; (2) *hard determinism*, the position that free will does not exist and that determinism is true; (3) *libertarianism*, the position that free will exists and that determinism is false (sometimes also simply called *incompatibilism*); and (4) *hard incompatibilism*, the position that free will does not exist, since it is compatible with neither determinism nor indeterminism.¹⁰¹ Several well-

⁹⁹ A more technical and accurate definition can be found in *The Significance of Free Will* (Kane 1996, p.35).

¹⁰⁰ Kane gives a detailed and technically accurate definition of ‘self-forming actions’ (SFA) and their relation to ultimate responsibility and alternative possibilities in his major work, *The Significance of Free Will* (Kane 1996, pp-75-78).

¹⁰¹ Originally van Inwagen made the following distinction: “Determinism is the thesis that the past and the laws of nature together determine, at every moment, a unique future (The denial of determinism is indeterminism). Compatibilism is the thesis that determinism and the free-will thesis could both be true (And incompatibilism is the denial of compatibilism). Libertarianism is the conjunction of the free-will thesis and incompatibilism (Libertarianism thus entails indeterminism). Hard determinism is the conjunction of determinism and incompatibilism (Hard determinism thus entails the denial of the free-will thesis). Soft determinism is the conjunction of determinism and the free-will thesis (Soft determinism thus entails compatibilism)” (van Inwagen 2008, p.330). A similar distinction could be made based on a 2x2 matrix, with determinism and indeterminism as one entry and free will and no free will as the other

known philosophers, including Daniel Dennett, Peter van Inwagen, Robert Kane, and Harry G. Frankfurt (1929-), have defended some of the above positions, and the ideas they have proposed – obviously together with other voices – may be considered in the next section.

The above categorisation is clearly linked to how determinism and indeterminism are understood. In particular, the third position of libertarianism requires some form of indeterminism, and that determinism is false. At this point it should also be mentioned that the use of the term ‘indeterminism’ is rather new, and is strongly influenced by modern natural science, especially quantum physics, chaos theory, and probabilistic accounts of natural processes. Determinism is, as has become clear in the previous section, also closely related to causality, and thus presumably even to the CCP discussed in chapter 4.

In any case, the number of philosophical studies about free will and of arguments related to free will certainly is enormous. Thus it would be unreasonable to attempt to give an all-encompassing account of the debate throughout history and currently. Nevertheless, the discussion – in modern terms – can be very generally said to circle around the ideas about determinism and indeterminism and understandings of free will introduced above. Two of the more important arguments that are frequently discussed and referred to, and are specifically connected to determinism and indeterminism, are the ‘consequence argument’ and the ‘mind argument’. The former relates free will to determinism, while the latter establishes an argument from indeterminism. The ‘basic argument’ focuses on ultimate responsibility and the problem that any account of an action seems to end up in an infinite regress. ‘Frankfurt cases’ are usually discussed more specifically in relation to alternative possibilities and moral responsibility. So far, given the results of the previous section, there is also a slight inclination towards the position of rejecting determinism.

5.2.1 The consequence argument

In the 1980s, Peter van Inwagen, one of the better-known representatives of incompatibilism, discussed free will, and especially the relationship between determinism and free will, in detail and in terms of analytical philosophy

entry, resulting in four positions: compatibilism (the position both that determinism is true and that free-will exists), hard determinism (the position that free-will does not exist and that determinism is true), libertarianism (claiming that free will exists and that determinism is false), and hard incompatibilism (the position that neither does free-will exist nor is determinism true. Subsequently, in recent years the distinction in the main text has become more reasonable since, in the cases of hard incompatibilism and compatibilism, it is emphasised that these positions would require the truth of *neither* determinism *nor* indeterminism. Especially in relation to compatibilism, it is often argued that it is an advantage that compatibilist free will is compatible with *both* determinism *and* indeterminism (Fischer 2013, p.315).

(van Inwagen 1983). Based on an understanding of determinism as the thesis of the past determining a unique future (van Inwagen 2009, p.254; van Inwagen 1983, p.2; Timpe 2014, p.8), and free will understood as the *ability* to perform an action or to refrain from it, to choose a certain path of action¹⁰² (van Inwagen 1983; van Inwagen 2008), van Inwagen develops his argument for incompatibilism, commonly known as the ‘consequence argument’. In simpler terms, this argument is as follows:

If determinism is true, then our acts are the consequences of the laws of nature and events in the remote past. But it is not up to us what went on before we were born, and neither is it up to us what the laws of nature are. Therefore, the consequences of these things (including our present acts) are not up to us. (van Inwagen 1983, p.16)

Using formal logic, Robert Kane summarises the same argument in more technical terms, highlighting two important rules used in the argument.

(α) There is nothing anyone can do to change what *must* be the case (or what is necessarily so).

(β) If there is nothing anyone can do to change X, and nothing anyone can do to change the fact that Y is a necessary consequence of X, then there is nothing anyone can do to change Y either.

- (1) There is nothing we can do now to change the past.
- (2) There is nothing we can do now to change the laws of nature.
- (3) There is nothing we can do now to change the past and the laws of nature.
- (4) Our present actions are the necessary consequences of the past and the laws of nature. (Or, equivalently, it is necessary, that given the past and the laws of nature, our present actions occur.)
- (5) There is nothing we can do now to change the fact that our present actions are the necessary consequences of the past and the laws of nature.
- (6) There is nothing we can do now to change the fact that our present actions occur. (Kane 2005, pp.23–25)

¹⁰² It should be noted that, throughout his career, van Inwagen has become increasingly skeptical about the use of the term ‘free will’. According to him, until the mid 1980s it was quite clear, at least amongst analytical philosophers, what was meant by ‘free will’, namely the ability to do otherwise; but that this has become increasingly unclear. He has suggested that discussions about arguments such as the consequence argument can be formulated altogether *without* using the term ‘free will’. which would presumably result in greater conceptual clarity (van Inwagen 2017, chaps.13, 14).

This argument seems to be obvious both in the sense that it easily occurs to anyone wishing to argue for the incompatibility of determinism and free will, and it seems to be intuitively convincing. Van Inwagen himself suggests that, if one were to argue that the argument is false, then either determinism in the sense used in the argument must be false, (α), (β), ‘there is nothing we can do now to change the past’; or ‘there is nothing we can do now to change the laws of nature’ must be false (van Inwagen 1983, p.95). Also, one possible consequence of the argument could be to reason that free will should not be understood as the ability to refrain from an action or to do otherwise in the sense required by the argument. Thus anyone wishing to resolve the above argument would have at least the following possibilities: (a) show that there is something wrong with the argument, presumably with the inference rule (β); (b) revise the notion of free will; or (c) reject the presumption of determinism.

In accordance with the first possibility (a), various approaches in defence of a compatibilist position that attacks the inference rule (β) have been made (Speak 2011, pp.116–121; Pauen 2004, pp.143–145). As already mentioned, a detailed discussion of such approaches is beyond the scope of this thesis; but some standard lines of reasoning will be sketched. Here I shall briefly focus on some ideas that follow the possibility (b).

In the case of (b), there seem to be at least the following possibilities for a revision of free will. Given Kane’s understanding of free will, which was the starting point of this chapter, and the fact that the consequence argument involves alternative possibilities, one could, reject the possibility of alternative possibilities altogether, argue that free will does not heavily rely on the notion of alternative possibilities, revise the notion of alternative possibilities, or somehow combine the last two suggestions. Here a distinction introduced by Atle Ottesen Søvik (1977-) in relation to free will may be useful and illuminating. Søvik suggests that it would be useful to distinguish between *type* and *token* possibilities. In the case of Kane’s understanding of free will, for example, alternative possibilities are clearly understood as *token* possibilities, but it is obviously unclear whether it would not be possible to understand them as *type* possibilities (Søvik 2016, p.53,114).

In any case, Daniel Dennett approaches the problem from the direction of (b). Accepting determinism, he rejects the understanding of free will based on alternative possibilities. With reference specifically to Kane’s definition of alternative possibilities given above, he argues that it is not possible that a decision has more than one possibility at a fixed point of time t . If, for example, a subject were to choose between A and B within a given timespan, and the outcome of the choice would be hovering between A and B within this timespan due to the subject’s deliberation and consideration about how to decide, then the *actual* choice of the subject at time t would nevertheless end up at either A or B at time t , and not – as the definition of Kane requires

– at both A and B, allowing for ‘alternative possibilities’ precisely at the instance t (Dennett 2003, pp.117–122; Dennett 1984, pp.149–152). In fact, according to Dennett, it seems that alternative possibilities are only possible if a timespan instead of a point of time is considered for the deliberation process; but that would, of course, allow for both a deterministic and an indeterministic, probabilistic process within the timespan, leaving the question of the truth of determinism or indeterminism irrelevant. Dennett also argues that, although we often *do* consider whether we ‘could have done otherwise’, we usually *do not* consider the situation under *exactly* the same conditions, and – so Dennett argues – ‘alternative possibilities’ in the sense defined above is too narrow a concept (Dennett 1984, p.148; Dennett 2003, pp.78–82). Apparently Dennett reasons that alternative possibilities are *type* possibilities (Søvik 2016, p.53). In any case, Dennett instead understands free will as being ‘in control’ of one’s actions. We want “[...] the power to decide our courses of action, and to decide them wisely, in the light of our expectations and desires. We want to be in control of ourselves, and not under the control of others. We want to be agents, capable of initiating, and taking responsibility for, projects and deeds” (Dennett 1984, p.184). This, according to Dennett, is granted by both our evolutionary history and the social circumstances in which we grew up (Dennett 2003, pp.259–287). A similar understanding of free will as ‘being in control’ is advocated by Patricia Churchland, who explicates how ‘being in control’ could be observed by methods described in section 2.1 (Churchland 2006, pp.10–15).

Compatibilist Michael Pauen (1956-) also approaches the question of how free will – and thus the above problem – should be understood by introducing an understanding of free will that is slightly different from Kane’s. Contrasting free will with coercion and chance, he suggests two conditions that should be met if a person’s actions are to be regarded as free. The first is called ‘the principle of autonomy’, and can be roughly described as the principle that free actions should not happen by coercion. Here it is important to note that – although it often can be – coercion should not be equated with external circumstances. Internal coercive forces such as alcoholism or other compulsive forces must obviously be taken into account when considering the autonomy of a person.¹⁰³ The other condition is ‘the principle of the originator’. This principle focuses mainly on the aspect that free actions have to be ascribed to a person. If, for example, an action happened by chance, then its actual origin would not be ascribed to a person. Thus free actions should be distinguished from actions and events happening by chance. This would then form Pauen’s minimal conception of freedom (Pauen 2004, pp.59–65).

¹⁰³ Pauen’s qualification of what is coercive can be interpreted in parallel with Timpe’s understanding of ‘externally sufficient causes’. Such external causes only have to be “outside the agent’s volitional structure” (Timpe 2013, p.138–139,142). This would clearly be the case in the example of alcoholism given by Pauen.

One sufficient condition for both principles would then be self-determination in the sense that *the choice of an action can only be understood by relating to the acting agent herself*. This understanding of self-determination – to be referred to again later in this thesis – would guarantee both that an action performed by a person can be regarded as autonomous, and also that it would have its origin in that person. But self-determination is also necessary in meeting the principle of the originator, since one cannot assign actions to a person – the originator – if it were not the person *herself* who originally determined them (Pauen 2004, pp.64–65).

Although there are clear differences between Pauen’s and Kane’s understanding of free will, such as the condition in Kane’s alternative possibilities that these should be available for choice at a specific time *t*, there are also similarities. The principle of autonomy could be regarded as addressing the same intuition as alternative possibilities: both attempt to capture the idea that free will should have some freedom from coercion, whereas the principle of originator – which is apparently similar to Kane’s ultimate responsibility – addresses the question of *who* is responsible for the action in question. The ‘advantage’ of Pauen’s principles is that they make *weaker claims*, and thus allow for a broader variety of actions to be considered as free. Furthermore, he uses a form of ‘conditional analysis’ in his discussion of alternative possibilities, which, in the terminology of Søvik, I believe would amount to granting *type* but not *token* alternative possibilities (Pauen 2004, pp.110–136). So his principles, together with an understanding of alternative possibilities as type-possibilities, would avoid, for example, the problems connected to alternative possibilities discussed by Dennett.

Returning more specifically to the consequence argument, the following could be said in summary. The consequence argument appears to be correct at first glance, and its central intuition is that alternative possibilities are incompatible with determinism. Compatibilists have attempted to resolve the problem by modifying the above-mentioned rule of inference (β); but this is not discussed further here. Other efforts to rescue compatibilism are based on modifications of how to construe free will. Both of these efforts point in the direction that the understanding of free will, based on alternative possibilities and ultimate responsibility in the sense introduced by Kane, may actually be too narrow; and the focus should rather be *on the origin of actions and on being in control*. In the terms used in Søvik’s distinction, the consequence argument apparently excludes *token* alternative possibilities at the time *t* of the action (Søvik 2016, p.54). But compatibilist accounts typically involve *type* alternative possibilities. Pauen suggests a compatibilist understanding of free will based on autonomy and origin. Still, if compatibilism were the most reasonable option, whether based on Dennett’s, Pauen’s, or any other broader compatibilist understanding of free will, then possible threats to free will and to our intuition that we often act freely, based on

some form of *neural* determinism – to be discussed in section 5.3 – would be much weaker or perhaps even irrelevant.

5.2.2 The basic argument

Another argument that is closely related to the consequence argument is what Galen Strawson calls the ‘basic argument’. Like the consequence argument, it focuses on the past of an action; but it is directed instead towards the ultimate responsibility – i.e., the second condition in Kane’s definition of free will. Thus this argument would question the possibility of free will, even if it is understood with a stronger focus on its origin or sourcehood.

The central idea is simple: “(A) Nothing can be *causa sui* – nothing can be the cause of itself, (B) In order to be truly or ultimately morally responsible for one’s actions one would have to be *causa sui*, at least in certain crucial mental respects, (C) therefore no one can be truly ultimately morally responsible” (Strawson 2013, pp.24–26; Strawson 1994, p.5; Strawson 2011, p.126).¹⁰⁴ Obviously, this objection to moral responsibility and ultimately also to the possibility of free will has been discussed at length. The reasoning as parallel to the consequence argument becomes clear if one realises that premise (A) excludes the possibility of anything being the cause of itself, and thus there must be causes in the past that necessitated actions in the present – as in (4) of the consequence argument. But the argument does not focus on determinism in the same way as the consequence argument does.

Kevin Timpe briefly evaluates this argument and, with reference to Fischer, amongst others, he suggests that Strawson’s argument demands too much of ultimate responsibility (Timpe 2013, pp.62–65). Clearly, the argument also leads to an infinite regress, showing that ultimately the responsibility for anything lies outside human control. As with the consequence argument, this argument is convincing at first glance. But I think that it is also quite obvious that some infinite regress can be constructed showing that there are always causes beyond the control of an agent. Ultimately, surely anything is dependent on the fact that the world came into existence. But that, I deem, is not a very exciting insight in relation to free will. Further, it is at least debatable whether such causes beyond the agent’s control are merely necessary or are both necessary and sufficient. It would be possible, for example, to argue that the causes of an agent’s actions are gradually developed throughout life, and thus are internal to the agent, allowing the agent

¹⁰⁴ Essentially based on this ‘basic argument’, Strawson arrives at the conclusion that, on the one hand, we are not really free and ultimately responsible for our actions, but that, on the other hand, we cannot help believing that we actually are free (Strawson 2013, pp.273–278). Many of his arguments are highly subtle and valuable. I suggest, in particular, that the observation that libertarian free will, even in the sense defined in this thesis, most probably demands too much is worth mentioning in the context of this thesis, since it is much in line with the suggestions made here (Strawson 2013, pp.274–275).

to be self-determining at least in some cases. Such causes would be internal and, presumably, sufficient. This would be much in line with Timpe's reasoning, based on Fischer (Timpe 2013, p.62). Still, it could be argued in response that the agent is nevertheless not *causa sui* and therefore not ultimately responsible for her actions. Indeed, Strawson seems to understand 'ultimately' in a very strong sense; but I deem that, in order to establish moral responsibility, it would not be necessary to be *causa sui*, as in (B) in Strawson's argument above.

This argument certainly would have to be discussed in greater depth, but here it suffices to highlight the central intuition that anything can be traced back to previous causes, questioning whether an agent can be ultimately responsible for any of her actions. But in response it can be said that, for a plausible understanding of free will, one need not demand as much as that the agent is *causa sui*. Also, it could be argued that causes external to the agent are not sufficient causes – that sufficient internal causes are gradually developed. Nevertheless, if this argument is ultimately successful, then it would support the position that free will is an illusion.¹⁰⁵

5.2.3 Frankfurt cases

In the late 1960s Harry G. Frankfurt questioned the concept of alternative possibilities, which seems to be important for free will. Certainly, his argument addresses the question of moral responsibility, and so do many of the responses to his argument. But these responses are obviously relevant to a discussion of free will since, as in the above definition by Kane, free will is often associated with responsibility. To put it simply: alternative possibilities, the ability to do otherwise, seems to be a necessary condition for our being responsible for our actions. At first glance this appears to be correct, especially if some form of coercion was involved in hindering a person from doing otherwise. For if someone stopped me from killing and eating my neighbour's cow, then surely I am not morally responsible for saving my neighbour's cow's life. But Frankfurt famously developed a number of counter-examples in which the acting person would clearly be regarded as being morally responsible for her actions, but did *not* have the option to do otherwise. In these 'Frankfurt-cases', a person typically wants and decides to perform an action despite the fact that another person – typically an evil neuroscientist – on a given sign at any time would intervene to *force* the individual to perform the action in case she intended to decide otherwise. Thus the individual *cannot* do otherwise; yet, in the event that she *wants* to perform the action in question, she clearly should be held responsible for it

¹⁰⁵ It should be noted that both the basic argument and the consequence argument can be seen in parallel to the third antinomy in Kant's *Critique of Pure Reason* (Kant 1787 B472-478). It should therefore also be possible to respond to this argument in a similar way to how Kant resolved his antinomies.

(Frankfurt 1969). Frankfurt also explored an interesting perspective on free will and autonomy in his discussion of first-, second-, and higher-order desires and volitions. In simple terms, a person would have freedom of the will if she were “[...] free to want what (s)he wants to want” (Frankfurt 1971, p.17).

These Frankfurt cases have led to a vast number of responses in the free will debate, involving solutions and suggestions corresponding to one of the possibilities of rejecting or revising alternative possibilities mentioned in the previous section. Although this debate cannot be analysed in detail here, some illuminating examples and ideas will be given below. Kane and David Widerker, amongst others, have objected to the Frankfurt cases. The basic idea in their objection seems to be that the Frankfurt cases *presuppose* a causally deterministic world, since – in simple terms – the intervener must be *sure* that if the person ‘decides’ to act in accordance with the sign for the intervener, then the person actually and surely performs this action – that is, the action is causally determined, and thus in a *libertarian* sense the person is not responsible for the action (Widerker 2011; Kane 1996, pp.142–144). Other philosophers have objected to this reasoning. Derk Pereboom (1957-) has specifically commented on Kane’s and Widerker’s arguments, and in response constructed an argument in which the actual sequence of action is non-deterministic by suggesting that the sign for intervention could be a certain ‘attentiveness for moral reasons’ that is causally necessary but not sufficient for the choice to occur, thus evading the problem of presupposing causal determinism (Pereboom 2006, pp.188–190, 193–196)¹⁰⁶.

In any case, these examples suggest that the debate is not easily resolved in favour of any specific position. Nevertheless, given the idea in the original Frankfurt-style arguments and the arguments in defence of this type of argument, it at least seems clear that the concept of alternative possibilities is not entirely unproblematic.¹⁰⁷ Furthermore, in the light of the problems highlighted by the discussion of Dennett, it does seem reasonable at least to wonder whether alternative possibilities could be construed differently from the version presented in Kane’s definition of free will, and whether one should focus more on the question of ultimate responsibility and where the source of action lies. One such position, which focuses on the source and origin of an action but still holds that moral responsibility is incompatible

¹⁰⁶ Eleonore Stump (1947-) and John Martin Fischer (1952-) have argued in favour of the conclusion that alternative possibilities are not necessary for moral responsibility, even though the former is a libertarian while the latter is clearly a compatibilist (Stump 2006; Fischer 2006).

¹⁰⁷ For further studies in these questions, Michael McKenna and David Widerker’s anthology *Moral Responsibility and Alternative Possibilities* provides a detailed overview and in-depth discussion of alternative possibilities, especially in relation to the Frankfurt cases. Several of the examples referred to in the main text can be found in this excellent state-of-the-art collection of essays (McKenna & Widerker 2006).

with determinism, is commonly known as ‘source incompatibilism’ (Timpe 2013, p.119). Timpe describes this position as follows: “[...] Source Incompatibilism requires that the source of a free action cannot have *sufficient* causal antecedents that are external to the agent in question; it instead requires that those factors that are outside the agent’s volitional structure are not sufficient for the agent’s choosing in a particular way” (Timpe 2013, p.142; my emphasis).¹⁰⁸ Certainly, one could also be a ‘source compatibilist’, holding that the source of an action is crucial for free will while defending causal determinism. But Pereboom makes a strong argument for the incompatibilism of moral responsibility and determinism, *even* if there are no alternative possibilities (Pereboom 2001, pp.110–117; Pereboom 2011, pp.409–413; Timpe 2013, pp.133–136).¹⁰⁹ Whether or not Pereboom is right in his reasoning will not be decided here. Rather, like the central intuition in Frankfurt’s original argument, it highlights that alternative possibilities may not be as central to an adequate understanding of free will as one may initially believe. Also, responses from source incompatibilism or source compatibilism would shift the focus from alternative possibilities to the origin of action and the ultimate responsibility condition in free will.

5.2.4 The mind argument

So far the arguments have highlighted that the concept of alternative possibilities is not unproblematic, and can be questioned for various reasons. But in relation to free will, randomness – and consequently even indeterminism understood in terms of randomness – is *also* problematic. A random decision would certainly not be regarded as free. The consequence argument for the

¹⁰⁸ Timpe provides a detailed account of what is meant by *externally sufficient* (Timpe 2013, pp.138–139). Obviously, if causal determinism were true, then there would be external sufficient causes. Presumably, actions by some form of disease, disorder, addiction, or the like would also count as “outside the agent’s volitional structure”. It should be clear that ‘external’ thus does *not* necessarily mean ‘external to the physical body’, although this can certainly be the case sometimes.

¹⁰⁹ In a four-case argument, Pereboom describes a scenario of manipulation analogous to the Frankfurt cases, in which an individual in the first case is created and manipulated by neuroscientists to perform a certain action. Clearly, in this first case the individual cannot be held morally responsible for her action. In a second step, a case is described in which another individual, similar to the first case, is still programmed by neuroscientists to deliberate in a causally determined way to perform a certain action. In the third step, the determination is the result of the individual’s upbringing and personal history. Finally, ‘causal determinism’ is true; and with its similarity to the other cases, it still seems that the individual is not morally responsible for her actions. In other words, the initial conclusion from the first case can still reasonably be transferred to the last case, thus showing the incompatibility of moral responsibility and determinism (Pereboom 2001, pp.110–117; Pereboom 2011, pp.409–413; Timpe 2013, pp.133–136). Or, using Pereboom’s own words, the idea is “[...] to show, with the aid of a series of cases culminating in a deterministic situation that is ordinary from the compatibilist point of view, that an agent’s non-responsibility under covert manipulation generalizes to the ordinary situation” (Pereboom 2001, p.112).

incompatibility of determinism and free will is straightforward, although compatibilists would obviously not agree; but there are also strong arguments for the incompatibility of indeterminism and free will, which, together with the consequence argument, would in effect point in the direction that free will is not possible, a mystery, or an illusion; or that our understanding of free will is incorrect in some aspect, since – so it seems – either determinism or indeterminism must be true. Libertarian accounts of free will in particular would need to address problems raised by arguments of this kind, since they often explicitly involve indeterminism. The mind argument¹¹⁰ – here based on a version by Peter van Inwagen – demonstrates where the problem lies.

Firstly, given free will based on alternative possibilities, the actions of an agent must be undetermined to guarantee that there are in fact alternative possibilities. Secondly, if the actions of an agent are undetermined, their outcome can be described as a matter of chance or random. But if how the agent acts is random, then the action is not free (van Inwagen 2002, p.168). The argument – especially the idea that a ‘free decision’ is a matter of chance – can be further strengthened by considering the following scenario, again based on ideas by van Inwagen: A person – let’s call her Alice – freely decides to tell the truth or a lie. It is then conceivable that God replays Alice’s decision in exactly the same way. Imagine now that we were able to observe these replays; then we would see Alice on one occasion deciding to tell the truth, while on another she would lie. After 1,000 replays, for example, she would have decided to tell the truth 597 times and to lie 403 times. Then, using statistical principles, one would eventually be able to assign a probability to the outcome of her decision. Would that not mean that her decision is a matter of chance (van Inwagen 2002, pp.171–173)? The essence of this reasoning and of the central intuition seems to be that undetermined choices (indeterminism) should be understood as a *matter of chance* and/or in terms of randomness, but that a random decision is not a free decision.

But do we have to understand indeterminism in relation to decision-making in terms of probability? Consider an example from physics: In the simple case of the decay of a radioactive atom, a probability is *assigned* to the event of decay, according to the theories based on observations, leading to empirical values for the half-life of the atom, giving scientists the ability to make a prediction with a certain probability. Similarly, in his argument for the incompatibility of free will and indeterminism, van Inwagen *assigns* a probability to an undetermined choice in his example about Alice deciding to lie or tell the truth; and with the help of the reasoning based on ‘replay’, he concludes that the outcome of the replay must be a matter of chance, and

¹¹⁰ The term ‘mind argument’ refers to the fact that versions of this argument have been frequently discussed in the philosophical journal *Mind* (van Inwagen 2008, p.338 n.16).

hence cannot be the outcome of a free choice. Kane admits that, if one were to study merely the underlying physical processes preceding a ‘choice’, then “[...] *free will looks like chance*” (Kane 1996, p.147). I think that what Kane has in mind is that a description of the physical processes involved in a choice would most certainly be done in terms of a probabilistic account. Nevertheless, he also suggests that van Inwagen’s argument can be questioned. One way of doing this is as follows: Chance may be *causally relevant* in choices, but need not be the cause itself, in the sense that a choice is merely a matter of chance as concluded in the example above. He describes the situation of a vaccination: a vaccination *hinders* or changes the probability of getting a disease, and thus is *causally relevant*. But if you were infected by the disease *despite* the vaccination, then it would be odd to say that the vaccination is the *cause* of the disease. Certainly, the vaccination has changed the chances of becoming infected; but it is not the cause of the individual’s sickness. Similarly, in relation to choices and decision-making, chance in indeterminism need not be the cause of a choice made; it is only influencing the choice. It is *causally relevant* for the choice, but it is not the cause as such. Therefore an indeterministic choice can still be regarded as being caused by an agent, and need not be regarded as being a matter of chance (Kane 2011, pp.393–395).

This analogy by Kane suggests, surely, that indeterminism need not be seen as the cause of a choice. But if the actual cause is found somewhere else – as in the example of a vaccination for a virus or bacteria – then the problem whether the choice or the event in question actually is *determined* by that cause seems to reoccur. In the example of the vaccination and the disease, this certainly seems to be the case. In the case of an individual choice, the situation is not entirely analogous. Of course, it could be regarded as determined in *retrospect* – but, in hindsight, so are all events, since there is only one past. But it could also be regarded as self-determined; and that, I presume, would be the minimal requirement even for Kane’s understanding of free will. Whether this would allow for alternative possibilities in the sense defined by Kane is another question. In the Frankfurt cases mentioned in the previous section, actions may well be regarded as self-determined *despite* the fact that there are no alternative possibilities. So what becomes clear is that, even if situations can be described in statistical terms, it seems that the causal history can be far more complex.

But when should randomness be applied? In the case of radioactive elements, the assumption that every decay on the level of the atom is exactly alike, or is at least highly similar, makes it highly reasonable to regard each decay as a ‘replay’ of the same. But, in the case of a disease as described above, it is already far from obvious whether the event of a certain person becoming ill can be regarded as a ‘replay’ in the strict sense suggested in the ‘replay’ scenario above. Of course, it certainly is possible, on the basis of

statistics, to assign a probability to the event of a person being infected; but the causal history of the *individual* cases of the disease is far more complex, and is certainly *not* simply a matter of chance. As suggested above, it may actually be *determined*. In fact, it seems that assigning a probability, as in the case of radioactive decay, is a matter of establishing predictability, whereas in the question of a human action, the issue is rather whether or not the cause is random.

Thus, unsurprisingly, in the case of a voluntary action, the situation is even more complex. In fact, the actual replay described in van Inwagen's example seems highly idealised and of little practical value. Certainly, for simple choices such as my choosing red wine instead of white wine at a party, or possibly even for more complex choices, it may seem possible to *estimate* a probability. But in the end the decision I make would not be based on the estimated probability, but on completely different influences – for example, in the example of choosing wine, which kind of food is offered, whether I want to get drunk, and so on. But such influences vary from one event to another, and therefore each event should be strictly regarded as a completely *new* situation; and estimating a probability for any given voluntary action would then be something we are strictly not entitled to do. But, given the complexity and uniqueness of every human action, such a model does not describe the situation adequately, since the requirement that the action *can* be *exactly* repeated is not met. Similarly, Charles Hartshorne reasons that probabilities are based on a great number of *similar* cases, but that free decisions are made *individually*, and are thus unpredictable (Hartshorne 1962, p.170). Again, although any unpredictability could be *described* in terms of probability from a third-person perspective – recall that Kane admits that “[...] free will looks like chance” (Kane 1996, p.147) – from the perspective of the agent an action could also be coerced – I just had to get drunk – or free – I chose to buy a yellow car. Actually, it seems that, by assigning a probability to the possible outcomes of the choice, van Inwagen *presupposes* that indeterminism in human decision-making should be understood in terms of randomness. In fact, it might be more reasonable to argue that an *exact* replay should result in *exactly* the same outcome – that is, the decision is *determined* – and thus it would be more reasonable to understand decision-making in terms of self-*determinism*, although the fact that the decision *finally* is determined would not mean that there *never* have been alternative possibilities.

In other words, if a voluntary action is not undetermined in the sense of being random, and if one is unsure about the truth of determinism – be it for reasons discussed in relation to the consequence argument or for reasons solely in relation to determinism, as suggested earlier in this chapter – then other possibilities should be considered. Still, one might think that it should be *possible* to assign a probability to any given action. Granted that this is

possible in principle, the *correctness* of the value of the probability nevertheless can *never* be established. One could, for example, assign the probability of, say, 0.7 to my choosing red wine at a post-seminar meeting, but whether this value is correct in relation to the *actual choice* is highly doubtful, since the choice may depend on many other things apart from the choice of red or white wine; maybe the kind of cheese offered was decisive in May, but the kind of bread served was relevant in September. Who knows? So, even if we were to grant the possibility of assigning a probability to these unique voluntary actions, it seems that doing so would not be relevant to the question of whether or not the action should be regarded as self-determined.

In summary, the mind argument heavily relies on understanding indeterminism in terms of chance and randomness, and its central intuition is that randomness is incompatible with free will. Kane's arguments against understanding indeterminism generally as a matter of chance, and the above reasoning about when it is reasonable to assign and use probabilities, on the contrary, clearly point in the direction that indeterminism need *not* in general be understood in terms of randomness. Given that the cases of interest here involve human action, I therefore suggest that indeterminism should at least be understood *either* as a matter of chance, as for example in the cases of radioactive decay, *or* as self-determinism, as in the case of many human voluntary actions. But involving self-determinism – that is, focusing mainly on the point that the choice of an action can only be understood by relating to the acting agent herself, as earlier suggested by Pauen – points, like the results from section 5.2.1, in the direction of modifying how free will should be construed.

5.2.5 A summary

The consequence argument, the Frankfurt cases, and the mind argument are directed against alternative possibilities; and the responses suggest a form of revision of this feature, possibly in the form of a stronger focus on 'sourcehood'. The basic argument also questions the feature of ultimate responsibility.

The brief discussion and review of the consequence argument and of the compatibilist responses discussed here have suggested that one possible, and presumably reasonable, approach to dealing with the problems raised by this argument is not to understand alternative possibilities as fixed to a specific point of time *t*. Further, important aspects of free will or freedom of will and action may be captured by less strict concepts than Kane's, such as the example of autonomy, origination, and *self-determination* in Pauen's understanding.

The basic argument represents a form of strong skepticism about free will. But, I suggest, it also demands too much of a plausible understanding of

free will. Here it should be noted that, if the consequence argument, the mind argument, and the basic argument were correct, then one might as well conclude and argue for the non-existence of *both* compatibilist and libertarian free will. Such a position has been developed in detail by Pereboom; and certainly, *if* one were to accept the conclusion – as some researchers mentioned later suggest – that free will is indeed an illusion, *then* many of his ideas in relation to moral responsibility, legal justice, and so on may be of great value (Pereboom 2001).

Frankfurt's well-known cases also highlight another weakness in accounts of free will involving alternative possibilities. It appears to be the case that alternative possibilities are not necessary for a person to be morally responsible for every action. Although here, at least, it has not been brought to a conclusion, the discussion of ideas related to Frankfurt cases has also strongly suggested a greater focus on the source or origin of human actions, as proposed, for example, in 'source incompatibilism'. In relation to Kane's initial definition, this would mean a stronger focus on the 'ultimate responsibility' condition.

The brief analysis of the mind argument showed that there may be reasons to doubt that indeterminism needs to be understood solely as randomness. In fact, if indeterminism is understood as randomness, then the argument is convincing, thus rendering indeterminism useless for an adequate understanding of free will; and together with the plausibility of the consequence argument, this may lead to the conclusion that – in van Inwagen's words – free will is a mystery (van Inwagen 2002). But, I think, understanding free will as a mystery would be to declare oneself defeated. In any case, if indeterminism in relation to human decision-making were understood in terms of *self-determination*, then whether in principle it is possible to assign a probability to an action does not seem relevant.

However, it has *not* become convincingly clear in which direction a modification of the notion of free will should be done. Source incompatibilism would surely be one such possibility. Yet – although one might also suggest source compatibilism in the sense previously described as a possible approach – as mentioned above, there is a strong argument against the compatibilism of moral responsibility and determinism.

The question now is how this overall picture relates to the position of emergent process panpsychism proposed at the end of chapter 4. Also, the underlying neuronal processes studied by the natural sciences may still be understood as deterministic, thus leaving the door open to the possible interpretation of free will as an illusion. This leads back to the relationship between scientific research and free will introduced in section 2.2.2.

5.3. Emergent process panpsychism in relation to scientific results about decision-making and the philosophical free will debate

Before turning to the question of how emergent process panpsychism relates to the free will debate, I will discuss how scientific research into decision-making may influence an understanding of free will. Such influences or proposals will also have to be taken into account when investigating the relation between emergent process panpsychism and the question of free will.

Certainly, ideas about determinism, indeterminism, causation, and free will are influenced by research in the natural sciences, and vice versa. Some of the results described in chapter 2 are obviously more or less closely related to free will and to ideas about mental causation. Recall from section 2.2.2 that the Libet experiment, and more recent developments and sophistications of Libet's original setup such as the Soon experiment, can be construed as pointing in the direction that free will is indeed an illusion. Also, results from cognitive science convincingly suggest that many, most, or perhaps even all of our actions and 'volitions' are strongly influenced, or even determined, by unconscious 'decisions'. The preliminary overall conclusion in sections 2.2.4 and 2.3 pointed in the direction at least of neural determinism. But it also became clear that it is not certain whether the findings presented actually *imply* determinism. Furthermore, it should be kept in mind that the discussion in section 5.1 has already suggested that global determinism is less plausible than indeterminism. But, given that local neuronal determinism still may be reasonable, the following investigation of these results seems in any case to be motivated, and will cast some light on which conclusions can be drawn from them, especially in relation to emergent process panpsychism and how strong these conclusions may be.

Turning to the results from section 2.2.2, where it is claimed that many, if not all, our actions and 'volitions' are at least strongly influenced by unconscious 'decisions', it should be noted that, even from a commonsense point of view, these results are in fact *not* so surprising. Although some claims point in the direction of decision-making and of free will being 'illusory', it is fairly easy to realise by introspection that, for example, many 'decisions' are unconscious and are often even highly automatic. Take the simple case of driving a car: certainly, most actions and decisions while driving are not made fully consciously. In fact, the more 'unconscious' – that is, automatic – one's actions while driving a car, the safer the driving. Clearly, someone who has very recently taken her driving licence is not as good a driver as someone with more experience.

Other more subtle results from cognitive science suggest that the reasons for our decisions are – at least in some cases, and perhaps even quite often – *constructed* in hindsight, that humans are not fully aware of all the

factors that influence their decisions and actions. The research into choice blindness referred to earlier would be an example of this (Hall *et al.* 2010; Johansson *et al.* 2005). Yet again, the question is whether the results are particularly surprising. One of the natural strivings in people's lives is to experience the world as consistent; so it is obvious that, if asked for the reasons for a decision, they will nevertheless provide an answer that is consistent with both the decisions made and the events, experiences, and so on prior to this decision and leading up to the decision. If there is conflicting information, as in the case of the experiments about choice blindness, the reasons might be incorrect. But the results could also simply be interpreted as showing the ingenious ways in which the mind provides a consistent view of reality, including our own decisions.¹¹¹ Indeed, Fuchs' emphasis on the brain as the 'organ of possibilities' could be read in a similar sense (Fuchs 2013, p.252). On the one hand, the brain transforms intentions and wishes into relevant states on the level of the neurons; on the other hand, it is obvious that such processes can sometimes be misguided or faulty. Yet a stronger focus in an understanding of free will on the origin of action, or the source (as has been suggested in the previous section) does not seem to be affected by these results. Although the results clearly call into question the possibility of token alternatives at the actual time of the decision or action, they do not call into question that the agent is the source of the action.

Certainly, if determinism were true, if indeterminism could be understood solely in terms of randomness, and if free will were construed in the way that Kane and van Inwagen suggest, then the results about how reasons and causes are reported, described in chapter 2, would at least give strong indications that a preferable answer to the 'mystery of free will' could be that free will is an illusion, as Wegner has suggested. Understanding free will as an illusion would obviously be compatible with the truth of *either* determinism *or* indeterminism. So, even if determinism is not true and indeterminism need not be understood only in terms of randomness, then free will could still be understood as an illusion; and these results would nevertheless suggest that we often overestimate the influence of our consciousness on our actions and decisions. In fact, realising that our cognitive resources are imperfect, flawed, and limited might actually be a good thing, suggesting that we adopt a humbler view of the value of our decisions. Yet this would not necessarily mean that decisions made and actions taken on the basis of free will *in general* are impossible. So there still might be room for free will or mental causation, and the interpretation of these results seems to depend

¹¹¹ In his 'intentional systems theory', Daniel Dennett argues that humans in general often tend to "[...] adopt the intentional stance [...]" toward entities that seem to perform actions. We frequently treat even objects *as if* they were rational agents (Dennett 2009). Obviously, the above-mentioned 'incorrect' assignment of reasons to decisions made and the interpretation of actions in favour of a consistent picture of one's actions is related to what Dennett refers to as 'the intentional stance'.

on the answers to ‘deeper’ questions, such as whether determinism is true and how indeterminism should be construed, ending up in the problems discussed in the previous sections. Of course, Wegner, who concludes that free will – or ‘conscious-will’, as he often calls it – is an illusion, actually thinks that determinism *is* true. But since he regards free will as a *feeling*, he thinks that it is in any case a questionable project to consider determinism and free will as opposites and to relate them to each other in the way that, for example, the consequence argument does (Wegner 2002, p.322).

But the question about whether determinism is true – from the point of view of research on the human brain – could possibly be answered, or at least argued for, by moving down to the neuronal level. If determinism is true on the neuronal level, then it would not matter whether there is some indeterminacy at the level of quantum phenomena that is leveled out at the macro-level. Here the question would be whether only part of or *all* neuronal processes are governed by deterministic laws. This should not be the case, at least in some processes, if free will and mental causation initiated by self-consciousness is assumed to be possible. This leads to the question about which consequences Libet’s experiments and refinements of them – all investigating neuronal activity – have for how to understand free will.

Recall that Libet’s experiments and refinements investigate and describe the neuronal processes under decision-making. As described in chapter 2, these experiments show that neuronal activity leading to action – the readiness potential – can be measured before the urge to perform the action is consciously reported. In some refined setups, as in the Soon experiment, the ‘decisions’ can even be predicted with a probability higher than mere chance up to several seconds before the decision becomes known to the participant in the experiment by measuring and interpreting the activity in specific regions of the brain. Recalling the setup of this experiment, fMRI measurements monitored brain activity, making it possible to locate a brain area (the frontopolar cortex) from which *predictive* information about the choice of pressing a button with a left or a right finger in the experiment could be obtained (Soon *et al.* 2008b, pp.543–545).

This certainly seems to pose a far greater problem for an understanding of free will or conscious mental causation. Apparently, the causal chain for the actions initiated in the experiment can be traced back to neuronal events that precede the time when the participants become aware of their decisions. Furthermore, in the case of the Soon experiment, predictions can be made about the choice. Presumably, future research in neuroscience will present further details on these phenomena. This seems disturbing – at least for those defending the possibility of free will. So *any* philosophy of mind – be it monistic, physicalist, dualistic, based on emergence or process philosophy, or the emergent process panpsychism proposed here – should be able to

account for this *temporal problem* and provide a reasonable interpretation of these results.

Since in these experiments the neuronal origins of the actions, and even the outcomes of the actions, seem to be beyond the reach of human consciousness – they precede the agent’s awareness of the decision – these results certainly point in the direction of determinism, or at least of indeterminism understood as randomness, which, as has been sketched, are both incompatible with (or at least pose problems for) free will understood in the libertarian sense defended by Kane. Either the neuronal events are determined in the classic and strict sense of the word, or they are governed by laws described in terms of randomness or probability, which in turn could be embedded – as mentioned in section 5.1 – in more complex deterministic descriptions, and which also could account for the predictions accounted for in the Soon experiment. In either case, how to understand what free will or conscious mental causation is would have to be revised. The situation may in fact be even worse, for even if determinism is *not* ontological, indeterminism is *not* solely understood as randomness, and if the CCP is only understood as a methodological assumption, all of which already have been suggested, it still seems to be possible that our volitions are governed in the way described by the Soon experiment. The choice predicted in the experiment may well be ‘determined’ from a certain stage, although it is random from the beginning. The conscious decision in particular, since it is reported at a time after the correlating neuronal activity from which the predictions are made, does not seem to report the ‘actual unconscious decision’. So in this case the question is not whether conclusions about determinism, indeterminism, and CCP are of any help, but rather how the results of these experiments can be understood, and how the results of the Libet experiments and refined setups such as the Soon experiment should be interpreted. Is it possible to find objections against the interpretation of these experiments that free will is an illusion? Or would the emergent process panpsychism need to incorporate the position that free will is an illusion? Thus, before turning to how emergent process panpsychism relates to the free will debate, I will present some objections that will weaken support for the interpretation that free will is an illusion.

One forceful objection made by several philosophers is based on the idea that Libet assumes that the whole process of making decisions can be split up into distinct points of time, meaning that, for example, the occurrence of the readiness potential and the reported decisions are events that can be treated as distinct events. They question whether it is possible to assign precisely and reliably a certain point of time to the action by mere introspection, as suggested in the setups of the above experiments (Schlicht 2007, p.191; Falkenburg 2012, p.192). Even physicalist Daniel Dennett suggests a different interpretation of the experiment – namely, *not* that unconscious

decisions precede the conscious reports – possibly rendering free will an illusion – but that decision-making takes time (Dennett 2003, p.239). Both suggest that decision-making should be understood as a dynamic process rather than a discrete event (Schlicht 2007, pp.192–193), that free will should be regarded as mental power “[...] smeared out over time” (Dennett 2003, p.242). So the actual ‘conscious report’ of the decision is only a minor part of the total dynamic process of decision-making which in turn is part of the greater dynamic decision to participate in the experiment. Indeed, one may suspect that in the case of these experiments specifying or attempting to specify a specific time t for the decision is one of the reasons that the counterintuitive conclusion that free will is an illusion can be drawn in the first place. Nevertheless, the results, similar to Dennett’s reasoning presented in section 5.2.1, would still at least point in the direction that the concept of alternative possibilities at time t is indeed problematic. Parts of these objections would also apply to the Soon experiment. Certainly, even in the Soon experiment, decision-making could be regarded as spread out over time. Yet the objection that is problematic to assign certain points of time to the ‘conscious decision’ does not seem as forceful in the Soon experiment, since the neuronal events used for prediction precede the conscious reports by several seconds, and both events could still be regarded as belonging to the same decision.

Another objection, expressed by Maxwell Bennett (1939-) and Peter Hacker (1939-) and referred to by Falkenburg, is directed towards the instructions in these experiments. What the experimenter is asking of the participant is essentially this: ‘Be spontaneous!’ or ‘Act randomly!’, implying paradoxically that the participant should *plan* that her actions should be *unplanned* (Falkenburg 2012, p.193; Bennett & Hacker 2003, p.229). A closer look at the instructions of the Soon experiment point in the direction of this interpretation: “As in previous studies we explicitly asked subjects not to make button selections based on any kind of pattern. They were specifically asked not to be too eager to initiate a button press when the consonants first appeared, or to maintain a constant state of readiness for the movement” (Soon *et al.* 2008a, p.16). Actually they *chose* participants whose choice appeared to be spontaneous: “Instead, we selected subjects that spontaneously chose a balanced number of left and right button presses without prior instruction based on a behavioral selection test before scanning [...]” (Soon *et al.* 2008a, p.16). John Dylan Haynes (1971-), one of the collaborators in this experiment, kindly explained to me at the ‘Agora Conference on Free Will’ in 2017 that one of the purposes of choosing subjects in this way was to avoid *unconscious, automatic* behaviour in the choice pattern, such as simply alternating between pressing the right and the left button; thus the experiment would reflect a more conscious behaviour. But the question remains of how this setup would relate to deliberation; after all, the choice is

arbitrary – and it is intended to be so by the method – even if the effort of its being arbitrary may be consciously made. Further, one may wonder whether the conscious effort to make an arbitrary choice results in leaving the ‘decision’ at least in part to the unconscious. In other words, are the experimenters not after all *asking* the participants to leave the decision-making to the unconscious? Should the free decision not rather be seen in the act of participating in the experiment and trying to follow the instructions successfully? These questions lead to a related objection – namely, that the free decision is not the ‘decision’ measured in the experiment. Rather, the decision to participate prior to the whole setting up of the experiment would be a decision that is possibly free (Pauen 2004, p.202; Falkenburg 2012, p.192).

Another possible objection would be that free actions usually involve the process of considering the pros and cons for a decision. But such deliberation is *not* investigated in the above-mentioned experiments. In the case of the Soon experiment, it is actually ruled out by the instruction not to make any selections by patterns, and by the choice of participants who behave ‘randomly’ or ‘consciously spontaneously’. Presumably, free decisions in everyday life, such as the choice of profession or the choice to buy a specific car, are usually prepared over a longer period of time, weighing up the arguments for and against the choices that are considered possible. Indeed, the experiments do *not* capture any of the presumably more important cases of free action in human life, such as morally relevant decisions or decisions in relation to the course of one’s life. In fact, the commonsense observation that free choices are deliberated upon over a longer period of time fits well with the interpretation sketched earlier – namely, that the decision-making process is spread out over time – in many cases, over a considerable timespan (Pauen 2004, p.202; Schlicht 2007, pp.196–197; Habermas 2005).

Summarising the above, although the described experiments *seem* to provide apparently strong evidence against free will, it would be too hasty to draw the conclusion – even from the Soon experiment – that free will is merely an illusion. Certainly, the above experiments again emphasise the fact that, unsurprisingly, *sometimes* there are unconscious determinants for our decisions, but presumably not always. Also, the role of the preceding readiness potential has been questioned; Schurger *et al.* even propose that “[...] the neural decision to move coincides in time with average subjective estimates of the time of awareness of intention to move and that the brain produces a reasonably accurate estimate of the time of its movement-causing decision events” (Schurger *et al.* 2012, p.E2910).

Moreover, the *consequences* of the conclusion that free will is an illusion may in fact be *negative*. Although Metzinger himself suggests, for example, that the self is an illusion, he warns about the consequences of the research on the brain concerning consciousness and free will. He suggests that they may create an “*anthropological and ethical emptiness*” and that

there is a risk that a “*vulgar materialism*” may be established in society (Metzinger 2014, pp.308–309). Such notes of caution are in fact supported by some research in which the consequences of disbelief in free will have been investigated, and which clearly point in the direction that such disbelief affects brain processes, and that these effects presumably are negative (for example, Baumeister *et al.* 2009; Rigoni *et al.* 2011; Alquist *et al.* 2013).

The above experiments also mainly address the question of humans having alternative possibilities at the time of the performed action. Certainly, the Libet and Soon experiments would count against the view that humans have alternative possibilities at the specified time *t* of action, since – at least at the time the subject performs the action – the action itself cannot be reversed.¹¹² Furthermore, the experiments on choice blindness and Wegner’s reasoning about ‘apparent causes’ – apart from the objections made – would count primarily as arguments against alternative possibilities at the time of action; for what kind of choice would a person have had if s/he cannot even correctly account for the reasons and causes for an action? But none of the above results actually question that the subject was the *source* of the action or decision. In fact, the objections considering the *dynamic* character of decision-making, instead of splitting up decision-making into discrete events, again point in the direction of understanding consciousness, and thus even conscious mental causation and decision-making, as a *process* that is spread out over the brain in total and over time, as suggested in chapter 4. To be sure, a process approach would not be implied by this, but it is nevertheless supported and favoured.

But how would the above results from scientific research and the overall picture of the free will debate relate to the proposed emergent process panpsychism? Firstly, it has already been suggested that decision-making should be understood as a process spread out over time. That would obviously fit well into a process account of consciousness and human mental life. Indeed, although a process view would not entail that decision-making should be understood as a process spread out over time, it would strongly suggest that one should do so, since processes are the primary ontological category. Again, the idea of involving a process understanding seems to be unproblematic – which in itself is unsurprising, since the metaphysical approach of process philosophy, just like a substance approach, is obviously devised to describe nature in its totality. Here, the observation is instead that a process approach is more natural, since the phenomena in question are obviously processes.

¹¹² Libet has actually argued that the subject might have the possibility of vetoing the action in the timespan between the action being reported and being performed, suggesting that humans at least have ‘free-not-will’ (Libet 1999, pp.51–52). Nevertheless, it has also been suggested and concluded that the processes prior to actions have a ‘point of no return’ (Schultze-Kraft *et al.* 2015).

In relation to panpsychism, the following can be said. Recall that panpsychism amounts to the claim that everything in some sense has a form of experience, including inner experience. If combined with a process view such as Griffin's panexperientialism (described in section 4.2.1.1), a rudimentary form of self-determination is granted, even at the micro-level (Griffin 2001, p.109). But even Rescher, who does *not* combine his process view with panpsychism, thinks that agency and self-development are basic features of processes (Rescher 1996, p.35). But surely, even without the process view, a panpsychist could argue that the possibility of some rudimentary form of inner experience at any level at least suggests that this inner experience is determined by the entity *itself*. But if self-determination exists already 'all the way down', then – given the feature of emergence in the proposed emergent process panpsychism – self-determination at the micro-level would grant at least the possibility of self-determination at any other emergent level, including the level of the human mind. So the suggestion of a stronger focus on self-determination and the source of action would certainly not be contradicted by emergent process panpsychism; instead, it would be supported.

This emergence of self-determination can obviously be seen as paralleled by the advantage of panpsychism in relation to how downward causation is explained (section 4.2.2.1). The power of exerting causal influence at a higher level already lies in the both the mental and the physical aspects of any entity (Griffin 1998, p.235). Likewise, the power of self-determination at a higher level already lies in any entity's power of self-determination.

But, still in relation to the free will debate, the question remains about whether emergent process panpsychism at least hints at which position should be chosen. Should compatibilism, for example, be preferred? Self-determination is certainly strongly suggested as a feature of an understanding of free will in emergent process panpsychism. But is it possible to claim more? Both Griffin and Hartshorne make stronger claims and presuppositions. Griffin's version of process panpsychism (or 'panexperientialism', as he calls it) presupposes "[...] efficient causation understood as the real influence of one thing (or many things) on another" (Griffin 1998, p.34) and libertarian free will (Griffin 1998, pp.34–41). Likewise, Charles Hartshorne presumed libertarian free will in a very basic commonsense understanding (Hartshorne 1962, p.223). Griffin argues that both 'efficient causation as real influence' and libertarian free will should be regarded as notions of hardcore commonsense, as introduced in section 1.3.2 (Griffin 1998, p.34), thus presupposing them. He also thinks that the commonsense intuition that humans – at least sometimes – act and choose freely can only be captured by libertarian free will, understood as the 'ability to do otherwise'.

This certainly points in the direction of libertarianism. But firstly, they both *presuppose* libertarianism, rather than conclude that free will should be understood as such from their process panpsychist view. And secondly, nei-

ther Griffin nor Hartshorne describes libertarian free will as the ‘ability to do otherwise *at time t*’, as Robert Kane does. In fact, Griffin often discusses free will in terms of self-determination (Griffin 1998, pp.34–41), although it is unclear whether he understands this term in exactly the same sense as depicted here. So even in their views, I deem, the possibility is still left open to incorporate a less ‘strong’ understanding of free will and the notion of alternative possibilities in a process panpsychist approach. The commonsense intuitions referred to by Griffin could possibly be captured in less strong assumptions than, for example, libertarian free will does. Also, it should be noted that the analysis both of the standard arguments in the free will debate and of the scientific research about decision-making (previously discussed in this chapter) suggest that libertarian free will in the stronger sense defended by Kane, which was also the initial definition of free will here, should *not* be the first choice, although, I certainly would not claim that it is possible ultimately to *conclude* that libertarian free will is impossible.

How does the self-determination suggested in emergent process panpsychism relate to the central idea in the basic argument that any event can be traced back to previous causes? If self-determination is presupposed at all levels, it could be argued, firstly, that self-determination at higher levels can be causally traced back to causal powers at lower levels; and secondly, that self-determination would not mean that responses of any entity are *not* related to other events. Thus, I deem, it is hard to see how the *causa sui* condition in the second premise (B) of Strawson’s argument could *ultimately* be met. But, as briefly explicated, it could be argued that the causes that are sufficient for an action and that are involved in self-determination are internal to the agent; and I also believe, as already stated, that the demand that the agent be *causa sui* is too strong.

But does self-determination in emergent process panpsychism help in deciding how to understand free will in relation to the other arguments? Certainly, self-determination *could* be understood in terms of ontological determinism, which would push the scale towards a position incorporating determinism. But this, I believe, is less plausible. Consider the case that the inner experience of an entity is determined in the strongest sense. Would it not be the laws for determination that determined the entity rather than itself? Indeed, I suggest that self-determination is best understood as indeterminism. But this would still not favour libertarianism, for example, in emergent process panpsychism over compatibilism. The only positions of the four introduced at the beginning of section 5.2 that would be rejected, are those denying that free will exists, since – given self-determinism – free will would still exist at least in some weaker sense. So both compatibilism and libertarianism – possibly with modifications to their understanding of alternative possibilities – would be reasonable options. It should be noted here that it can be argued that one of the major advantages of compatibilism is precisely its

compatibility. As Fischer points out, I think correctly, compatibilism is – or at least can be construed as being – compatible with *both* determinism and indeterminism, which would seem to be an advantage (Fischer 2013, p.315). Nevertheless, in an emergent process panpsychist understanding of free will, the feature of self-determination should be central; and given that self-determination and a focus on the source of action was central in the responses to three of the standard arguments presented here, emergent process panpsychism at least does not stand in opposition to these responses. But is it possible to suggest more? This question leads to the final summary and the concluding section in this chapter in which I will suggest some novel and promising approaches to an understanding of free will.

5.4. Summary, conclusions, and a sketch of an alternative approach to free will

The previous sections have resulted in the following: Indeterminism is slightly more plausible than determinism. The standard arguments highlight problems with the concept of alternative possibilities. A shift of focus to the source of actions is suggested, and is plausible both from the presentation of the central intuitions and responses to the standard arguments, and from the point of view of emergent process panpsychism. If emergent process panpsychism is presupposed, then self-determination at a higher level could be regarded as emergent from self-determination at lower levels. The process view strengthens, supports, and even suggests an interpretation of the scientific results that decision-making should be understood as a process spread out over time. The scientific research also suggests that alternative possibilities, understood as the ability to choose otherwise *exactly* at the time *t* of the action, are most likely false. Given these results, it is now time to present an understanding of free will that acknowledges emergent process panpsychism, the intuitions highlighted by the standard arguments, and the scientific research on decision-making.

More specifically, the intuitions highlighted by the first three standard arguments suggested shifting the focus from alternative possibilities to the origin, the source of actions, to the agent's autonomy and self-determination. Adopting either 'source incompatibilism' or 'source compatibilism' certainly seems to be a more attractive move. Surely, the definition of Kane focuses strongly on alternative possibilities, but Kane in fact repeatedly emphasises that conditions of *both* ultimate responsibility and alternative possibilities are closely intertwined. Indeed, by introducing the concept of 'self-forming actions', Kane further emphasises the importance of the source, of the self in free actions (Kane 1996, chaps.3–5). Further, I deem, it is quite obvious to focus on the autonomy of the agent, the source, the origin of human actions,

on self-determination, since after all the question is *always* whether or not *individual* actions are free. Even alternative possibilities are always something that a self, an autonomous individual may or may not have. Thus I suggest that shifting the focus in an understanding of free will towards origin, self-determination, the source of action, and the like does seem quite reasonable. Now, it has already been suggested in section 5.2.1 that self-determination, following Pauen, should be understood in the sense *that the choice of an action only can be understood by relating to the acting agent herself*. A closer look at this understanding reveals something similar to what Timpe underlines in his discussions of being the source (Timpe 2013, pp.10–11, 122–123–138–139, 142). It seems that what is suggested in the phrase ‘that an action *only* can be understood by relating to the acting agent herself’ is that there is no sufficient condition *outside* the agent for the agent’s action. But this would be precisely what Timpe – as already referred to earlier in section 5.2.2 – with reference to Michael McKenna thinks is at the core of sourcehood: “[...] that the source of a free action cannot have sufficient causal antecedents that are external to the agent in question [...]” (Timpe 2013, p.142).

Alternative possibilities *at the time t* of the action have been strongly questioned, and in a source view, having alternative possibilities should certainly not be seen as the only aspect of having free-will. Further, understanding decision-making as a process in time would exclude this understanding of alternative possibilities, since a process is never something that is fully described by what happens at a ‘point of time’.¹¹³ Indeed, once I am *no longer* deliberating on an action or decision, once I have reached the point of time at which my action or decision has become manifest, I am *not* deliberating; the process of decision-making has come to a conclusion – that is, I do *not* have alternative possibilities (anymore). Indeed, this conclusion, that there is a ‘point of no return’, is also supported by scientific research about vetoing actions (Schultze-Kraft *et al.* 2015).

But what about alternative possibilities prior to the decision? Surely, it seems reasonable, in both the process approach and a scientific approach, to understand decision-making as a process spread out over time. Thus, prior to some point of time – possibly earlier than the time at which the action or decision became manifest – it is conceivable that there were token alternative possibilities in the process of decision-making. Also, it is normal that novel concepts from other fields of research gradually inspire similar thoughts in other areas of research. One such non-commonsensical group of

¹¹³ Nicholas Rescher discusses free will explicitly from the point of view of decision-making as a process. Nevertheless, he does not drop the idea that the ‘free decision’ occurs at a specific time, and sticks to the idea that the ‘act of will’ is *not* a process. Instead, he qualifies this approach by pointing out that the ‘free decision’ should be understood as the termination of the deliberation process. In so doing, he attempts to evade the problem of determinism, claiming that predictability breaks down at the ‘point’ of decision (Rescher 2006).

ideas can be found in quantum physics. Phenomena such as ‘wave-particle’ dualism or electrons in an atom not being ‘located’ until measured suggest that there are phenomena in which two or more states are represented at the same time as real ‘token’ possibilities. What I suggest is that we think of alternative possibilities in a process as *analogous* to states in quantum physics.¹¹⁴ They may exist *simultaneously* in the process of deliberation, but once ‘measured’, once the deliberation process is forced to come to an end, it will always – of course – collapse into one single fixed action or decision. This would also mean that interfering with the deliberation process may force one of the token possibilities or ‘states’ to become manifest. Frankfurt case scenarios would obviously still be possible; but that does not really matter since, I think, the lesson to be learned from them is that – as has already been said – alternative possibilities should not be identified with free will as such.

This understanding would mainly withstand Dennett’s objection, since he assumes that the outcome of a deliberation hovers, alternating between two or more possible outcomes, and that thus any specific time can be assigned to a specific outcome. If the outcomes would *coexist*, analogous to quantum states, then this would not be the case. Still, at the point of decision or action, only one possibility would remain. This would capture both the *libertarian intuition* that humans at least sometimes have relevant *token* choices, and the conclusion that there are no alternative possibilities *at the time t*. But would this understanding not open the door again to the objections based on randomness? This would not be the case if, as was argued in section 5.2.3, one realises that free decisions cannot be repeated in the way required by the mind argument; nor if the *main* condition for an action being free is self-determination and being the source in the sense depicted earlier.

I also suggest the following: Given that there may be *token* alternative possibilities in a deliberation process, these *token* possibilities may change during the process into *type* possibilities, although the agent may not necessarily become aware of this, thus possibly still believing that she has token alternative possibilities. This would capture the observation that it is possible to realise in retrospect that decisions were ‘determined’ before they were in fact actively made. For example, when I choose between buying a red car or a yellow car, it would seem that I have token possibilities to choose from. Now, if at some point my daughter tells me that she loves red cars, then, although I may believe that I still have token possibilities, I do not actually have them, since I always prefer to do what my daughter likes. But at the same time I may not be fully aware of this specific circumstance. Certainly,

¹¹⁴ In a summary of his ‘theory of causal significance’, Gregg Rosenberg recently suggested a similar analogical thinking. He thinks that it is legitimate to transfer the logic of quantum physics to other areas – in this case, to questions about causation (Rosenberg 2017, p.162,173). A detailed account of his theory of causation and of his ideas about consciousness can be found in *A Place for Consciousness* (Rosenberg 2004).

this kind of ‘narrowing-down’ the possibilities could be extended to cases involving more possibilities. Also, reasoning in this way – namely, that at the *final* point of decision or action the agent did not have alternative possibilities, but may have had them within some time-span prior to the actual decision – is similar to Kane’s idea of tracing back decisions to ‘self-forming actions’; but it also reminds us of a psychological approach to free decisions suggested, for example, by Erich Fromm decades earlier (Fromm 2015/1964, pp.147–198).

More importantly, not focusing on alternative possibilities, yet granting them in relevant cases, also captures the common insight that actions can be free even if there is only one possible choice – as highlighted, for example, in the case of the famous words, “Here I stand, I can do no other”, attributed to Martin Luther – without necessarily having to apply the concept of self-forming actions, which may lie far in the past of an individual’s history. In morally relevant situations, an agent may only have *one token* possibility, but still would be regarded as a free agent. It would also be in line with understandings of free will as freedom from acting contrary to what is morally good, and would also capture the idea that moral perfection reduces the number of choices. With reference to ideas from Aquinas, Palmyre Oomen (1948-) suggests the following:

Here, freedom means that I am free if I am not forced to refrain from what I consider good, if I am not tempted or forced to betray my deepest convictions (myself), if I am not alienated. In this sense, freedom means an unthwarted orientation of the will on that which is thought of as good. [...] Freedom is therefore definitely not the same as indeterminism, since its core meaning is to be determined in one’s choices by one’s own commitment. Therefore, the fundamental meaning of freedom is *self-determination*. (Oomen 2003, p.386)

Yet again, the focus on self-determination and/or being the source can be seen, together with the possibility of not having ‘all the choices’, of being committed to what is good or ‘the right thing to do’.

Finally, the idea that self-determination on a higher level emerges from self-determination at lower levels suggests the important consequence, analogous to the reasoning about consciousness, that there are also levels of freedom. For humans this would mean that greater freedom can be achieved, that free will is not something that an agent exercises or not, but rather an ability to be trained and developed.¹¹⁵ Another consequence of the suggestion that free will comes in degrees would be that there is not only human

¹¹⁵ A similar conclusion, but not using the starting point of emergent process panpsychism, has been made by Fuchs (Fuchs 2013, pp.255–261). The metaphysical position he proposes is, I suggest, a form of dual aspect monism (Fuchs 2013, pp.224–268) that surely could be argued is close to panpsychism.

free will. This could be regarded as a negative consequence, since one would not only have to deal with the question of human free will. Rather, I regard this consequence as an advantage, since it opens up new and interesting research questions in relation to both free will in AI and animal consciousness.

Given the above, in summary, free will could be understood as follows:

- (i) The decision-making involved in free decisions is understood as a process spread out over time. (Capturing the process approach suggested here and the results of scientific research about decision-making)
- (ii) An understanding of free will should be based primarily on self-determination and on being the source of one's actions – the former meaning that the choice of an action only can be understood by relating to the acting agent herself; the latter that there is no sufficient condition *outside* the agent for the agent's action. (Capturing the ideas behind ultimate responsibility and self-forming actions in Kane's libertarian understanding of free-will and the response to the standard arguments)
- (iii) Alternative possibilities do not exist at the point of time an action or decision becomes manifest. Instead, there *may* be, and presumably most often are, alternative possibilities simultaneously in the process of deliberation that, analogous to and following the logic of quantum physics, 'collapse' into an action or decision becoming manifest. (Capturing the libertarian intuition of choices, the process approach suggested here, scientific research and Dennett's criticism of alternative possibilities at time *t*)
- (iv) Emergent process panpsychism allows for self-determination at all levels. Self-determination, and thus also free will, in humans should therefore be regarded as an emergent phenomenon that comes by degrees. (Capturing the emergent process panpsychist assumption of mentality and self-determination at all levels of existence)
- (v) The number of alternative possibilities are commonly gradually 'narrowed down' until merely a single possibility remains. This may not be fully conscious.

The above account apparently also captures the basic commonsense intuitions of choice and the origin of a freely willed action. To be sure, the five suggestions above do not rely *heavily* on the emergent process panpsychism proposed in chapter 4; but they are not obviously in conflict with the proposed emergent process panpsychism either. But this can in fact be regarded as an advantage and in favour of the above understanding. Except for (iv), the above sketch of an understanding of free will could presumably be adopted and developed even in other frameworks. Certainly, one basic idea

in the fourth feature (iv) could even be expressed more independently of emergent process panpsychism simply as the claim that free will comes by degrees, thus also allowing for the possibility to be developed in other frameworks than the emergent process panpsychism proposed here. Also, the above view does not contradict scientific research on the topic. Analysing the above suggestions, and developing them in general – or in the framework of emergent process panpsychism – would be an interesting project for future research. Having said this, it is time to move on to the relation of emergent process panpsychism to a theistic worldview.

6. A theistic worldview in relation to the alternative philosophical framework

Before turning to the discussion of how the results from the previous chapters relate to the theistic worldview depicted in chapter 1, a brief resume of these results and some comments on them are in order. The results in chapters 3 and 4 led to the following conclusions: Emergent process panpsychism was suggested as the most reasonable alternative to reductive physicalism and dualism. The CCP need not be taken as the strong metaphysical principle it often is taken to be, but can rather be seen merely as a *methodological* principle. In chapter 5, based on a brief account of the contemporary free-will debate, scientific research about decision-making, and the proposed emergent process panpsychism, five suggestions were made in relation to free will: (i) decision-making is understood as a process spread out over time; (ii) an understanding of free will should be based primarily on self-determination; (iii) alternative possibilities do not exist at the point of time an action or decision becomes manifest; instead, there *may* be, and presumably most often are, simultaneous alternative possibilities in the process of deliberation; (iv) given *emergent* process panpsychism, self-determination would be present at all levels, and thus self-determination and free will in humans should be regarded as an emergent phenomenon that comes in degrees; and (v) the number of alternative possibilities are commonly gradually ‘narrowed down’ until merely a single possibility remains. It should be noted here that, except for (iv), the above suggestions concerning free will do not rely heavily on emergent process panpsychism, and could therefore be developed in other metaphysical frameworks.

It also became clear in section 5.1 that, although determinism cannot be rejected as a possible metaphysical position, it is still less plausible than indeterminism. The suggestion that the CCP should be understood as a *methodological* principle would, in turn, further weaken the position of determinism as a metaphysical principle. As was briefly argued in section 1.3.2, theories about consciousness and self-consciousness should at least include an understanding of free will, or suggestions for an understanding, since free will is a part of conscious human mental life. Summarising the results in chapter 4 and 5, an *alternative philosophical framework* with the following features would have to be related to the theistic worldview depicted in section 1.4:

- (1) An emergent process panpsychist approach, as suggested in chapter 4
- (2) Understanding the CCP as a methodological principle
- (3) Determinism is less plausible than indeterminism.
- (4) Suggestions of a revised understanding of free will, according to (i) to (v) above and at the end of chapter 5

Since the above analysis, which leads to the results so far, has *not* considered any *theological* reasons that may modify or qualify their explication, and since they are based on considerations of reasons from *scientific* research and *philosophical* investigation, the above results could presumably be applied and related to worldviews and religious contexts other than the one suggested in this thesis. In any case, in what follows these results will be related to the theistic worldview described in chapter 1 section 1.4, leading to possible suggestions for modifications of some parts of the theistic worldview, and possible suggestions for modifications and interpretations of the philosophical frameworks and the empirical results respectively, based on *theological* reasons.

Further, the following should be noted: the first feature makes clear *metaphysical* claims – namely, that the world should be understood in terms of process, that some form of panpsychism should be embraced, and that higher-level phenomena emerge. The third feature leaves open whether indeterminism or determinism should be favoured from a merely metaphysical point of view. The second and the last features could be seen as attempts *not* to make such strong metaphysical assumptions about the CCP and to have a broader, less restrictive understanding of free will. Feature (iv), on how to understand free will, would be an exception, since it claims that self-determination exists ‘all the way down’ and that self-determination in humans is an emergent phenomenon. The last two features, especially, more clearly and directly relate to beliefs concerning human free will and human action.

Clearly, the question arises especially in relation to the first feature: whether – in making strong metaphysical claims – it has some direct implications for how to understand God or the divine. Process panpsychists such as Hartshorne and Griffin have defended a panentheistic conception of God. But, although this position may *seem* to be a logical consequence of process panpsychism, it is not clear that a process panpsychist view, in combination with emergence, indeterminism, and the above understanding of free will, actually *implies* panentheism. Since many of the theistic beliefs from section 1.4.1 directly or indirectly depend on the conception of God being considered, it is reasonable to analyse this problem before turning to the relationship between the suggested features of the philosophical framework and the theistic beliefs.

Following the classification set out in section 1.4.1, and given that the consequences of emergent process panpsychism for an understanding of God shall be discussed, the rest of this chapter can be divided into three major parts. The first part – section 6.1 – will deal with the question of whether process panpsychism already implies, or at least favours, a panentheistic understanding of God. The second part – section 6.2 – will mainly deal with the alternative philosophical framework in relation to the theistic worldview. This included the human soul, the consciousness of the God and divine action and interaction, life after and/or before death, a personal relationship with God, theological determinism, omniscience, and omnipotence. In the discussion, some of the features in the alternative philosophical framework will be of greater importance and relevance than others. Also, some of the areas and topics to be discussed will be interrelated, and there will also be overlaps and interconnections between the various parts. To end the chapter, the results will be summarised in section 6.3.

6.1 Consequences of emergent process panpsychism for an understanding of God and arguments for panentheism

As has already become clear, several of the more developed accounts of panpsychism or panexperientialism in the Whiteheadian tradition, represented, for example, by Hartshorne's or Griffin's philosophies, openly defend a panentheistic understanding of God. More theologically oriented approaches, such as the work of Catherine Keller (1953-), also combine a process view of reality with panentheism without any specific emphasis on or reference to panpsychism (Keller 2008). Sally McFague (1933-) who argues for a panentheistic worldview, seems to be at least sympathetic to Whiteheadian process theology and thus possibly even to some form of panpsychism (McFague 1993, p.141). On the other hand, theologians such as Jürgen Moltmann (1926-) – although he can clearly be regarded as a pantheist – have openly criticised Hartshorne's process theology, and thus also the underlying process of *panpsychist* metaphysics, at least indirectly (Moltmann 1985, p.91). Many more examples could easily be given. Nevertheless, it seems that panpsychism and/or panexperientialism in combination with process philosophy, at least more recently, are closely related to panentheism, but also that it is far from clear whether either view entails, or in some sense is dependent on, the other.¹¹⁶

¹¹⁶ John W. Cooper (1947-) gives a comprehensive historical account of panentheistic ideas and views from the ancient Greeks until the present. Several of the above-mentioned philosophers and theologians are discussed in his essay, and pantheists like Hartshorne, Cobb, or Griffin are also treated as panpsychists. Cooper also gives a brief summary of some basic

6.1.1 Should theism in emergent process panpsychism be understood as panentheism?

As discussed in chapter 4, panpsychism ascribes some form of mentality, sentience, or experience to all objects – recall Skrbina’s very general definition, that “All objects, or systems of objects, possess a singular inner experience of the world around them” (Skrbina 2005, p.16) – whereas process thought focuses on features, amongst others, such as interactive relatedness, novelty, fluidity, and agency. Firstly, it should be noted that there does not seem to be any obvious reason to believe that process thought in combination with panpsychism entails *theism* in general; thus the ideas presented should not be regarded as a form of ‘natural theology’. But once one *presupposes* a form of deity, ultimate reality, or God that in some sense is transcendent, it is surely legitimate to wonder which conception of God might be preferable, given process panpsychism – for the moment I will ignore that emergence was also suggested – and the existence of God. Apparently, several process philosophers suggest panentheism as the most reasonable alternative. Likewise, one may ask whether certain forms of theism – panentheism, for example – are easier to combine with certain forms of metaphysics. But since it has already been suggested that a process panpsychist approach may be favourable in relation to the problems discussed in the previous chapters, the main focus in the following will be on the first question.

So, since panentheism has now been mentioned several times and appears to be a preferred understanding of God amongst some of those who propose process panpsychism, it is appropriate to give a short description of this position. Niels-Henrik Gregersen (1956-) defines ‘generic’ panentheism as follows: “1. God contains the world, yet is also more than the world. Accordingly, the world is (in some sense) ‘in God’. 2. As contained ‘in God’, the world not only derives its existence from God, but also returns to God, while preserving the characteristics of being a creature. Accordingly, the relations between God and world are (in some sense) bilateral” (Gregersen 2004, p.22). Or, in the words of Elizabeth Johnson (1941-): “If theism weights the scales in the direction of divine transcendence and pantheism overmuch in the direction of immanence, panentheism attempts to hold onto both in full strength. [...] At the root, this notion is guided by an incarnational and sacramental imagination that eschews any fundamental competition between God and the world in favor of the power of mutually enhancing relation” (Johnson 1992, p.231). Of course, it should be noted that the immanence of God is *not* a new idea suggested by process panpsychism or panentheism, but is also a common feature in ‘more traditional’ forms of

ideas in Whitehead’s philosophy. Yet he does not discuss the relationship between a panentheistic understanding of God and a process panpsychist metaphysics on the conceptual level (Cooper 2007, pp.165–193).

theism.¹¹⁷ Rather, panentheism attempts to *emphasise* God's immanence. Referring to Aquinas, Gregersen further points out that "[...] the real demarcation line between panentheism and classical philosophical theism is neither the immanence of God nor the use of the metaphor of the world's being 'in' God. The real difference, according to Thomas is that the natures and activities of the creatures do not have a real feedback effect on God" (Gregersen 2004, p.24).¹¹⁸

Keeping these simple definitions in mind, it is time to proceed to the relationship between process panpsychism and conceptions of God. David Skrbina observes that panpsychism in general and panentheism can easily be confused with each other. Once one has accepted that there is some form of mentality in all objects, it may be tempting to think of this mentality as being divine in nature and – together with the idea of God's transcendence – this would seem to lead to a pantheistic worldview. Without the qualification that God in some sense is transcendent, a pantheistic view would presumably also be a reasonable position. Also in the converse, only under certain assumptions, if, for example, God is thought of as an omnipresent mind that nevertheless is individualised in every entity, would such panentheism end up very close to panpsychism (Skrbina 2005, p.21). So the question remains whether the mentality assigned to every entity *necessarily* must be regarded as divine, or at least as directly related to the divine. Turning to Whitehead's ideas, he states without further argument that "[...] God is not to be treated as an exception to all metaphysical principles. [...] He is their chief exemplification" (Whitehead 1978, p.343). Now, if that is a reasonable assumption, then it may be far easier to argue for a pantheistic conception of God, given panpsychism based on Whitehead's ideas. Once God is not understood as a metaphysical exception, then the assumed metaphysical principles should be reflected in God; and since God is understood as the Creator of the world, then the principles in the world should be a reflection of those in God. Further, one of the more important metaphysical assumptions in Whiteheadian process philosophy that also is directly related to panpsychism is the dipolarity of "[...] every occasion of experience [...]", where every occasion has both a mental and a physical pole (Griffin 2001, p.109). But since God is no metaphysical exception, God in the Whiteheadian tradition of process theism should consequently also be understood as *dipolar*. This dipolarity consti-

¹¹⁷ For example, Aquinas discusses four subquestions related to the problem of God's immanence: Is God really present in all things? Is God everywhere? Is God everywhere by his essence, power and presence? Does being everywhere belong to God alone? He answers all four questions affirmative (Aquinas ST I Q8).

¹¹⁸ Aquinas writes: "As the creature proceeds from God in diversity of nature, God is outside the order of the whole creation, nor does any relation to the creature arise from His nature [...]. Therefore there is no real relation in God to the creature, whereas in creatures there is a real relation to God; because creatures are contained under the divine order, and their very nature entails dependence on God" (Aquinas ST I Q28 ad.1).

tutes one of the main features in the Whiteheadian process theistic understanding of God. In more technical terms, Whitehead distinguishes between God's *primordial* and *consequent* nature, the former referring to the conceptual, the latter to God as conscious. In Whitehead's own words:

Thus, analogously to all actual entities, the nature of God is dipolar. He has a primordial and a consequent nature. The consequent nature of God is conscious; and it is the realization of the actual world in the unity of his nature, and through the transformation of his wisdom. The primordial nature is conceptual, the consequent nature is the weaving of God's feelings upon his primordial concepts. (Whitehead 1978, p.345)

In more poetic and better-known terms, Whitehead expressed this dipolarity as follows:

It is as true to say that God is permanent and the World fluent, as that the World is permanent and God is fluent.

It is as true to say that God is one and the World many, as that the World is one and God many.

It is as true to say that, in comparison with the World, God is actual eminently, as that, in comparison with God, the World is actual eminently.

It is as true to say that the World is immanent in God, as that God is immanent in the World.

It is as true to say that God transcends the World, as that the World transcends God.

It is as true to say that God creates the World, as that the World creates God. (Whitehead 1978, p.348)

Although the last citation of Whitehead, with its focus on *both* transcendence and immanence, clearly suggests panentheism, it does not amount to an *argument* that panentheism should be the default position for a theistic process panpsychist. Charles Hartshorne argues more formally for panentheism. Again, the idea of a dipolar God seems to play a crucial role, although the dipolarity is not understood in precisely the same sense as in Whitehead's reasoning, and is in fact two-fold. In any case, Hartshorne argues for a conception of God as *both* the universal cause and "[...] the all-inclusive something, the Whole of reality [...]" (Hartshorne & Reese 2000, p.503), and also as *both* the "Supreme Abstraction" and the "Supreme Concrete" (Hartshorne & Reese 2000, p.508). In the case of God as the universal cause, the qualification that this may be only "[...] in some aspect of himself [...]" (Hartshorne & Reese 2000, p.503) allows Hartshorne to argue that there is no contradiction to God being the "Whole of reality". In other words, "[...] there is no reason why an inclusive reality may not contain an independent

cause of things, or why God may not only in his total actuality be identical with this inclusive reality, but also, in an aspect of himself, identical with the independent cause” (Hartshorne & Reese 2000, p.504). Thus he captures both the intuition in God as an independent cause and the central ideas behind pantheism. In the dipolarity between the “Supreme Abstraction” and the “Supreme Concrete”, he reasons that the latter contains the principle of relativity and that a combination seems more promising since “[...] the principle of relativity [...] cannot be derived from the merely absolute” (Hartshorne & Reese 2000, p.510). So combining these two ‘poles’ also captures the relatedness and concreteness suggested by a panentheistic understanding of God. This possibility of God being ‘doubly dipolar’ in the above sense is one of nine possible understandings of God in Hartshorne’s scheme, and amounts to panentheism.¹¹⁹ Nevertheless, his reasoning does not seem to rely directly on the assumption of panpsychism; rather, it is the dipolarity that is crucial in his thinking. But of course the dipolarity could be taken as a result of Hartshorne’s panpsychist approach. The important role of the dipolarity of God in arguing for panentheism on the grounds of Whiteheadian process panpsychism is also realised and emphasised by Gregersen (Gregersen 2004, pp.31–34). Likewise, Griffin assumes a double dipolarity of God, which is slightly different from Hartshorne’s double dipolarity. In Griffin’s view, God has abstract essence and concrete states, and also has ‘primordial’ and ‘consequent’ natures (Griffin 2004, pp.43–44).

In any case, although Whitehead’s, Hartshorne’s, and Griffin’s understandings of dipolarity differ in certain – possibly important – aspects, all three capture some form of relatedness. So the reasoning in Whiteheadian process panpsychism could be summarised very simply in the following way: If God is regarded as the “chief exemplification” of the metaphysical principles in the world, God should be construed as dipolar, since *every* entity is dipolar. As sketched above, this dipolarity would include relatedness to the world; and thus, if all entities in the world are interrelated, the world is understood as God’s creation or, in Whiteheadian terms, is connected to God’s consequent nature such that God “[...] shares with every new creation its actual world [...]” (Whitehead 1978, p.345), then, firstly it is at least reasonable to think of God as being bilaterally related to the world as a whole. Secondly, given that the primordial nature and/or the abstract essence of God is beyond the (phenomenal) world, God’s transcendence would be established. Taken together, panentheism follows.

¹¹⁹ Based on a similar scheme due to Hartshorne’s work in “Man’s Vision of God”, Julia Enxing has recently given a detailed analysis of how Hartshorne understands God’s perfection. Her conclusion is the same – namely, that process panentheism is the most reasonable choice for a conception of God, accounting for change in reality and the possibility of divine action (Enxing 2013, pp.47–70).

But what if God is *not* presupposed to be dipolar? At least if the part of the dipolarity that allows for relatedness is not assumed, then it is hard to see how the ‘en’ in panentheism could be argued for, even given that every entity has some form of mentality, as suggested by panpsychism. It is conceivable, for example, that God – using Hartshorne’s terminology – is *only* the universal cause and the supreme abstraction. Thus the world is not ‘in’ God, God is transcendent; but the world could obviously still have been created in accordance with a process panpsychist metaphysics. So, if process panpsychism were true, this surely would not necessarily *entail* that the world is created by a panentheistic God. But it still would be possible to argue, without any of the presuppositions based in Whiteheadian philosophy, that if mentality in some form is inherent in everything in nature, and if God is ‘supreme mentality’ – already understood as in some sense transcendent – it would be unreasonable to think that at least God’s mind – being *supreme* – is not connected to the mentality of the world. Furthermore, if the world is finite or even countably infinite, then for God to be supreme would mean to transcend the finite or countable infinite.¹²⁰ In other words, if God – as in pantheism – were not greater than a finite or countable infinite world, then there would be something conceivably greater than God, thus contradicting the notion that God is supreme. Also, given that in panpsychism the mental is not separate from the physical, the physical would be in God, since God is already connected to the mental. This connection would establish that God in some sense experiences the changes in both the mental and the physical, amounting to the bilateral relationship in Gregersen’s generic definition of panentheism.

To be sure, even more ‘traditional’ theistic positions such as Aquinas’ already seem to be close to panentheism when he writes that “although corporeal things are said to be in another as in that which contains them, nevertheless, spiritual things contain those things in which they are; as the soul contains the body” (Aquinas ST I Q8 A1 ad 2). Nevertheless, earlier he also answers “[...] that, God is in all things; not indeed, as part of their essence, nor as an accident, but as an agent is present to that upon which it works” (Aquinas ST I Q8 A1 co), thus taking a ‘step back’ from a more ‘panentheistic’ understanding of God. In any case, in a process panpsychist approach, theism strongly emphasises both the immanence of God *and* the interrelatedness, which suggests a bilateral relation. Thus, although also other forms of theism obviously incorporate God’s immanence, it is nevertheless reasonable to think that panentheism should be the preferred position for a theist who defends a process panpsychist metaphysics.

¹²⁰ The distinction between countable and uncountable infinity is made in mathematics. An example of the former would be the set of natural numbers. The set of real numbers is an example of the latter.

6.1.2 Other arguments for panentheism

Another way of supporting the choice of a panentheistic conception of God could be as follows. In chapter 4 it was argued that a process panpsychist position in relation to the mind/body problem is entirely reasonable. This was, of course, one of the starting points of this chapter. But it could be argued, and has been so argued, *directly* from the mind/body problem, that in a theistic setting panentheism would be favourable. Such lines of reasoning have, unsurprisingly, been proposed by some of the scholars already mentioned in the previous chapters, such as Arthur Peacocke and Philip Clayton. Clayton introduces what he calls the *panentheistic analogy*: the relationship between God and the world is analogous to the relationship between the body and the mind or soul. In fact, he gives the mind/body problem a central role in the problem of divine agency, claiming that developing an adequate account of mental causation will be of major importance to the possibility of answering the question of divine causality and thus of divine action – a topic that will be discussed in greater detail later (Clayton 1997, pp.233–234).

In any case, the analogy can be understood as follows: Since in panentheism the world is part of God, God is connected to the world and the whole universe, and – in the framework of what is logically and metaphysically possible – God can act upon anything in the world. If, in addition, the parts in the physical interacted with each other, any action of God upon the world would in some form – although possibly weak and distant – be present in the rest of the world; and since the whole world is in God, any event in the world would be experienced by God. Considering that the mind – at least in a commonsense understanding, not necessarily a dualistic one – can be regarded as acting upon the brain and thus indirectly upon the body, and that our experiences ‘act upon’ our minds; and given the basic understanding of panentheism presented above, it is easy to see an analogy between the mind and the body and God and the world (Clayton 1997, pp.101, 233-234). In other words, the parts of the body and of the brain are interconnected; the mind can affect the brain and thereby the rest of the body to a great extent; and the mind is affected by the body via the nervous system. By analogy, the parts of the world are interconnected; God can affect the world within the scope of what is logically and metaphysically possible; and God is affected by everything in the world. Likewise Peacocke, with a starting point in the interaction between the mind and the body – not understood dualistically but rather in an emergent monistic framework – and in combination with his notion of top-down, non-linear causality, suggests that, similarly to the mind exerting causal influence on the brain-as-a-whole, God in relation to the world influences and is influenced by the world-as-a-whole (Peacocke 1993, p.161). He also thinks that the relation between the mind and the body reflects both the transcendence and the immanence of the mind, and that the transcendence and immanence of God can be thought of in a similar and

analogous way (Peacocke 1993, p.186). In later works, he explicitly describes this position as panentheistic (Peacocke 2007, pp.11, 21-25).

It should nevertheless be noted that the term ‘panentheistic’ in the case of the analogy is not without problems. Although Peacocke, for example, emphasises the transcendence of the mind, it is unclear whether this is in fact the case. If this were *not* the case, then the analogy could be read in the sense that the mind ‘*not* being more’ would instead suggest something in the direction of ‘pantheism’, and the analogy would instead be ‘pantheistic’. Also, the analogy may suggest that, given that the mind emerges – whether in a purely naturalistic setting or, as in an emergent process panpsychist setting – God also emerges, a position that can be found in Samuel Alexander’s understanding of deity (Alexander 1966, chap.1 Book IV). In both cases, pantheism and some form of emergent theism would have to be rejected on other grounds, as Benedikt Paul Göcke, for example, has done recently in a discussion of ‘classical’ theism, pantheism, emergent theism, and panentheism:

[...] we can exclude pantheism and theistic emergentism as adequate models of God; pantheism because it identifies reality with its ultimate ground and therefore fails to be able to provide an ultimate explanation of the existence of reality, other than the one which assumes that its existence, and therefore the existence of a perfect being, is a contingent brute fact. We can exclude theistic emergentism because it entails that God himself is part of reality. Therefore, God’s existence depends on the prior existence of reality, so this concept of God fails to be a concept of the single ultimate ground of reality as well. *Prima facie*, then, theism and panentheism provide the only consistent models to think of God and His relation to reality. (Göcke 2017, p.6)

Nevertheless, the analogy still seems legitimate since the mind – arguably – transcends the body in the sense that it has novel properties. Note that this transcendence need not be understood in a dualistic sense. Indeed, it would be preferable to use the term *mind/body analogy* instead; but since the analogy here is often discussed in relation to Clayton’s work, I will stick to his terminology.

Either way, provided that the analogy is not taken too literally and that God is at least in some sense transcendent, then it can be said that the analysis of the mind/body problem leads to a panentheistic understanding of God, as Peacocke or Clayton, for example, have suggested. But it would *also* lead to – or at least suggest – a panentheistic position indirectly via process panpsychism, as argued in chapters 3 and 4. The mental would be present in the world through panpsychism and even if the analogy were not presupposed to be panentheistic, by the mind/body-God/world analogy the mental

should also be reflected in God. Thus the divine should be present everywhere.

There are certainly further arguments for panentheism based on theological reasoning. Clayton, whose ideas are of interest here because he has developed many of his panentheistic ideas in close relation to the mind/body problem, presents six arguments for panentheism that can be summarised as follows: (1) physicalistic or materialistic accounts leading to atheism are inadequate; (2) ‘classical’ theism is too focused on the transcendence of God; (3) the Bible does not necessarily have to be interpreted in terms of dualism; (4) an *infinite* God should include the finite; (5) the question of divine agency can be more adequately addressed in panentheism, since the world is *not* ontologically outside God; and (6) panentheism allows for a closer relationship with God: “[...] we are aware of God because we are within God” (Clayton 1997, pp.96–104, 102). All of these arguments are directly or indirectly addressed here. The first argument could be read in parallel with the approach of this thesis. The rejection of both dualism and reductive physicalism has led, via emergent process panpsychism, to panentheism. The lines of reasoning by Sally McFague, Cathrine Keller, and Jürgen Moltmann briefly presented below would be examples of theologians who argue for panentheism in contrast to a more classical understanding of theism. The idea that an infinite God surpasses yet includes the finite was briefly mentioned earlier, in section 6.1.1. Questions concerning dualism and the Bible, divine agency, and a personal relationship with God will be discussed in sections 6.2.1, 6.2.2, and 6.2.4 respectively. In these sections the connection between panentheism and these topics will become clear.

In any case, from a more theological perspective, Sally McFague and Catherine Keller, amongst others, clearly prefer panentheism, not merely or necessarily on the grounds of process philosophy, but also involving ideas from feminist theology of how to understand God and God’s relation to the world. McFague, for example, emphasises the importance of honouring and loving the body (McFague 1993, pp.15–16). In relation to ecological issues, she concludes that her model of God leads to a closer and more responsible relationship with creation (McFague 1993, p.77; McFague 2008, pp.76–77). Keller develops her panentheism in the tradition of A.N. Whitehead, and calls it ‘apophatic’ in an attempt to emphasise the radical transcendence of God and the relation of her conception of God to mystical thinking (Keller 2003, p.219; Keller 2015, p.75).¹²¹ She also highlights the importance of a

¹²¹ Here it is interesting to note that, from a feminist perspective, it would also be possible to argue for pantheism. Nancy Frankenberry discusses ‘classical’ theism, panentheism, and pantheism in relation to gender construction, and wonders whether in particular the use of the mind/body problem in analogy to the God/world/relation in panentheism still unconsciously supports a view of the male as dominant. “Cannot this analogy too easily invite a relapse into the gender-inflicted ideas of the soul as the male principle (active, of course) and the body as

panentheistic approach in relation to a material world (Keller 2008, p.53). Given that she works in the tradition of Whitehead, and in the light of the earlier discussion, it is of course unsurprising that she defends a panentheistic position. More importantly, she develops her theology on the basis of process philosophy and panentheism, thus showing both the possibility and benefits of her position, and more specifically of panentheism. Jürgen Moltmann would be another example of a theologian arguing for panentheism on theological grounds. In his *Spirit of Life [Der Geist des Lebens]*, he introduces the term *immanent transcendent* in relation to God, which can be read as a panentheistic understanding of God (Moltmann 1991, pp.44–51). His motivation for this panentheistic view is clearly theological: “The possibility of perceiving God in all objects and *all objects in* God is established theologically in the understanding of the spirit of God as the power of creation and source of life” (Moltmann 1991, p.48; my translation, my emphasis).¹²² To describe and analyse their positions in detail would certainly be beyond the scope of this thesis – although highly interesting. Finally, as has been hinted at in a previous footnote (n.116), it is possible to identify many positions in the history of theology that could be regarded as panentheistic, and that obviously have been argued for by those holding these positions (Cooper 2007).

Interestingly, it is also possible to argue that a panentheistic view of the world is dualistic, at least on the global level. At first glance that seems to contradict the conclusion, reached in chapter 3, that dualism should be avoided. Mikael Leidenhag claims and argues that panentheistic positions such as those defended by Clayton, Peacocke, and/or Griffin collapse into dualism *both* locally and globally. Firstly, he suggests that panentheism in a sense is already dualistic, since God ‘is more’ than the world. Secondly, Leidenhag points out that, if God interacts with the world, then there are causes that transcend the physical causes, thus resulting in a dualistic ontology (Leidenhag 2016, pp.181–184; Leidenhag 2013, pp.977–979). Likewise, he argues that, by pointing out that there is an ontological difference between God and the world, Griffin in fact “[...] upholds a *dualistic* distinction between God and the universe” (Leidenhag 2016, p.185; my emphasis). In response to his criticism, it can be said that the conclusion in chapter 3 that dualism should be avoided concerns *local* dualism. The reasoning in chapter 3 focused on the question of whether or not the phenomenal world should be understood in terms of dualism, and did not focus on the question of what Leidenhag calls ‘global dualism’. Nevertheless, the question about local

the subordinate, passive partner.[...] The metaphorical pull of familiar male obsession is surely not far from the surface here” (Frankenberry 1993, p.37).

¹²² The German original-text is: “Die Möglichkeit, Gott in allen Dingen und alle Dinge in Gott zu erkennen, gründet theologisch im Verständnis des Geistes Gottes als der Kraft der Schöpfung und der Quelle des Lebens“ (Moltmann 1991, p.48).

dualism in relation to God may in fact be more problematic. Indeed, if there are causes external to the physical world – God’s causes, for example – then it seems reasonable to argue that even the mind or the soul or non-material beings may exert causal influence on the physical, which clearly amounts to local dualism, and contradicts the conclusion, reached in chapter 3, to *avoid* dualism. But panentheism says that the world is *in* God, and thus whatever God causes *in* the world can already be understood as causally *within* the world and still – due to the ‘en’ in pan-‘en’-theism – within God. This should certainly be more carefully spelled out in defence against arguments like those of Leidenhag; but the problem does not seem to be unsurmountable.¹²³

Another important observation to be made is that, although there are good reasons for a theistic process panpsychism, both directly from the mind/body problem and from a process panpsychist position, to adopt panentheism, that conclusion – as already has been pointed out – is not necessary. In relation and response to Peacocke’s argument for panentheism, Willem Drees discusses a similar problem. Presumably his reasoning and conclusion would also apply to Whiteheadian forms of process panpsychism such as Griffin’s, Hartshorne’s, or Clayton’s panentheism. Drees writes: “My point is that we ought to acknowledge the way our knowledge *underdetermines* our worldview and thus the multiplicity of acceptable interpretations regarding ultimate origins and ultimate reality. Panentheism may be an interesting interpretation of the world and the tradition, but it is just one such interpretation” (Drees 2007, p.76). Drees thus emphasises that other theistic approaches – and indirectly other metaphysical frameworks in relation to the world – may also be reasonable, although for reasons other than those given here.

6.1.3 A summary

In summary, a case has been made that, given the process panpsychism suggested in the previous chapters, it is reasonable to prefer a panentheistic understanding of God. To be sure, process panpsychism does not entail panentheism. It is conceivable, for example, that a transcendent God created the world, in accordance with process panpsychism. Nevertheless, it has been argued that panentheism is the preferable position in a process panpsychist setting. Furthermore, it is possible to argue for panentheism by analogy directly from the mind/body problem discussed earlier. Here Clayton’s panentheistic analogy plays a central role in the reasoning. It has also become

¹²³ Interestingly, Leidenhag finally argues that *panpsychism* is the most reasonable position for a *religious naturalist* (Leidenhag 2016). Presumably he has in mind a form of panpsychism not based on Whiteheadian process metaphysics, involving dipolarity and the assumption that God is not a metaphysical exception. Such process panpsychism would – as suggested in the main text – point in the direction of panentheism.

clear, although this has not been elaborated in detail, that there are also other theological reasons for embracing panentheism. Thus the starting point in the sections that follow will be that, within the suggested process panpsychist framework, theism should be understood as panentheism.

6.2 Questions related to the theistic worldview

The next step is to attempt to find relationships and/or consequences of the four features of the suggested philosophical framework and panentheism for the theistic worldview and the theistic beliefs depicted in section 1.4.1. Recall that these were the belief in a human soul, life after and/or before death, the question of divine action and interaction, divine consciousness, a personal relationship with God, theological determinism, God's omniscience, and God's omnipotence. The discussion of the relationship of the latter four features is more closely related to free will, and thus to the last two features (3) and (4) in the philosophical framework.

Obviously, since one main conclusion in chapter 3 was that dualism should be avoided and that consequently the suggested process panpsychist position is supposed to be a monistic view, the human soul *cannot* be understood in a traditional dualistic sense. That is certainly in line with the conclusions reached in section 2.2.4 in relation to the challenges of a modern understanding of consciousness for a theistic worldview. But it should be recalled that many of these challenges – whether the human soul actually refers to anything, whether life after death or before birth is possible, or how divine consciousness can be understood – rely, as argued in chapter 2, on the assumption that consciousness is construed in a physicalist or materialistic framework. In fact, the conclusion that both dualism and reductive physicalism should be avoided in favour of an alternative (presumably monistic) approach has – as has been argued for – led precisely to a process panpsychist approach together with panentheism. So, if not understood in a dualistic sense, and if not reduced to physical phenomena, but instead if the world is thought of in terms of process and all objects possess some form of emergent mentality, sentience, or experience, given the suggestions about free will made in chapter 5, and given (as has been argued in the previous section) that panentheism is preferable to other forms of theism, then what could the human soul be? How should life before birth or after death be construed? How should divine consciousness and divine action/interaction be construed? How should a personal relationship with God be understood? How should theological determinism, omniscience, and omnipotence be construed?

To be sure, the question of how divine consciousness should be understood specifically in the process panpsychist *and* panentheistic setting,

will have important consequences for a personal relationship with God, theological determinism, God's omniscience, and God's omnipotence. Omnipotence and omniscience will be considered together in one subsection, since these beliefs are closely related to each other. Questions about theological determinism will be addressed prior to omniscience and omnipotence, since the question of whether God is all-determining will affect both omniscience and omnipotence. Thus the beliefs and topics will be discussed in the following order: the human soul, divine consciousness and divine action and interaction, life before birth and after death, a personal relationship with God, theological determinism, omnipotence, and omniscience.

6.2.1. The human soul

As already pointed out, the monistic emergent process panpsychist view that has been suggested here excludes a dualistic understanding of the soul. So, clearly, the human soul needs to be reconceptualised somehow to fit both the emergent process panpsychist view and a theological understanding of the soul. Given the above view and the clear (presumably obvious) insight from empirical research into consciousness that our mental functions are dependent on brain functions, the soul must in some sense be – or be understood as – a process closely connected with brain processes. This is also supported by the scientifically oriented 'global workspace theory' and 'integrated information theory' presented in section 2.2.1 and defended by Dehaene and Tononi respectively; both emphasise interrelatedness, interdependence, and the view that consciousness is realised in a networked structure. Yet both focus on different aspects: the former more on cognitive functions, and the latter more on the processing of information. Metzinger's theory also suggests something along the lines of the 'soul-as-a-process'. Recall that, in section 3.2.3, Metzinger's idea of the self – presumably one reason why he avoids the term 'soul' is its 'dualistic' connotations – is as follows: "On the functional level of description, a phenomenal self, again, is not a substance or an individual – be it physical or nonphysical – but an ongoing *process*: the process of self-modeling" (Metzinger 2004, pp.563–564). Yet he thinks that the first-person perspective modelled by this process is reducible to a third-person perspective. But, as has been briefly argued for on the basis of Baker's ideas, this may not in fact be possible (Baker 2013, pp.91–92).

Still, this 'soul' process could possibly be causally reducible to the underlying processes, and of course, perhaps 'soul' might not refer to anything existing independently at all. Thus there seem to be at least the following possibilities: (1) the soul – analogous, for example, to the mind in Metzinger's theory of consciousness, presented in section 3.2.3 (Metzinger 2004, p.322,563–564) – could be understood as the result of a self-modelling process that is specific to the individual; but the phenomenal self in particular,

with its first-person perspective, would still be regarded as reducible to the underlying processes, and thus as an illusion or at least as a merely linguistic construct; (2) ‘the soul’ is merely a linguistic expression, and does not refer to anything existing independently; (3) the soul is a self-modelling process specific to each individual that has an irreducible first-person perspective, and has causal powers of its own.¹²⁴

Certainly, in all three of these possibilities the soul is dependent on brain functions. Also, it is not a problem that the constituting entities have ‘mentality’ in some sense, as in panpsychism. But the first suggestion leads directly back to the question of reducibility, including the reducibility of the first-person perspective, and thus opens the door to the same problems discussed in relation to reductive physicalism, even if the “constituting entities may have ‘mentality’” in accordance with a panpsychist view. The first part of the second possibility obviously avoids this problem. The word ‘soul’ surely may denote whatever we agree it to mean. But the ‘soul’ certainly denotes something in need of description, understanding, and so forth; and it is and was precisely the question of whether the soul is a substance, as in dualism, or whether the soul, for example, forms a unity with the body, and how this can be understood. So pointing out that the soul is a linguistic expression does not add to an understanding of the presumed phenomenon in question. The second part, which again focuses on dependency, apparently also leads back to the questions of reducibility and thus to the discussions in chapter 3 and 4; it seems to conceal a rephrasing of the claim that every event can be reduced to physical events.

But what about the third possibility? Firstly, it is in accordance with both a process and a panpsychist view. Whether the constituent parts of the ‘soul’ have some form of ‘mentality’ or not, and whether they ‘form’ the soul by means of a process, is independent of the understanding of the soul itself as a ‘process’. This would surely have been correct for the first suggestion, too. But having causal powers of its own is more problematic. Granting that the soul has causal powers of its own would in a sense – in contrast to the second possibility – assert that the soul is ‘real’. But would that not in turn lead back to a path towards dualism which, as has been argued, should be avoided? If the process constituting the soul is understood in terms of strong emergence, as elaborated in chapter 4, then surely this understanding would come close to a dualistic understanding. But it has also been argued, on the one hand, that in emergent process panpsychism the form of emergence presumably should be of the kind suggested by Deacon; and, on the

¹²⁴ The specification of ‘self-modelling’, which seems to be necessary in relation to human *self*-consciousness, may be too restrictive. Surely, some human and non-human individuals are not self-conscious; and thus there may not be a ‘self-modelling’ process in the sense that something similar to the self arises. Nevertheless, one would most likely wish to regard such individuals as ‘having a soul’. Therefore it may be more appropriate to use a more general description of the soul as ‘a process of the mental functions’ or simply ‘a process’.

other hand, that the CCP should be understood as a *methodological* principle. Such emergence would not encounter the problems discussed in section 4.1.2. Furthermore, an understanding of emergence based on the ideas of Deacon would also grant that the mentality required for the first-person perspective may emerge from the mentality inherent in the constituting entities of nature. In other words, the proposed panpsychism grants that the soul inherits the ‘mentality’ presupposed in a panpsychist setting. Also, understanding the CCP as a methodological principle would not lead to the problem of being *forced* to understand any causal power as physical, which would presumably have led back to a reductive physicalist approach. Thus, I conclude, the human soul should be seen as a ‘process’ with first-person perspective, that also has causal power.

So, in a sense, the soul as a process dependent on underlying physical processes, such as processes in the brain, can be regarded as forming a unity with the body, but also has – as an emergent process in a panpsychist setting – causal power and a first-person perspective, and thus does not need to be regarded as ‘non-existent’ or illusory. But does this stand in opposition to theological understandings of the soul? Of course, the soul has often been (and still is) associated with a dualistic understanding; but there is also a strong tradition in theology of regarding the body and the soul as a unity. Many theologians have repeatedly pointed out that the writings in the Old Testament in particular *do not* entail a dualistic view of human nature. On the contrary, it seems that the Abrahamic traditions suggest instead some form of a holistic view of human nature. Joel B. Green (1956-) argues, from an analysis of how human nature is understood in the Bible, that neither the Old Testament nor the New Testament actually entails a dualist view, although the New Testament uses the tripartite terminology of πνευμα, ψυχη, σωμα – spirit, soul, and body – which at first glance seems to imply a dualist view of human nature. On the contrary, he concludes that “[...] human beings must be understood in their fully integrated, embodied existence”, that “(h)umans do not possess a body and soul, but are human only as body and soul” and that “[...] the New Testament is not as dualistic as the traditions of Christian theology and biblical interpretation have taught us to think [...]” (Green 1998, p.158,173). Likewise, Moltmann underlines that “(t)he fundamental anthropological distinction of body and soul is alien to the tradition of the Old Testament [...]” and that to the Old Testament tradition “(a)n inner hierarchy, according to which the soul should be thought of as being above and the body below, the soul as ruling, the body as serving, is alien”¹²⁵ (Moltmann 1985, p.260,261; my translation). Clearly, Moltmann attempts to

¹²⁵ The original text in German is: “Die anthropologische Fundamentalunterscheidung von Seele und Leib ist den alttestamentlichen Traditionen fremd [...]” and “Eine innere Hierarchie, nach welcher die Seele oben, der Leib unten, die Seele herrschend, der Leib dienend zu denken sind, ist fremd” (Moltmann 1985, p.260,261).

avoid the dualistic view of human nature as divided into body and soul, and seeks support for this in the biblical tradition. Keith Ward (1938-) extends this line of thinking to Jewish and Muslim views, writing: “In speaking of the human soul, these religious traditions do not necessarily mean to introduce a separate and distinct spiritual entity, related in some external way to the human brain and body” (Ward 1998, p.157). Ian Barbour (1923-) suggests rather that “(t)he Bible looks on body, mind and spirit as aspects of a personal unity” (Barbour 1990, p.207). Again, this emphasises the claim that the Bible does not specifically support a dualistic view of human nature.

Returning to the soul as process, accounts of the human soul within the Whiteheadian tradition such as Griffin’s fit well into the suggested understanding of the soul. Using Whitehead’s terminology, Griffin describes the soul as “[...] a personally ordered society of dominant occasions of experience” or “[...] a temporally ordered society of higher-level occasions of experience” (Griffin 2001, p.120). The latter description presumably attempts to capture the process aspect by using the term ‘temporally’ and the panpsychist aspect by the use of higher-level occasions of experience, suggesting that experience goes ‘all the way down’. John Polkinghorne proposes that we understand the human soul as an “information bearing pattern”. This extremely complex pattern is thought to develop over time in close relation to, and supported by, the matter constituting the body (Polkinghorne 2011, pp.104–105). But it should be noted that Polkinghorne rejects Whitehead’s position on the grounds that it is too close to panpsychism, together with the unsupported claim that “(p)anpsychic ideas are far from persuasive” (Polkinghorne 1989, p.19). Yet, with regard to research on consciousness, he interprets the results from neuroscience as encouraging the view that we are *embodied* beings; and instead of dualism, he suggests a dual-aspect monism – the view that matter and the mental are two aspects of the same reality (Polkinghorne 2011, pp.65–67). Of course, dual-aspect monism is a position close to the suggested emergent process panpsychist view; nevertheless, Polkinghorne does not go so far as to consider panpsychism seriously. Even in relation to panentheism, although Polkinghorne is attracted by the idea of a dipolar God, he has objections based mainly on the thought that it is not personal enough, and cannot solve the problem of God’s vulnerability to physical changes (Polkinghorne 1989, pp.19–25, 91–92; Polkinghorne 2011, pp.99–101; Polkinghorne 2000, p.156).

It is also worth observing that the official view of the Catholic Church emphasises the unity of body and soul: “The unity of soul and body is so profound that one has to consider the soul to be the ‘form’ of the body; i.e., it is because of its spiritual soul that the body made of matter becomes a living,

human body; spirit and matter, in man, are not two natures united, but rather their union forms a single nature”¹²⁶ (Catholic Church 2000, para.365).

In section 1.4.1 n.15, it was mentioned that an understanding of the soul is also related to how immaterial beings should be construed. Thus a brief comment on the belief in immaterial beings is in order. The following questions could be posed: Why would one believe in immaterial beings if the soul is not immaterial? And it can also be asked how any *immaterial* power could causally affect the world if the physical world is causally closed? Obviously, if one assumed the existence of *immaterial* beings in the sense that there is some immaterial substance apart from the physical, then one would have to return to a dualistic worldview. Thus the understanding of the soul as a self-modelling process in *monistic* emergent process panpsychism seems to be at odds with the existence of immaterial beings. It would be odd, to say the least, to assume the existence of some immaterial substance in relation to supposed immaterial beings, while at the same time proposing a monistic view in relation to the soul, and it is doubtful that an approach that on the one hand claims to be monistic in relation to humans, but on the other hand is dualistic in relation to immaterial beings would ultimately be consistent. So it seems that the only way to grant the existence of immaterial beings is to understand them in a similar way that that suggested here in relation to the soul – i.e., as processes closely related to the physical, possibly inheriting some form of mentality by means of the presupposed panpsychism.

It is surely conceivable that there are processes in the world, in nature, that could be regarded as *unities* but that we may not yet have recognised as such, and that possibly are existent in the same sense that the soul could be regarded as existent. But the question is, firstly, whether any of the ‘traditional’ beings such as angels or demons could successfully be associated with such processes; and further, whether it would be reasonable to denote such beings as *immaterial*. After all, the term ‘immaterial’ *strongly* suggests a dualistic worldview. Surely, understanding the CCP merely as a methodological principle would open up the possibility of dualistic causation by, for example, immaterial beings. Yet whether it is reasonable and successful to follow an emergent process panpsychist approach in relation to them would have to be elaborated in detail, which is not the purpose of this thesis. But it can at least be said that, if emergent process panpsychism is presupposed together with the other features mentioned in the beginning of the chapter – the problems related to causality might be avoided by assuming the CCP to be a methodological principle – then one way of *possibly* understanding ‘immaterial’ beings – if we stick to this slightly inappropriate and confusing

¹²⁶ The soul as the form of the body is – as has been mentioned in sections 1.4.2 and 3.1 – an idea that can be traced back, for example, to Aquinas and Aristotle (Aquinas ST I-II Q76 A2; Aristotle *De An* II.1 412a).

terminology – would be to understand them as processes in nature, for example, as hinted at above.

In any case, these examples may suffice to illustrate that a view of the human soul, in accordance to Metzinger’s ideas but without the reductive physicalist presuppositions, as “a self-modeling process specific for each individual, which has an irreducible first-person perspective and has causal powers of its own”, is supported and can be embraced by theological thinking both close to and/or within the process philosophical tradition.

6.2.2. Divine consciousness and divine action and interaction

In section 6.1 a case has been made that, given a process panpsychist ontology, panentheism is the preferable position. In the light of the *panentheistic analogy* introduced in section 6.1, a panentheistic understanding of God has direct consequences for how the mind of God (or divine consciousness) and its interaction with the world should be understood. Thus, in this subsection the focus will be on divine consciousness, divine mind, and divine action/interaction. (For the sake of simplicity the term ‘divine interaction’ will henceforth be used for ‘divine action and/or interaction’.) One of the major tasks will be to discuss some of the consequences for these questions, given a panentheistic and process panpsychist understanding of God and the other features of the philosophical framework suggested at the beginning of the chapter.

The results about determinism, the CCP, and the proposed understanding of free will will also have to be considered, and may have consequences for an understanding of divine action. To start with, it is clear that if (causal) determinism is rejected, then there still is a possibility of ‘hidden’ deterministic interaction wherever indeterminism occurs. As has also been suggested by proponents of ‘hidden determinism’, it is certainly possible that for human observers there is some unknown action behind indeterminism. But that is not an argument for determinism as such. It is pointed out, rather, that it still is possible that determinism – either theological or causal – might be true after all. Likewise, if the CCP is understood merely as a methodological principle, then at least in principle it is possible that there may be some influences and/or actions that are not captured by the laws of nature derived from this principle. Also, it seems that the process panpsychist idea of every entity having both mental and physical aspects in combination with panentheism opens up the possibility that God’s actions and interactions are not understood as supernatural interference in a world otherwise governed by strict natural laws. Several theologians have developed ideas about divine consciousness and interaction, with a focus on either of the above-named

features or a combination of them.¹²⁷ In what follows, some examples mainly related to the process panpsychist and panentheistic approach suggested here shall be presented and briefly discussed.

The understanding of divine consciousness can again be seen in the light of the panentheistic analogy and process panpsychism. In section 6.1 it was concluded that panentheism is preferable, given process panpsychism in a theistic setting. If the human soul, as suggested here, is construed as a process then, using the panentheistic analogy, an understanding of God as process follows. The analogy possibly need not be restricted merely to more general questions concerning the relation of divine consciousness to the world in analogy to the mind/body relation: it could also be applied in a fruitful way to some more detailed understanding of this relation. Here, the works of Arthur Peacocke, amongst others, already referred to in section 4.1, supply some interesting suggestions and lines of reasoning. Recall from section 4.1.2 that Peacocke argued that causality should not be understood in the common linear sense, but rather as a form of top-down or joint causation. Further, it has been suggested in sections 4.1.2.4 and 4.1.3 that this modified causation should rather be called a networked form of causation, emphasising the network structure of the brain and the interconnectedness and interdependency of neural processes. Clearly, according to the panentheistic analogy, given this understanding of causation, the mind of God, divine consciousness, should be understood not only as a process but also as God's being 'in the world', as networked and joint. In other words, the parts of the body and especially of the brain are interconnected; the mind can affect the body to a great extent, and the mind is affected by the body. The corresponding ideas in relation to God and the world would be that the parts of the world are interconnected, that God can affect the world in the scope of what is logically and metaphysically possible, and that God is affected by everything in the world. So, analogous to the relation between the mental and physical, where the mental acts top-down or whole-part on the brain as a whole, a panentheistic God would act top-down or whole-part on the joint or networked causal nexus of the world (Clayton 1997, pp.82–106, 232–265; Peacocke 1993, pp.135–184; Peacocke 2006, pp.274–276).

Thus, firstly, divine consciousness should be linked to the entire world in a networked causal relationship; and secondly, this networked causal relationship of the entire world should allow for both divine action and interaction without breaking the natural laws or having to return to some form of dualism with respect to causality, as in the argument of Leidenhag presented

¹²⁷ It is noteworthy, although possibly unsurprising, that many of the thinkers mentioned and discussed by Cooper in his historical account of panentheism also occur and are discussed in Skrbina's *Panpsychism in the West* (Cooper 2007; Skrbina 2005). Some examples would be Gustav Fechner, Spinoza, Charles Sanders Peirce, William James, Teilhard de Chardin, Alfred N. Whitehead, Charles Hartshorne, and David Ray Griffin, amongst others.

in section 6.1.2. These relationships can be seen as a slightly more spelled out version of the idea of panentheism, for surely, if the world is in God, and if, using the panentheistic analogy, the networked structure of the soul-mind-brain relationship transfers to the God-world relationship, then divine consciousness should be closely connected to the world, allowing for action and interaction. In fact, based on the above understanding of causality, a panentheistic approach to how divine consciousness interacts with the world thus seems to provide a quite obvious understanding of this relationship. Peacocke concludes, emphasising the ‘non-identical, transcendent’ part, that “[...]the problem of God’s interaction with the world is mitigated [...] because the total web of natural events, in this perspective, is viewed as in itself the creative and sustaining *action* of God but, of course, not identical *with* God” (Peacocke 1999, p.235).

It is not obvious, of course, that the world should in fact be understood as a causal network, analogous to how neurons are linked in a network. In fact there is a dis-analogy between a neural network and the world, with neurons having direct connection to other neurons. Nevertheless, every part of the world surely is causally connected to its surroundings; thus the world could still be seen as a causal network – although not exactly of the same kind as neurons. Also, given a panpsychist understanding of the world, the mental part of every entity would interrelate with the world even at the most fundamental level. Furthermore, given panentheism, the world would be ‘in’ God and God would be more. Thus anything in the world would be interconnected with everything else by being in God. Also, the process philosophical approach provides the kind of connection between fundamental entities that strengthens the analogy between mind/body and God/world. For example, prehension in Whiteheadian process philosophy, as introduced in section 4.2.1.1, certainly establishes an interconnection at the most fundamental level. But even in a more general account of process philosophy there would still be the interactive relatedness between ‘all that is’, and the world could be regarded as an enormous process. Unsurprisingly, Ian Barbour argues that top-down causality, as involved in the panentheistic analogy, is supported by process philosophy. He writes: “*Top-down causality* is defended in process writings. Process thought is *holistic* in portraying a network of interconnected events (Barbour 2002, p.32).

Concerning the question of which parts of the world are involved in the causal connection between God and the world, Peacocke suggests importantly that the connection between God and the world should be *everywhere*, and need not be restricted to certain locations. Also, the interaction should take place at *all* levels, even if the intensity and precision increases to the personal level of humans. This divine influence would then be holistic (Peacocke 2006, pp.274–276; Peacocke 2007, p.46). Griffin describes divine interaction in terms of Whiteheadian process philosophy. He applies a

panentheistic approach that is very similar to the panentheistic analogy used by Peacocke and Clayton, allowing for the *persuasion* by God, which is usually suggested by process theists in contrast to more coercive forms of interaction (Griffin 2001, pp.143–148). Peacocke does not specify how this ‘causal joint’ or ‘ontological gap’ – a term he sometimes uses – is realised; but, more importantly, he argues that by placing this joint everywhere, the problem with a *causally closed* world is avoided, since the causation involved would always be ‘in’ the world (indicated by the ‘en’ in the panentheism) (Peacocke 1999, pp.234–235).

To be sure, together with the CCP, causal physical determinism would seem to cause problems for divine interaction, for if everything is causally determined and no external cause is to be allowed for, then either God or the divine must be physical – that is, within the sphere of all causal interactions, God determines everything via causal determinism, a position to be discussed later – or God simply cannot interact. In a note McFague comments on the literature using the analogies based on the mind/body problem, stating that they have in common “[...] the desire to avoid occasional or interventionist divine action while stressing the continuity and thoroughness – but *non-controlling and nondeterministic* – character of action” (McFague 1993, p.253 n.18; my emphasis). In his discussion of quantum indeterminacy, Clayton briefly addresses and acknowledges the problem of determinism. Rejecting determinism, he argues that, given the present state of research in the natural sciences, the suggested indeterminacy would allow for certain kinds of divine interaction, including persuasion, divine action by quantum effects, and amplified effects in dynamic systems, but *not* miracles in the classical sense, understood as breaking or overriding the laws of nature. Obviously, as also argued in chapter 5, given that indeterminism does not cause problems for free will, rejecting causal physical determinism – at least in principle – also opens the way for human free will (Clayton 1997, pp.208–215). Either way, the overall picture is that, if divine interaction is to be made intelligible, and if God is *not* all-determining, then causal determinism should be rejected, and only miracles in the classical sense of breaking natural laws might then cause problems in relation to natural science (Clayton 1997, p.215).

Here one should remark that miracles need not be understood in this strict sense. Polkinghorne, for example, focuses instead on the religious meaning and significance of miracles, and that they are “radically unexpected” (Polkinghorne 1989, pp.53, 58–59). Thus, given Polkinghorne’s understanding of miracles, they need not be seen as events that break the laws of nature (Clayton 1997, p.205). The above whole-part understanding of divine interaction suggests that the world is ‘open to God’, a position that has also been argued for, unsurprisingly, on theological grounds by Moltmann (Moltmann 1985, pp.212–213).

Although Polkinghorne rejects both panentheism and panpsychism (Polkinghorne 1989, pp.19, 24–25), his position is of interest here, since he is nevertheless sympathetic to the idea of an analogy between the mind/body problem and God’s interaction with the world that is similar to the pantheistic analogy, but without involving panentheism. Polkinghorne places the locus of divine interaction in the unpredictability of dynamic systems (Polkinghorne 2011, pp.84–91). Since he finds quantum theory incompatible with the theory of dynamic systems, his account of interaction cannot rely on quantum indeterminacy (Polkinghorne 2011, pp.41–41). But, since he rejects panentheism and panpsychism, he also cannot make full use of the pantheistic analogy in his account of divine interaction. This leads to at least one *major* problem to be highlighted here. Since dynamic systems are mathematically *deterministic*, they can be predicted *in principle*, although for all practical purposes this is impossible, due to the ‘sensitive dependence on initial conditions’.¹²⁸ Thus he uses a deterministic description of systems to back up his own claim of indeterminacy, which renders his theory inconsistent, at least in this respect (Smedes 2004, pp.104–105; Clayton 1997, pp.206–207). Furthermore, if God acted via dynamic systems, which are deterministic, would God not be able to know the future of these *deterministic* systems, and would this not lead to theological determinism? This problem to some degree highlights the importance and strength of panentheism if divine interaction is to be understood in analogy to the mind/body problem.

It has already become clear that rejecting causal determinism in relation to divine interaction is important; but what would be the value of understanding the CCP merely as a methodological principle? Surely, if the CCP is so understood, then this may help to solve some of the problems discussed in relation to mental causation and strong emergence in section 4.1.2. But does this approach have any bearing on the question of divine interaction? Certainly, as Polkinghorne points out, the decision whether to understand the CCP as methodological or ontological is metaphysical (Polkinghorne 2011, pp.40–41). Also, it seems that Peacocke’s pantheistic approach to divine interaction as whole-part influence, or Clayton’s use of the pantheistic analogy for understanding divine interaction, avoided the question of whether or not the world is causally closed in principle. In fact, since panentheism, in terms of the model of whole-part influence, can place the causation of divine interaction ‘*in*’-to the world, the CCP is not broken, and thus the problem need not be addressed. Peacocke concludes that “[...] divine causative influence would never be observed by us as a divine ‘intervention’ [...]” (Peacocke 1993, p.163). But it would obviously be possible to argue that, since God is more than the world, there is nevertheless a ‘gap’ or boundary between the transcendental part of God and the immanent part of God, and

¹²⁸ The term ‘sensitive dependence on initial conditions’ is one of the three defining conditions in a standard definition of chaotic systems in mathematics (Devaney 2003, p.50).

that bridging that ‘gap’ would nevertheless violate the CCP. But it would also be possible to understand this ‘gap’ instead as a ‘boundary within God’, which is presumably what panentheists have in mind, and which would *not* violate the CCP. Nonetheless, similar to rejecting determinism in relation to free will, thus allowing for an open future in principle, rejecting the CCP as a *metaphysical* claim would allow for the world being causally open with respect to both mental human causation and divine interaction. Such a move would of course also open the way to dualistic approaches, both locally in relation to the mind, and globally in relation to God. Such ‘causal openness’ should certainly *not* be understood as ‘anything goes’, but rather that there *may* be cases in which the causes involved cannot successfully be traced back to entirely physical causes or cannot be described merely in terms of physics. Nevertheless, understanding the CCP as merely a methodological principle is not necessary for an adequate understanding of divine interaction in a panentheistic approach. Further, a panentheistic or panpsychist approach does not encounter major problems in relation to the CCP. Recall from section 4.2.2.1 that, in the case of panpsychism, both the mental and the physical are bound together, and already have the power of exerting causal influence (Griffin 1998, p.235). So the observation that neither panpsychism nor panentheism would contradict the CCP could in fact also count as an argument in favour of these positions.

Another interesting and presumably important consequence of the above understanding of God as process and divine consciousness is that God’s mind being connected to the world by joint networked causation would emphasise *creatio continua* and God’s creative activity *in* the world. Certainly, emphasising *creatio continua* need not, and does not, rely heavily on a process understanding of God, but depends rather on the immanence of God emphasised in the suggested panentheistic view. Nevertheless, a world in process with a panentheistic God and a stronger focus on God’s immanence also should have a greater focus on *creatio continua* – i.e., the creative power of God in process. Here one may suspect that in terms of the doctrine of *imago Dei*, if understood as an *analogia relationis* as in the case of Jürgen Moltmann, for example, God’s creative activity should be reflected in the world, and more specifically in humans (Moltmann 1985, p.90). Philip Clayton suggests that it may even be justified to reverse the *panentheistic analogy* after having reflected theologically upon the nature of divine consciousness and its relation to the world, and to return with theological interpretations to natural science, analogous to a panentheistic understanding of God (Clayton 1997, p.261). Some possible suggestions for this line of reasoning will be given later, in the final chapter.

Also, since divine consciousness appears to be connected with the entire world, God should obviously have total knowledge of the world. So some form of omniscience certainly is granted. But since the world is understood as being in process, and God is understood as process, the divine mind

or divine consciousness apparently cannot remain unchanged or immutable; and this contradicts some of the more traditional conceptions of God. Again, this may not be surprising, since panentheism in a sense already includes the idea of bilateral relationship – recall Gregersen’s definition – in which God is affected and thus is *not* immutable. Peacocke expresses this idea when, instead of regarding God as ‘being’, he concludes rather that God should be understood as ‘becoming’ (Peacocke 1993, pp.184–185). Whether or not omniscience would, for example, include divine *foreknowledge* is so far unclear. Rather, since the world here is suggested to be understood in a process panpsychist framework, all entities have some degree of freedom, allowing for novel events; and thus omniscience presumably should not include divine foreknowledge. Also the scope of God’s power may in fact be limited. These questions will be further discussed later, in section 6.2.6. Moreover, since in panentheism the entire world is in God, so obviously is every human. Apart from the possibility of encountering God or the divine anywhere in the world, it should be possible for humans to encounter God within themselves. This obviously also points to implications for a personal relationship with God.

Summarising the above, it has become clear that the pantheistic analogy provides an important tool to understand divine interaction and divine consciousness, independently of whether or not it is used within process theism. General providence in the sense of God’s continuous creation, for example, is clearly possible on the basis of the immanence of God found in panentheism. Special providence is also possible insofar as it is not understood as breaking the laws of nature. On the above reasoning, God could specifically and intentionally act upon the world through whole-part causation, bringing “[...] about the occurrence of particular events and patterns of events [...]” (Peacocke 1993, p.182; Peacocke 2006, p.274). But God’s influence would not be seen as ‘intervention’ (Peacocke 1993, p.163). Miracles seem possible if they are understood in the way Polkinghorne has suggested. In that case, they could be seen as extraordinary cases of special providence that have greater religious meaning and significance.¹²⁹ Also, humans may be influenced not only by being part of the world’s causal nexus, but also directly by persuasion, as suggested by Griffin, which would not interfere with human free will or decision-making (Griffin 2001, pp.143–148). Reversing the pantheistic analogy was suggested, and will be discussed in the

¹²⁹ Clearly, for a Christian believer one of the more important cases of miracles would be the resurrection of Christ. Peacocke understands the resurrection as Jesus’ life “[...] taken in its full identity and personhood through death ‘up’ into the very Being of God” (Peacocke 1993, pp.316, 332). This, I suggest, should be understood rather as a recreation in God or the mind of God. Polkinghorne has something similar in mind when he describes resurrection as a reconstitution of the pattern of the mind or soul in God’s mind (Polkinghorne 1989, pp.101–102). A recreation in God or the mind of God, however, need not be seen as a breaking of natural laws.

final chapter. If theological determinism is rejected, then apparently causal determinism also has to be rejected if divine interaction is to be made intelligible. So the reasons given here in support of a rejection in fact support the conclusion reached at the end of chapter 5. In the case of the CCP, based on the pantheistic analogy, divine interaction does not rely heavily on a rejection of this principle, or even on understanding it as a methodological principle. To be sure, understanding it as a methodological principle would still have the advantage of allowing for, although not entailing, ‘causal openness’ of the world, and thus even more dualistic approaches to divine interaction may become intelligible. Finally, a personal relationship with God will also be affected, and questions about some of the traditional attributes of God such as omniscience and omnipotence will be raised, all of which will be discussed in sections 6.2.4 and 6.2.6.

6.2.3. Life before birth and after death

Much more pressing, highly interesting, and certainly dependent on an understanding of the soul is the question of life before birth and/or life after death, and how a process panpsychist ontology may relate to this question. This issue is obviously also of great importance for many religious believers and, unsurprisingly, many theologians and process theologians have written about and discussed life after death, immortality, and/or related topics. There are several more-or-less important reasons for believing in life after death. Some of them are clearly of a more theological nature, whereas others are of a general character. Following Griffin, it is possible to identify at least four dimensions in relation to the prospect of death. First, there is the question of ultimate meaning. This question is closely related to belief in a divine being or God; for it seems that, without a higher meaning, the possible existence of God would become questionable. So life beyond the physical life seems to be important if nihilism is to be avoided. The second issue is related to ultimate justice; it seems problematic to understand moral injustice without the prospect of life after death. Historically, Kant *postulated* life after death – together with the existence of God and human freedom – for similar reasons in his *Critique of Practical Reason* (Kant 1788 KpV A216-240). Thirdly, many people clearly long for a longer life, which cannot be fulfilled if life does not continue in some form after death. Fourth, there seems, at least in religious persons, to be a desire for ‘salvation’, which presumably cannot be met in general if there is no existence beyond death (Griffin 2001, pp.230–233).¹³⁰

¹³⁰ Obviously it is possible to think of other, possibly similar, reasons for why beliefs about death and afterlife are significant. Hasker and Taliaferro give at least three such reasons. “So, we suggest that the topic of an afterlife is warranted for at least three reasons: it is important if you love persons in this life and hope for their enduring flourishing (or hope they are not

Having said that, before turning to a brief discussion of the issue, it should be noted that there is a difference between life after death or before birth and immortality. The former does *not* necessarily mean that the soul lives on *forever*, whereas the latter clearly suggests *eternal* or *everlasting* life. Also, in relation to immortality, it should be observed that it is possible to introduce the distinction between *subjective* and *objective* immortality. Both terms are frequently used in the process philosophical literature (e.g. Ogden 1977, pp.225–229; Griffin 2001, pp.234–246; Cobb & Griffin 1976, pp.119–128; Barbour 2002, p.117). Subjective immortality could be understood as “[...] to survive death and continue to exist as an experiencing subject”, whereas, in objective immortality, “[...] each of us influences the other men who come after him and thereby acquires an existence beyond the termination of his own subjectivity” (Ogden 1977, p.225). In the latter description, the emphasis should be on the last part, “an existence beyond the termination of his own subjectivity”, since such existence need not be connected just with other humans or human society, but could also be realised in God. Similarly, William Hasker (1935-) and Charles Taliaferro (1952-) distinguish between a personal afterlife and “[...] ‘survival’ in the memory and honour of the community [...]” (Hasker & Taliaferro 2014). They also make a distinction between continued existence after death and views involving recreation and/or resurrection (Hasker & Taliaferro 2014). But before turning to an analysis of some possible process panpsychist understandings of life after death and finally also before birth, one first intuitively plausible observation in relation to an understanding of the soul as a process (which in some sense is dependent on the underlying brain functions) can be made. It seems that, if the underlying brain functions related to the ‘soul-process’ come to an end, then the ‘soul process’ should also come to an end; and in that case life after death and/or immortality would be impossible.

Another important remark to be made is the following: It does not seem possible *systematically* to gather empirical evidence about life after death or life before birth. Certainly, if it were possible systematically to gather evidence from persons about continued existence – irrespective of the form this existence might take – then it would seem plausible that we would not regard the end of the body’s functions as the ‘point of death’; and thus this evidence, if it existed, would not be about life after death or – in the cases of reports from earlier lives – about life before birth. Also, first-person reports from near-death experiences are precisely only *near-death* experiences. They do *not* provide information about the time after death. Given this lack of empirical evidence, it is reasonable to assume that, at best, one may

annihilated or meet a worse fate); it is important to think about the implications of there not being an afterlife (or there being one) in terms of how to understand what is important to you now; and it is important to consider for historical reasons: speculation and beliefs about life after death have existed through much of human history” (Hasker & Taliaferro 2014).

discuss whether life before birth, life after death, and immortality are *metaphysically possible*. It is worth recalling at this point that dualism would presumably not encounter any major metaphysical problems in relation to life before birth and life after death. In any case, in the suggested metaphysical framework of emergent process panpsychism, the question would be whether this approach in some form *allows* for life and/or existence beyond corporeal life. Since the other features of the philosophical framework suggested at the beginning of this chapter are not directly related to this issue, they will not be discussed here.

Having said this, it is time to turn more specifically to the question of immortality and life after death. For the moment, the question of life before birth, although related, will be put to one side. Taking the distinction between objective and subjective immortality as a starting point, there are four cases: either objective immortality or subjective immortality is possible, both of them are possible, or none is possible. The case in which only subjective immortality is possible leads directly to the case of both forms of immortality being possible, at least if panentheism is presupposed; for, if a person subjectively continues to exist in some sense beyond life in the physical body, this existence – being a part of the world – would still, on the panentheistic assumption, be within God, and thus objective immortality would also be automatically granted. The next case would be that only objective immortality is possible. Here process philosopher Charles Hartshorne argues in the following way in relation to subjective immortality. Firstly, he draws a parallel between spatial and temporal finitude. It seems obvious and logical that, since humans are neither God nor the universe, they are spatially finite. The same – so Hartshorne argues – is reasonable to conclude in relation to temporality. The logic of how God is understood – that is, as being all-encompassing and everlasting, amongst other properties – seems to imply that humans as non-divine beings must be finite in *both* respects (Hartshorne 1962, pp.245–246). Thus subjective immortality is already ruled out by Hartshorne. It should be noted here that Hartshorne does *not* equate the denial of subjective immortality with the ultimate *destruction* of the soul, but only with the idea that there will be no further ‘actualisation’ (Hartshorne 1962, pp.249–251). The possibilities left to him are thus either some restricted form of life beyond the physical that is *not* everlasting, and/or some version of objective immortality. Here he emphasises that objective immortality, understood as ‘social’ immortality, has its limitations. Not only is it conceivable that many deeds and works of a person may not actually continue ‘living’ in other humans or in society, but also that human society as such will eventually come to end, and hence such ‘immortality’ is not in fact *eternal* (Hartshorne 1962, pp.251–251). Thus he concludes that “[...] our adequate immortality can only be God’s omniscience of us” (Hartshorne 1962, p.252). Process philosopher Schubert Ogden (1928-) also rejects subjective

immortality, emphasising in his argument the idea specifically from process philosophy of ‘perpetual perishing’, and arriving at a similar conclusion: “This [...] is the promise of faith: that, whatever else may befall us and however long or short may be the span of our lives, either here or hereafter, we are embraced in every moment within God’s boundless love and thereby have the ultimate destiny of endless life in and through him” (Ogden 1977, p.226).

Although both of them clearly work and argue in the process philosophical tradition, neither Hartshorne’s line of argument nor Ogden’s – which is very similar – relies heavily on process ontological assumptions, on an understanding of the soul as a process, or on the other proposal of panpsychism in combination with emergence. Presumably, similar conclusions could be made within other ontological frameworks. Rather, the question could be posed of whether a process ontology is in fact problematic in relation to life after death. It seems, at least at first glance, that the idea of some enduring entities, possibly substances, is crucial to continued existence after death (Brüntrup 2010, p.245). Thus the question is whether a process ontology would in fact *favour* the case that *neither* subjective *nor* objective immortality is possible. It is also supposedly the above problem of enduring entities that, as hinted earlier, may be one reason for favouring dualism and possibly even substance dualism in relation to life after death. Nevertheless, Brüntrup realises this issue, and discusses Whiteheadian process panpsychist ontology in the light of this problem. He also clearly acknowledges that being in process also involves ‘perishing’. “The world as radical becoming is always also involved in a permanent ‘perishing’” (Brüntrup 2010, p.249).¹³¹ But he does *not* propose the implausibility or impossibility of subjective immortality. He introduces the concept of ‘genidentity’ – the idea that the identity of two objects is established by one developing from the other. In the case of a person, what is needed is an ‘immanent causal connection’ between successive states of a person. This is normally granted in life. In the case of possible life after death, Brüntrup argues that God could causally link the last ‘earthly’ event in a human life to the first in a life beyond. At first it may seem that such connections cannot be immanent, since God *externally* interferes; but – so Brüntrup argues – such links may be seen only as necessary conditions for genidentity. The sufficient condition for genidentity would be the specific first-person perspective developed in life.¹³² This per-

¹³¹ The original German text is as follows: “Die Welt als ein radikales Werden ist immer auch in einem permanenten ‘Sterben’ begriffen” (Brüntrup 2010, p.249).

¹³² Similar problems and reasonings are used in Christian materialism when arguing that the resurrected body of a person can be identified with the body of the person during her ‘normal’ life (Brüntrup 2010, p.266). Some interesting and relevant ideas are presented and discussed in relation to Christian materialism by, for example, Hasker, van Inwagen, Baker, and Dean Zimmermann (Hasker 2011b; Baker 2001; van Inwagen 1978; Zimmermann 1999). In particular, Baker’s reasoning that her ‘constitution view’, in combination with her understanding of

spective is clearly immanent, and thus Brüntrup concludes that ‘genidentity’ is still warranted and that a process panpsychist ontology does not conflict with life after death – or even with the Christian concept of resurrection. He also emphasises that it could be reasonable in process panpsychism to assume that, in an existence ‘beyond’, humans should have some form of body, although this ‘body’ may be radically different (Brüntrup 2010, pp.266–268). The first-person perspective referred to by Brüntrup could also be associated with the soul as a process, and thus it seems that it is possible to construe some form of both objective and subjective immortality, or at least life after death, in a process panpsychist framework.

Even Griffin argues for the possibility and plausibility of life after death and for the possibility of both subjective and objective immortality. Firstly, he points out that Whiteheadian process philosophy does *not* rule out the possibility of subjective immortality. Instead, it is neutral. Analysing Hartshorne’s reasoning about subjective immortality, Griffin underlines that Hartshorne’s line of argument merely leads to the conclusion that life after death cannot be *endless*, cannot be understood as immortality (Griffin 2001, pp.236–240). Thus the possibility of life after death remains. In his argument for the plausibility of life after death, he claims – in contrast to the reasoning earlier in this section – that there is “[...] a massive amount of scientifically verified empirical evidence” for non-sensory experience which directly or indirectly is taken as support for the *plausibility* of life after death (Griffin 2001, p.242). It is obviously beyond the scope of this thesis to discuss this evidence in detail, but it should be noted here that Griffin uses out-of-body experiences – OBE – as evidence for his claims (Griffin 2001, p.243). But, although the *possibility* of such experiences is not ruled out in principle by explanations of the kind referred to in section 3.2.3, much of the evidence in question for OBE is certainly questionable at the very least. Presumably, Griffin would need to meet similar criticism in relation to the other evidence he presents. Nevertheless, in the end, although Griffin believes that “[...] the actuality of life after death [...] is considerably more probable than not”, he arrives at the more tentative conclusion that “[...] process philosophy supports the *possibility* of life after death” (Griffin 2001, p.244).

At this point, it should be noted that several of the forms of ‘afterlife’ and/or immortality discussed above involve God or the divine. In the case of Brüntrup’s account, God links the last earthly event to the first in a life beyond. In some of the cases of objective immortality, the soul continues its

a first-person perspective, would provide a coherent alternative to understanding the Christian doctrine of life after death is interesting in relation to the topics discussed in this thesis since, as has been briefly mentioned in section 4.1.2, she uses her ‘constitution view’ in her arguments against reductive physicalism and in favour of a non-reductive view. Furthermore, her ‘first-person perspective’ has been briefly discussed in section 3.2.3 as an argument against the view of Metzinger that the self is an illusion. Apparently, her approach would avoid some of the problems encountered by a stricter materialist position on the question of resurrection.

existence in God. Also, approaches to the problem of ‘afterlife’ within Christian materialism often require some form of divine involvement (Baker 2001; van Inwagen 1978; Zimmermann 1999). Interestingly, Hasker and Taliaferro suggest in more general terms that there is a “[...] close tie between theism and the belief in an afterlife” (Hasker & Taliaferro 2014).

In any case, it is now time to return briefly to the initially bracketed question of life before birth. According to the reasoning of Brüntrup, it is possible to establish a connection between the soul process in ‘earthly’ life and life after death. This could presumably be extended to life before birth. Similarly, if it is possible to link life before death to life after death without losing ‘genidentity’, it should be possible to link this life after death to a *coming* life after birth; and so, once a soul process is established and linked to a life after death, there seems to be no reason not to believe that it is at least possible that this life after death may also become a life before birth in the future. Thus a process ontology could also be used in relation to religious systems involving reincarnation, for example.

Also, the question of whether it would be possible to understand afterlife as recreation and/or resurrection, as is suggested in some forms of Christian materialism, have not been discussed in detail (Baker 2001; van Inwagen 1978; Hasker 2011b). Presumably, many of the problems concerning personal identity and re-identification would reappear in process panpsychist versions. Nevertheless, the approach of Brüntrup presented above is a possible approach to recreation or resurrection views on afterlife, since Brüntrup reasons in similar ways to Christian materialists in relation to the problem of identity (Brüntrup 2010, p.266), and also concludes that a process panpsychist ontology is not in conflict with the Christian concept of resurrection.

In summary, it can be said that, although a process panpsychist position does not entail life after death, life before birth, or immortality, it is possible to construe these concepts in different variations within a process panpsychist ontology. It is possible to argue for the plausibility of either of the ‘four cases’ sketched above. In that sense, a process panpsychist ontology – as Whitehead pointed out – is indeed neutral about the problems in question here (Whitehead 1930, p.97). Nevertheless, the important observation to be made is that a process panpsychist ontology does not actually rule out *any* of the possibilities discussed above, and thus, in relation to the issue discussed in this section, can be regarded as a possible, and presumably even favourable, metaphysical framework.¹³³

¹³³ Johan Eddebo recently arrived at a similar, yet more general, conclusion – namely, that the only metaphysical position that is necessarily in conflict with life after death is reductive physicalism (Eddebo 2017, chap.4, 6). Thus, if the possibility of life beyond death is to be rejected, one would have to argue for the *truth* of reductive physicalism. In relation to the position of emergent process panpsychism suggested here, this would obviously mean that life after death, and presumably even before birth, is a viable possibility.

6.2.4 A personal relationship with God

It is clear that a personal relationship with anybody or anything seems – intuitively, and in a commonsense understanding – to presuppose the possibility of *choosing* this relationship. That is, it seems to be dependent on the possibility of free will, understood in terms of the ability to do otherwise. Furthermore, this relationship should also be understood as personal. In relation to the features of the suggested alternative philosophical framework and the preferred panentheistic conception of God for which this thesis has argued, the two main questions are how a personal relationship with God can be construed in emergent process panpsychist panentheism, and whether the suggested understanding of free will is, in any sense, in conflict with a personal relationship. In what follows, the focus will be less on the aspects of emergent process panpsychism and more on panentheism in general.

To start with, given the generic definition of panentheism previously introduced in this chapter, on the one hand it may appear odd, or even incorrect, to speak of a personal relationship, since humans as part of the world also are part of God. Clayton briefly describes this argument against panentheism as follows: “[...] panentheism must be false, it’s sometimes said, because we really are persons – agents who engage in personal relationships and who initiate personal activity within the world – whereas panentheism would make us merely ‘parts’ of some larger divine whole” (Clayton 2004, p.76). Also, the impassibility of God seems to contradict the vulnerability implied by the bilateral relationship in panentheism (Polkinghorne 1989, pp.23–25). On the other hand, the bilateral relation between God and the world is emphasised, and could be seen as the basis for a personal relationship with God. Clayton also points out that, although the relation between God and humans is often understood as a ‘person-to person’ relationship, it is far from clear what ‘person’ means in the case of God, and whether the God-human relationship can be fully described by understanding ‘God as personal’ (Clayton 2004, pp.76–77). In fact, he argues that one of the strengths of panentheism is that it “[...] conceives of an ontologically closer relationship between God and humanity than has traditionally been asserted”¹³⁴ (Clayton 1997, p.102).

Other theologians have also argued in similar directions. Sallie McFague describes one of the implications of her panentheistic model of God as follows: “[...] it allows us to meet God in the garden, on the earth, at home. [...] We meet God in the nitty-gritty of our regular lives, for God is always present in every here and now” (McFague 2008, p.77). This clearly suggests a close and presumably personal relationship with God. Catherine Keller develops an alternative understanding of power as the power of love,

¹³⁴ This is one of the arguments for panentheism by Clayton, briefly referred to in section 6.1.2 (Clayton 1997, pp.96–104).

in contrast to the power of control. She further emphasises that “(l)ove in theology names at once *relationship* to the divine, and the divine itself. Love reveals the *personal* face and force of God” (Keller 2008, p.94; my emphasis). Later she introduces the term ‘omni-amorous’ to emphasise her panentheistic understanding of God, even in relation to love: “The omni-amorous God everywhere and invisibly inhabits the matter of *this* world” (Keller 2008, p.108). Given a bipolar and bilateral understanding of God in a Whiteheadian setting, God could be seen as “[...] the great companion, the fellow-sufferer who understands” (Whitehead 1978, p.351). It is also worth observing that, since human persons as part of the world are in God, it is always possible for humans to encounter God within themselves, which then would indeed be a very personal relationship. The fact that humans often *do not* encounter God in themselves must then obviously be due to other influences; it may be, for example, that it is not so easy to become aware of this inherent divinity. So surely, although a personal relationship with a panentheistic God may seem at first glance odd or even impossible, rather it is the case that panentheism – whether in a process panpsychist setting or not – allows for a very close and even personal relationship with God.

With respect to free will, the situation is much clearer. Vincent Brümmer (1932-) has argued that, in a relationship, the persons involved should have the possibility of *freely* saying ‘yes’ or ‘no’ at least to parts of a relationship. This is certainly true even for the relationship between a human and God – with the qualification that there would be some ‘default’ relationship with God in panentheism, although this part of the relationship may not be realised by the person in question. Given this restriction, as a believer or non-believer one should have the possibility of affirming or rejecting a conscious and active relationship with God. Brümmer concludes that a relationship with God can only correctly be called ‘personal’ if the human involved enters it *freely*. Similarly, he reasons that love as a form of personal relationship must be received or given by *free* choice (Brümmer 1992, pp.70–82). Referring to Brümmer’s reasoning, John Sanders (1956-) acknowledges that a personal relationship with God should be chosen freely, but adds “[...] that God sovereignly established the rules of the game for personal relations of fellowship, not manipulative or contractual relations” (Sanders 1998, p.211). This seems to involve an understanding of free will as the ability to do otherwise at time *t*, as defined in chapter 5. But a closer look at how a relationship is established reveals that saying ‘yes’ or ‘no’ to the relationship with God is *not* the kind of action that ends in a fixed result at a time *t*. Rather, the relationship can be established, re-established, or renounced at any time. Furthermore, a personal relationship, I suggest, should not be seen as something static, but preferably as a dynamic process that is uniquely connected to the persons involved, that has its source and origin in the person in question, and that constantly evolves. Also, a choice between alternatives in some

sense should be possible within the process of establishing a personal relationship.

Summarising, panentheism in general, and thus also emergent process panpsychist panentheism, allows for a close personal relationship, presumably one that is even closer than in other forms of theism. Furthermore, free will is required for a personal relationship with God, and the understanding of free will proposed at the end of chapter 5 is clearly not in conflict with a personal relationship with God.

6.2.5 Theological determinism

Recall that the following five suggestions were made in relation to free will at the end of chapter 5: (i) decision-making is understood as a process spread out over time; (ii) an understanding of free will should be based primarily on self-determination; (iii) alternative possibilities do not exist at the point of time of an action; instead, there *may* be alternative possibilities simultaneously in the process of deliberation; (iv) given emergent process panpsychism, self-determination would be present at all levels, and thus self-determination and free will in humans should be seen as a phenomenon that comes in degrees; and (v) the number of alternative possibilities are commonly gradually ‘narrowed down’ until merely a single possibility remains. Moreover, it was elaborated that causal physical determinism is less probable than indeterminism, both for reasons in relation to a scientific understanding and description of the world and for philosophical reasons (section 5.1). Finally, in section 4.1.2.4 it was suggested that the CCP should not be understood as a metaphysical principle but as a methodological principle. Certainly, some of the lines of reasoning hinted at in chapter 5 may transfer to the case of theological determinism to be discussed here. Possible implications or suggestions stemming from the previous results, such as panentheism in combination with process panpsychism, will also have to be taken into account.

Following Timpe, theological determinism was defined in section 1.3.2; he writes: “According to theological determinism, God’s willing an event to happen is both necessary and sufficient for that event occurring” (Timpe 2014, p.9). Although a careful reading of this description apparently allows for events not willed by God that thus may be either determined or undetermined, in the text that follows the quotation above Timpe actually seems to think of something stronger, more in line with Hasker, who writes that theological determinism is the “[...] view according to which everything that transpires is necessarily determined by a unilateral, efficacious divine decree” (Hasker 2008, p.80). Kane emphasises that, historically, there has been a preoccupation with the problem of free will in theistic traditions seeking to reconcile predestination and/or theological determinism with free will

(Kane 1996, p.7; Kane 2011, p.33). In section 1.3.2 it was hinted that it is possible to construct an argument for the incompatibility of libertarian free will and theological determinism, analogously to the consequence argument discussed in section 5.2.1. However, although such an argument can be constructed, causal determinism, as Kevin Timpe emphasises, cannot be equated with theological determinism. Thus, although one may be tempted not to favour theological determinism because causal determinism is less plausible, these two forms of determinism do not seem to contradict each other logically. Even if, for example, causal determinism were false or less plausible, as has been argued for, theological determinism could still be true: it could still be the case that God's will determines every event, although not necessarily via causal determinism (Timpe 2014, p.9). In any case, as an example, Leigh C. Vicens suggests the following argument analogously to the consequence argument, using the term 'divine determinism' instead of 'theological determinism':

- (1) If divine determinism is true, then everything, including every human action, is necessitated by the will of God.
- (2) If human actions are necessitated by the will of God, then we cannot ever do otherwise than what we do, unless we can change what God wills with respect to our actions.
- (3) We cannot change what God wills with respect to our actions.
- (4) If we cannot ever do otherwise than what we do, then we lack free will.
- (5) Hence, if divine determinism is true, then we lack free will. (Vicens 2012, p.150)

Like the consequence argument, the above reasoning is intuitively convincing. Such arguments clearly open up a wide discussion about whether one should reject theological determinism, be a compatibilist, be a libertarian, and so forth. Here it has already been suggested that alternative possibilities exist in the process spread out over time (iii), and that free will should be understood as self-determination (ii) which, according to emergent process panpsychism, is present in some form at all levels of existence (iv). Together with the brief argument in section 5.1 that indeterminism is slightly more plausible, this would already *favour* the position that theological determinism should be rejected, since causal determinism is rejected.

Nevertheless, theological determinism is not ultimately rejected since, as observed above, it is still possible that God determines every event by other means than causal determinism. But whether God actually determines every event is obviously dependent on the conception of God involved. Traditionally, a conception or understanding of God involving theological de-

terminism has led precisely to the problems briefly sketched above. Certainly, if one is to *assume* or *presuppose* that God ultimately is the cause of all events, is infallible, perfect in knowledge, and so forth, then the path to be followed in relation to free will is to defend theological determinism and either to seek a compatibilist solution or to deny free will as such. Martin Luther (1483-1546), for example, reasons that God cannot be construed other than as immutable, and that God's will cannot be hindered (Luther 1969, pp.119–122 WA 614-620). Another clear example in the history of Christianity is Aquinas, who argues that “[...] the cause of the will can be none other than God” since “[...] the will is a power of the rational soul, which is caused by God alone, by creation[...]” (Aquinas ST I-II Q9 A6). More historical examples in support of theological determinism can easily be given. Discussing theological determinism and ‘Calvinism’, William Hasker names several other prominent theologians apart from Aquinas and Luther, such as Augustine, Zwingli, and of course Calvin, all of them opting finally for a compatibilist solution (Hasker 1994, pp.141–143). Linda Zagzebski (1946-) has made a similar observation in more general terms and in relation to the closely related topic of divine foreknowledge. She writes: “[...] it seems to me that infallible foreknowledge was affirmed because it was thought to be an aspect of cognitive perfection and hence a requirement for a perfect being” (Zagzebski 2002, p.61). Lynne Baker also argues that *orthodox Christian doctrine* is in conflict with libertarian free will (Baker 2003). Clearly, the above theologians who defend theological determinism also had reasons for adopting their positions that can be traced back to scripture; but it is not possible here to discuss such scriptural evidence in detail. The main observation here is that it seems that the reasons for considering and supporting theological determinism are mainly theological and rooted in a *specific* conception of God.

Thus the question arises of whether a revision of the conception of God and, more specifically, the previously suggested pantheism in an emergent process panpsychist setting, would provide further reasons for rejecting theological determinism. Recall that Gregersen's definition of pantheism in section 6.1.1 already suggests that God's relation to the world is bilateral. According to this general approach, the change in God in the bilateral relationship is not determined merely by God, but by the interaction with the world. As explicated in section 4.2.1, given process panpsychism, the constituting parts of the world have at least some degree of freedom and/or self-determination due to their mental aspects (Griffin 2001, p.109). This was also suggested and explicated in features (ii) and (iv) of the proposed understanding of free will. Consequently, this process panpsychist and pantheistic understanding of God, together with features (ii) and (iv), would contradict theological determinism, since the bilateral relation would allow for changes in God that are *not* determined by God but rather by the

constituting parts of the world. Therefore, theological determinism cannot be presupposed in an emergent process panpsychist and panentheistic setting, as has been done in the above argument.

Also, referring to Calvin, process theologian and panentheist Catherine Keller thinks that “Calvin sacrifices human freedom for divine omnipotence” (Keller 2008, p.81). Instead, she suggests that the power of God – in this case, in the sense of being all-determining – should not be understood as the power of control or predetermining the future, but rather as the power of love (Keller 2008, pp.70–90). Furthermore, open theists such as Sanders, who historically have been inspired by process philosophy, have shown that, similarly, it is possible to find support in scripture for an understanding of God in which God’s power is restricted and not all-determining, and thus compatible even with libertarian free will (Sanders 1998). In fact, Sanders points out that the contradiction between libertarian free will and theological determinism highlighted in the above argument, specifically in the historical examples above, relies on a specific understanding of divine sovereignty (Sanders 1998, p.36). Thus, in the case of the open theist’s understanding of God, God would have *chosen* not to determine the world, even if this would have been a *possibility* for God (Hasker 2008, pp.27–29). In any case, these brief examples show that it is possible to reject theological determinism on *either* theological *or* philosophical grounds.

In summary, it can be said that the understanding of free will proposed at the end of chapter 5 *favours* the rejection of theological determinism mainly because it does not reject the possibility of free will as such and involves self-determinism; but also it does not *ultimately* reject theological determinism. Further reasons for rejecting theological determinism can be found if a panentheistic conception of God is considered. The bilateral relation, together with self-determination in an emergent process panpsychist setting, leads to the conclusion that God is not the only determining power in the world. Also, the example of open theists (amongst others) shows that theological reasons for the rejection of theological determinism can be provided. Thus the rejection of theological determinism will be presupposed from this point on.

6.2.6 Omniscience and omnipotence

In section 6.2.5, theological determinism was briefly discussed and rejected in relation to the alternative philosophical framework proposed, and in relation to panentheism as the preferred conception of God argued for in section 6.1. In this section, the closely related topics of omniscience and omnipotence will be discussed, based on the previously explicated understanding of divine interaction, the emergent process panpsychist and panentheistic understanding of God, the proposed understanding of free will from chapter 5,

and the rejection of theological determinism. Obviously, these discussions will not cover all aspects of omniscience and omnipotence. Rather, the focus will be on how these concepts should be understood within the suggested philosophical framework and the results from the previous sections in this chapter.

First, a brief overview of important aspects in relation to how omniscience is related to human free will is given. Traditionally, omniscience could be understood very simply as God knowing the truth of all possible propositions (Wierenga 2013). Matters are obviously not that simple; and thus it is unclear whether or not, for example, propositions about the future already have a truth value. Consequently, the following common distinction made by Hasker and David Basinger (1947-) between ‘present knowledge’, ‘simple foreknowledge’, and ‘middle knowledge’ is useful. The first can be understood as God knowing all that is present, all that has passed, and all that logically follows from the present (Basinger 1996, p.39). *Simple foreknowledge* would mean that God also knows the future outcome of *free* choices by humans (Hasker 1989, pp.53–59). Also, God could have *middle knowledge* – that is, “[...] God knows not only what will in fact happen in the actual world or what *could* in fact happen in all worlds, but also what *would* in fact happen in every possible situation, including what every possible free creature would do in every possible situation in which that creature could find itself” (Basinger 1996, p.41). The standard argument against the compatibility of free will and simple divine foreknowledge as proposed by Zagzebski can then be formulated as follows, with B being the proposition “[...] that tomorrow you will get out of bed exactly seven minutes after you wake up” (Zagzebski 2002, p.46):

- (1) Yesterday God infallibly believed B. [...]
- (2) It is now necessary that yesterday God believed B. [...]
- (3) Necessarily, if yesterday God believed B, then B. [...]
- (4) So it is now necessary that B. [...]
- (5) If it is now necessary that B, then you cannot do otherwise than get out of bed tomorrow exactly seven minutes after you wake up. [...]
- (6) Therefore, you cannot do otherwise than get out of bed tomorrow exactly seven minutes after you wake up. [...]
- (7) If you cannot do otherwise when you do an act, you do not do it freely.
- (8) Therefore, when you get out of bed tomorrow, you will not do it freely.

By parity of reasoning you can argue that no act any human person performs is done freely. (Zagzebski 2002, p.47)¹³⁵

Clearly, Zagzebski refers to libertarian free will, understood as the ability to do otherwise, and the argument suggests the need either to abandon or to modify libertarian free will – for example, by moving in the direction of a compatibilist understanding of free will; to show that the above reasoning is incorrect in some aspect; to reject the notion that God has simple foreknowledge or infallible foreknowledge (in Zagzebski’s terminology) in the sense defined above; or to modify the kind of foreknowledge God has. The latter two possibilities obviously amount to a revision of the conception of God that is involved. More specifically, Zagzebski subsequently discusses a number of standard solutions to the above dilemma – namely, the Boethian approach, based on a timeless being; the Ockhamist approach, based on backward counterfactual dependency; the Molinist approach, going back to Luis de Molina (1535-1600) and involving ‘middle knowledge’; the ‘Frankfurtian’ approach, rejecting the ‘principle of alternative possibilities’; and the open theist approach, modifying the attributes of God (Zagzebski 2002, pp.51–61). As already pointed out in relation to theological determinism, she also remarks that infallible foreknowledge was regarded as part of the cognitive abilities of a perfect being (Zagzebski 2002, p.61). The solutions she presents have, of course, all been extensively debated in the philosophy of religion, and can more or less easily be sorted into the above categories of either abandoning or modifying libertarian free will, rejecting the notion that God has simple foreknowledge, modifying the kind of foreknowledge God has, or somehow showing that the above reasoning is incorrect.

Here the question is how the previously suggested metaphysics and understanding of free will would affect how the problem posed by the above argument should be addressed. Given panentheism and emergent process panpsychism, and that the suggested understanding of free will involves both self-determination (ii and iv) and alternative possibilities in the decision-making process (iii), it is possible to argue as follows, in parallel with the reasoning about theological determinism in the previous section. The divine, or God, *cannot* know all future events, for if there is some degree of freedom and/or self-determination in every entity in the world, how could any being possibly have complete knowledge of all future events? This restriction of divine foreknowledge is in line with the suggestions of the open theists, who seek support in scripture for their position. Such support has been worked out in detail by, for example, Sanders (Sanders 1998), and can certainly be

¹³⁵ William Hasker’s version of this standard argument uses exactly specified points of time t_1 , t_2 , and t_3 , analogous to Kane’s definition of free will as the ability to do otherwise at time t (Hasker 2011a, pp.40–41). The conclusion is obviously the same, and the possible solutions to the dilemma discussed by Hasker are also much the same as those suggested by Zagzebski.

modified in favour of process panpsychist pantheism. Open theists have also argued that simple foreknowledge would not be of any providential use for God, since God, by foreknowledge, also already knows of any divine 'response' to any given future situation, and thus cannot act on this knowledge (Hasker 1994, pp.149–150; Sanders 1998, pp.200–206; Basinger 1996, pp.52–55). And of course, if libertarian free will, which involves alternative possibilities, is regarded as most reasonable, and if one is unwilling to modify free will in the direction of compatibilism, then the above argument would support the suggestion of open theists and/or process theists that God's omniscience should not include divine or simple foreknowledge. To be sure, amongst open theists at least, and in (for example) Griffin's process panpsychist position, libertarian free will is an important feature of human existence (see, for example Sanders 1998, pp.194–195; Hasker 2008, p.29; Pinnock *et al.* 1994; Griffin 1998, pp.34–41).

Nevertheless, the reasons internal to an emergent process panpsychist and pantheistic view and the understanding of free will proposed here would already suggest a restriction of God's omniscience due to the inherent self-determination in every entity. This position is also supported by the reasoning of open theists. Thus it seems reasonable to suggest 'present knowledge' as the form of knowledge God could have.¹³⁶ The questions now is whether a short discussion of omnipotence leads to similar suggestions.

Turning to omnipotence, even in a very traditional definition, the power of God would be restricted in the sense that only what is logically possible would be in the power of God.¹³⁷ Certainly, it has been argued that divine interaction is possible, and thus that God can exercise some power; but the above results about theological determinism and omniscience should already in some sense be regarded as restricting God's power, since God can neither determine nor achieve knowledge of all events. Nevertheless, these restrictions do not seem to entail that God does not have the *power* to act in the way God wishes, given these restrictions. It may be the case, for example, that the author of this thesis intended to plant tomatoes on a Sunday in

¹³⁶ It should be pointed out that such 'present knowledge' is nevertheless infinite. For adding or subtracting anything to or from an infinite quantity does *not* render this quantity finite.

¹³⁷ Aquinas writes in his answer to the question about whether God is omnipotent: "If, however, we consider the matter aright, since power is said in reference to possible things, this phrase 'God can do all things' is rightly understood to mean that God can do all things that are possible; and for this reason He is said to be omnipotent" (Aquinas ST I Q25 A3). It would also be possible to pose the question: What in fact is meant by 'God's omnipotence'? This has famously been done by D.Z. Phillips. He gives the simple example that, even if we understand omnipotence as the ability to do anything that is logically possible, it is possible to find examples that do not seem to make sense, such as 'God riding a bicycle' (Phillips 2004, p.13). Certainly it would be possible to extend the notion of God's omnipotence to include such actions; but still: would it make sense to think of God riding a bicycle? Furthermore, would God not simply be turned into a kind of superman (Phillips 2004, pp.15–17)? Phillips concludes that the proposition 'God is omnipotent' "does not even get off the ground" (Phillips 2004, p.20).

May 2018. Now, even if God does not know whether I will finally decide to perform this profane action on a Sunday, or cannot determine it in advance, surely it would at least be in God's power somehow to stop me from doing so at that specific time? This seems at least possible, and this is what open theists suggest – although they believe that God generally does *not* intervene in the above sense. According to them, not exercising this power is a *voluntary* decision on the side of God (Pinnock 1994, pp.113–117; Hasker 1994, pp.138–141). Of course, the possibility of God having the power to intervene at any time directly raises questions in relation to the problem of evil; for why would an all-loving and all-powerful God *not* intervene in cases of horrendous evil, or any evil for that matter? It is clearly beyond the scope of this thesis to give a detailed account of the theodicy debate. Nevertheless, some ideas about the problem of evil, especially in relation to the process panpsychist and panentheist position suggested here, will have to be explicated, since this will lead to an important consequence for the process panpsychist position.

In contrast to more 'traditional' forms of theism, process theism claims, as suggested in 6.2.2, that God acts upon the world by *persuasion* and not by coercion. This restriction is taken to be on metaphysical grounds and not, as open theists suggest, a decision by God in the sense that 'God takes the risk'. The open theist Hasker acknowledges that understanding God's actions as persuasive is a strength in process theism, since the common premise that "God could unilaterally prevent all evil" in the problem of evil doesn't arise in the same way (Griffin 2001, p.218). God simply could not have prevented evil from occurring. But he also thinks that this understanding of God's omnipotence is too weak, leaving the believer with a picture "[...] of God's power and God's activity that is severely truncated" (Hasker 1994, pp.138–141). Griffin states that the attribute of the omnipotence of God is often misunderstood, such that God can prevent occurrences of evil. He calls this the 'omnipotence fallacy' (Griffin 1976, pp.251–274). Instead, he claims that "[...] although God *is* all-powerful – not only in the sense of being the supreme power of the universe but also in the sense of being perfect in power, having all the power one being could possibly have – God *cannot* unilaterally prevent all evil" (Griffin 2001, p.224). The idea behind this clearly metaphysical restriction on God's omnipotence within process thought is that, based on the presupposition of Whiteheadian process panpsychism, every occasion of experience has some form of self-determination (Griffin 2001, p.109). Given this self-determination of every individual or occasion, which in turn is part of God's creation, it would seem reasonable that there is at least some self-determination that always must remain untouched by coercive or determining powers (Hartshorne 1967, p.119; Hartshorne 1970, p.242). Or, citing Griffin, "[...] it is not logically possible for one being completely to determine the activity of another entity

that by definition has activity that is unreceived from any other being” (Griffin 1976, p.269). Hence, so Griffin says, the *possibility* of evil exists in any world.¹³⁸ Here, such self-determination has already been suggested as part of the understanding of free will at the end of chapter 5.

Nevertheless, it should be noted that such persuasion may be construed as counter-intuitive in the sense that God seems to have *less* power than humans who actually *can* intervene in the case of, for example, a child drowning in a lake. Yet, in response it could be said that God cannot act by ‘breaking the laws of nature’ – that, through persuasion, God acts through any human attempting to save (or not attempting to save) this drowning child, and that, in panentheism, God is involved in any action taken in the world, and thus also in the saving and the suffering involved. Clearly, this would again emphasise the *bilateral* relationship and the process philosophical understanding of God as a “fellow-sufferer” (Whitehead 1978, p.351).

Also, on the one hand it is possible to argue, for example, that, given the pantheistic analogy, God should have *more* power than merely the power of persuasion, since humans also have more power than persuasion in relation to their bodies. On the other hand, if such power is granted, whether by the pantheistic analogy or otherwise, then firstly, the problem of evil in its ‘traditional’ version would arise again; and secondly, a demarcation problem would arise in relation to cases in which God can only act persuasively and those in which God actually can intervene, similarly to the demarcation problem discussed by van Inwagen (van Inwagen 2005, pp.212–216). Also, it is not obvious whether eschatological problems are adequately addressed in a process approach to the problem of evil. It does not seem obvious that the outcome of the development of the world with its souls must necessarily be good; the *possibility* that it *may* end in evil seems to be allowed by Griffin’s approach. Furthermore, it seems that the idea of an *ultimate* victory – that there is some form of final state – contradicts the idea of everything being in process and change (Pak 2014, p.223). In reply, it could be argued that, although a process view entails changes, it is conceivable that there may be dynamic states – thus involving both process and change – corresponding to a victory over evil that may be *relatively* stable, although the possibility of evil remains – that is, the world may end in and even be ‘attracted by’ an ‘equilibrium of good’ in which the *possibility* of evil still exists but is never realised.¹³⁹

¹³⁸ Catherine Keller also argues elegantly for an alternative understanding of God’s power. Referring to a verse from Second Corinthians, “My grace is sufficient for you, for my power is made perfect in weakness” (2 Cor. 12:9), she develops the idea that God’s will should not be understood as controlling power or even as the power to intervene occasionally, but rather as ‘what God wants’ as persuasive love, resulting in the conclusion that “(o)n the mystery, the alternative power would be precisely the power of love” (Keller 2008, p.81–90, 90).

¹³⁹ Similar to the stable states of ‘attractors’ in dynamic systems in mathematics, it is conceivable that there is a world that is in a state of change, but in a sense is still ‘ultimate’.

In any case, analogies like the panentheistic one certainly are helpful in developing novel views, ideas, and approaches; but there are also qualifications that restrict or modify the scope of the analogy. Such qualifications have their roots in other aspects or reasonings that are not directly part of the analogy in question. In the above case, I suggest that the analogy of the world as God's body should not be taken so far as to think that God can intervene in the sense necessary to prevent evil unilaterally.

One important theological consequence of this position of metaphysically restricting God's power, as process theists do, is that, if God cannot change the world such that God could prevent evil, then it can be argued that *creatio ex nihilo* is impossible; for if God had created the world out of nothing, then God could also have created the world such that preventing evil would have been possible. Instead, it is suggested that God created *order out of chaos* (Griffin 1976, pp.285–289). Here it is important to realise that it is far from clear whether *creatio ex nihilo* is in fact a biblical doctrine. For example, the Hebrew words תהו ובהו 'tohu wabohu' in Genesis 1:2 can be translated as "formlessness or chaos and emptiness", suggesting rather that God created the world out of chaos rather than out of nothing. Of course, if God had created the world out of nothing, then all the principles – such as those that make evil and/or human freedom and thus moral evil possible – could have been otherwise. But if the creation of the world is regarded as creating order out of chaos, then the principles allowing for evil might be inherent in nature (Griffin 2001, pp.225–230). This has obviously been one of the major points of criticism directed at process views. Even Clayton, who generally is sympathetic to process views, does not wish to give up *creatio ex nihilo*, but rather attempts to provide a solution that would allow the strengths of both open theism and process theistic approaches to be preserved (Clayton 2005; Clayton 2008).¹⁴⁰

Either way, it is one of the important features of a process-oriented approach that the restriction of God's power is metaphysically grounded. The difference between open theism and process theism regarding the question of whether such restrictions are metaphysically grounded or are God's choice has in fact been one of the sources of controversy between these two positions. In the cases of both theological determinism and omnipotence, open theists claim – in contrast to process theists – that God *refrains by choice* from determining the world or exercising power over creation that

¹⁴⁰ Although also clearly sympathetic to panentheistic ideas that are common in process theism, Jürgen Moltmann argues that the process philosophical idea of creation out of chaos is not a doctrine of creation, but rather a doctrine of order and maintaining the world order, and that God and nature would merge into a world process if one were to reject *creatio ex nihilo* (Moltmann 1985, p.91). If Moltmann's reasoning is successful, and due to the rejection of *creatio ex nihilo* God and nature merged into a world process, then the process theistic conception would threaten to collapse into pantheism, and would consequently have to face the problems pantheism has to cope with.

might prevent evil. Certainly, given the restriction of God's omnipotence in the above sense of God not having coercive power in both the open theist and the process theist setting, there is space for human free will – supposedly libertarian free will, and also the understanding of free will proposed here. But the problem of evil, the question of why God – at least sometimes in cases of horrendous evil – does not prevent evil seems to remain if God has restricted her power *by choice* (Enxing 2013, pp.258–259). Thus a restriction of God's power on metaphysical grounds, as developed in process theism, is favourable, since the problem of evil does not arise in the same way as, for example, in the case of open theism.¹⁴¹ But it comes at the cost of rejecting the doctrine of *creatio ex nihilo*. Whether rejecting this doctrine is 'too high a price to pay', as some theologians certainly would argue, will briefly be discussed in chapter 7.

6.3 Summary

In section 6.1 it was argued that, although emergent process panpsychism does not entail panentheism, it is nevertheless more reasonable to prefer a panentheistic understanding of God, given emergent process panpsychism. Also, the *panentheistic analogy* has been suggested as a useful tool in relation to an understanding of God in general, and in relation to divine consciousness and the question of divine action and interaction.

In section 6.2, the following topics were briefly discussed in relation to the suggested features of the alternative philosophical framework presented in the beginning of the chapter: (1) an understanding of the human soul and immaterial beings; (2) divine consciousness and divine interaction; (3) life before birth or after death; (4) a personal relationship with God; (5) theological determinism; (6) omniscience; and (7) omnipotence.

In relation to the question of how to understand the human soul, it can be said that the view of the soul as "a self-modelling process specific to each individual, which has an irreducible first-person perspective and has causal powers of its own", does not contradict theological thinking. It has become

¹⁴¹ To be sure, the situation for a 'process theodicy' seems to be worse in the case of the *practical* problem of evil. If arguing for an 'anti-theodical' position is convincing and plausible, then a theodicy – *any* theodicy, not even this apparently innovative theodicy – cannot adequately address the practical problem of evil. On the contrary, they could be regarded in a sense as sanctioning evil (Trakakis 2008). A process theistic approach such as Griffin's certainly addresses the theoretical problem and presents a promising solution to it by changing some of the central metaphysical assumptions that are often taken for granted; but Griffin also clearly states that "[...] the effort to overcome human evil cannot omit the theoretical problem of evil [...]", that "[...] the theoretical side of the problem of evil is a significant aspect of the existential problem to be met [...]"; thus, in contrast to the anti-theodicy, emphasising the importance of an adequate theoretical approach, and possibly even *downplaying* the relevance of the practical problem.

clear *both* that this monistic view of the soul is supported by theological reasoning that is close to and/or within the process philosophical tradition, and that such a view of the soul is not contradicted by scripture. In the case of the second topic, the discussion of divine consciousness and divine interaction has led to some interesting suggestions. Certainly, both general and special providence can be understood within panentheism and/or emergent process panpsychist panentheism. There are also theological reasons – derived from the *imago Dei* and a reversed *panentheistic analogy* – to suppose that the creative power of divine consciousness should somehow be reflected in humans and in the world. The possibility of some consequences in relation to divine interaction, a personal relationship between humans and God, and the ‘traditional’ attributes of omniscience and omnipotence, was suggested. Understanding the CCP as methodological does *not* have the importance one might have expected in a panentheistic understanding of divine interaction. A process panpsychist ontology – the other features do not seem to be of greater importance for this question – does not exclude the possibility of life either before birth or after death. In relation to a personal relationship with God, the panentheistic conception of God allows for a close personal relationship, presumably even closer than in other forms of theism. Also, the understanding of free will proposed at the end of chapter 5 meets the requirement of free will for a personal relationship with God.

Theological determinism was rejected due to the self-determination proposed in both emergent process panpsychism and the second and fourth suggestion in relation to free will, combined with the bilateral relationship with the world in panentheism. Process panpsychist panentheism, together with self-determination, also leads to a revision and restriction of omniscience. Such restrictions find support in scripture, as proposed and argued for by open theists. Their arguments and reasoning can certainly be adopted in favour of emergent process panpsychist panentheism. The process theistic idea that God’s omnipotence is restricted, and that this restriction is *not* a choice by God, allows for human free will. It was also suggested that God’s omnipotence is restricted, such that God’s power is persuasive rather than coercive, and that “[...] God *cannot* unilaterally prevent all evil” (Griffin 2001, p.224). Given this restriction, the problem of evil does not arise in the same way as in ‘standard anti-theistic arguments of evil’, since God does not have the power presupposed in these arguments – namely, the power to prevent evil. This solution to the problem of evil can surely be seen as supporting the view that God’s power is restricted, and thus indirectly as supporting the emergent process panpsychist and panentheist conception of God. The restriction of omnipotence based on metaphysical assumptions also leads to the important consequence of rejecting the doctrine of *creatio ex nihilo*. In all three cases of theological determinism, omniscience, and omnipotence, the idea of self-determination is an important feature that leads to the rejec-

tion of theological determinism and the restriction of omniscience and omnipotence.

So, apart from a final summary, and some reflections on the project as a whole, the following questions remain: Are the consequences for a theistic worldview reasonable? What suggestions does a reversed panentheistic analogy, together with the *imago Dei*, raise in relation to the philosophical framework depicted here and in relation to the scientific research about the mind and free will? The final chapter will offer some concluding proposals in the above directions, together with suggestions for future research.

7. Final discussion and outlook

Having arrived at the final chapter, it is time to return to the original aim of this thesis. Recall that this was *to philosophically examine, critically discuss, and conclude (a) how a plausible alternative philosophical framework of consciousness and free will should be formulated, that takes into account contemporary scientific research on human consciousness and free will and its possible challenges; and (b) how it could and should be related to theistic beliefs – especially those connected to human and divine consciousness and free will.*

In relation to the alternative philosophical framework in the aim, the following features have been suggested in the previous chapters:

- (1) An emergent process panpsychist approach (section 4.3).
- (2) The CCP should be understood as a *methodological* principle (section 4.1).
- (3) Determinism is less plausible than indeterminism (section 5.1).
- (4) A suggested revision of how to understand free will in the following direction (section 5.4):
 - (i) Decision-making is understood as a process spread out over time.
 - (ii) An understanding of free will should be based primarily on self-determination and on being the source of one's actions. There is no sufficient condition *outside* the agent for the agent's action.
 - (iii) Alternative possibilities do not exist at the point of time an action or decision becomes manifest. Instead, there *may* be, and presumably most often are, alternative possibilities simultaneously in the process of deliberation that, analogously to and following the logic of quantum physics, 'collapse' into an action or decision becoming manifest.
 - (iv) Emergent process panpsychism allows for self-determination at all levels. Self-determination, and thus also free will, in humans should therefore be regarded as an emergent phenomenon that comes by degrees.
 - (v) The number of alternative possibilities is commonly gradually 'narrowed down' until merely a single possibility remains.

Further, as a result of the discussion of these features in relation to a theistic worldview, as presented in section 1.4, the following have been suggested:

- (I) Panentheism as the preferred conception of God (section 6.1).
- (II) A monistic view of the soul as a process – more specifically, as a self-modeling process that is specific to each individual – that has an irreducible first-person perspective and causal powers of its own (section 6.2.1).
- (III) Both general and special providence are possible – the latter with the restriction that miracles are not understood as breaking the laws of nature (section 6.2.2).
- (IV) Life before birth and/or after death is at least not ruled out (section 6.2.3).
- (V) The panentheistic conception of God allows for a close personal relationship with God (section 6.2.4).
- (VI) Theological determinism should be rejected (section 6.2.5).
- (VII) God’s omniscience is restricted to ‘present knowledge’ (section 6.2.6).
- (VIII) God’s omnipotence is restricted in the sense that it is not coercive and that God cannot unilaterally prevent evil. This restriction of God’s omnipotence led to the suggestion that *creatio ex nihilo* should be rejected in a process approach (section 6.2.6).

A number of questions have been left open. One is the question that arose in chapter 6, of how the panentheistic analogy could be reversed and thus result in theological suggestions for the philosophical and scientific understanding of the mind and of free will. Further, the consequences of the discussion in chapter 6 for a theistic worldview need to be summarised.

7.1 The consequences for a theistic worldview, and possible suggestions for the philosophical and scientific understanding of mind and free will

Given the initial summary of the suggestions made in relation to a theistic worldview, one question that has not been fully discussed is about which overall consequences the suggestions made actually have. What might be the costs, and what might be the benefits? Another question is whether these suggestions have any consequences for philosophical and scientific understandings of mind and free will.

7.1.1 What are the consequences for a theistic worldview?

Clearly, in relation to the former question, it can be said that there are several well-developed theologies that include the above-stated suggestions. Griffin's process theology, frequently referred to in this work, is one example; and other previously mentioned process theistic approaches would certainly qualify. More interesting is the question about what the benefits might be of embracing the above suggestions, and possibly what price would have to be paid for doing so. In general, certainly, adapting an emergent process panpsychist form of panentheism would have the benefit of being compatible with both the scientific and the philosophical research into the mind and free will presented in this thesis; that was precisely the line of reasoning established here. From a more specifically theological point of view, the following can be said in relation to the first suggestion of panentheism: given the bilateral relationship between God and the world, God apparently cannot be immutable. The next suggestion of a monistic view of the soul as a process actually seems to be quite safe. The third suggestion about how to understand divine interaction already poses some problems. Although both general and special providence are possible in the given framework, and it is also reasonable not to understand miracles as 'divine law breaking', a believer may end up with problems, such as explaining stories about how water changed into wine or how Jesus was resurrected. Sure enough, some have attempted to make specific miracles intelligible, even given the above restriction on breaking natural laws (for example, Clayton & Knapp 2011, pp.83–92; Peacocke 1993, pp.274–288; Polkinghorne 1989, pp.53–68).¹⁴² Allowing for at least the possibility of some form of life before birth and/or after death is obviously a safe option for a believer. Likewise, I deem, that rejecting theological determinism – even though some believers would defend this doctrine – is not highly controversial, since humans in general experience themselves as having the possibility of being free agents. The last two suggestions both involve restrictions on some part of divine 'perfection'. God's knowledge is restricted, God's power is restricted in a specific way; and this lies behind the suggestion to reject 'creation out of nothing'. Would this not mean diminishing the divinity of God? Is this acceptable? Sure enough, many believers and theologians have criticised such ideas, as has become clear, for example, in the discussion of these topics in section 6.2.

¹⁴² For example, Clayton and Knapp suggest, amongst other possibilities, a view in which the resurrection of Christ is interpreted as establishing a new transformed relationship with God for the disciples (Clayton & Knapp 2011, p.87). Peacocke rejects a literal interpretation of the virginal conception of Jesus on *theological* grounds. If the conception of Jesus was not a biological process, then how could he fully share our human nature (Peacocke 1993, pp.276–277)? These are just two simple examples of how it may be possible to understand important miracles or doctrines without proposing that natural laws have to be broken in the process.

In any case, it is clear that all the suggestions that may turn out to be more problematic are directly or indirectly connected to a qualification of the ‘perfection’ of God: God is *not* immutable, God *cannot* intervene by breaking natural laws, God *does not* know all future facts and propositions, God *cannot* unilaterally prevent evil, God *did not* create the world out of nothing. Indeed, such qualifications of these aspects could be understood as ‘restrictions’, thus suggesting that God is in some sense ‘lesser’, ‘not-perfect’, and invoking negative connotations. Even though, at least in the first case, ‘qualification’ might be the better term, in the following I will mostly stick to the use of the term ‘restriction’. The reader may remind herself that, at least in this context, ‘restriction’ need not necessarily be understood as meaning negative and less perfect.

So is this a reasonable price to pay? This highly interesting and relevant question cannot, of course, be discussed in detail. Nevertheless, some comments on these ‘qualifications’ or ‘restrictions’ can be offered. Why would it diminish God’s perfection if God were subject to change? Is it not conceivable that God is in some sense dynamic and yet perfect? To illustrate a possible answer, consider the following: God has experienced all possible states of the world in April 2018. Now, an infinitely short time after this experience, God would have changed and experienced a little more. But is the former set of experiences less all-encompassing than the latter? Certainly not. Adding any, even an infinite, number of experiences of what you have already to an infinite number of the same would *not* render the former set ‘more infinite’. A similar reasoning applies in relation to a restriction on knowledge: even after subtracting an infinite amount of what you have from another infinite amount of what you have, the latter would remain infinite. For example, subtracting the set of all prime numbers from the set of all natural numbers leaves the resulting set with an infinite number of members. So restricting God’s knowledge in this sense does *not* necessarily render God’s knowledge less than infinite.¹⁴³ In the case of God’s power, the situation is slightly more complicated, since the restriction of omnipotence suggests that certain *types* of actions are not within God’s power. But surely there must be *some* types of actions that are not possible for God – or, as in Phillips’ example, could God ride a bicycle (Phillips 2004, p.13)? So understanding God’s power as restricted in the sense that certain actions are not

¹⁴³ Strictly speaking, this reasoning would in fact require a few further qualifications. It would be necessary to distinguish between countable and uncountably infinite sets. Only if God has an uncountably infinite number of experiences would the above reasoning hold. If, for example, God merely had knowledge of a countably infinite number of propositions, then adding an uncountably infinite number to them, or subtracting an uncountably infinite number from them, would indeed ‘increase’ or ‘decrease’ God’s knowledge. But of course, it is unclear, firstly, whether there is an infinite number of possible experiences, instances of knowledge, or what have you, in the case of the natural world; and secondly, God’s knowledge – since God after all is God – in some sense is surely uncountably infinite.

within the power of God is not uncommon. Still, both God's knowledge and God's power can be seen as *maximal* since, as has been argued for, according to the reasoning about omniscience, no other being could have either the supposed ability to know the outcome of all future events or the ability to interact through persuasion with the entire creation.

Finally, the consequence of rejecting *creatio ex nihilo* seems at first glance to be unacceptable. Did not God *create* the world? Firstly, given panentheism, the world – even if it is assumed to be eternally ‘coexisting’ with God – would actually always be *in* God. Secondly, what is meant by ‘creation out of nothing’ is surely a matter of interpretation. It could, for example, mean something more in the direction of ‘creation out of nothing *orderly*’, thus moving closer to the suggested ‘creation out of chaos’. Indeed, even theologians (such as Moltmann) who have rejected process views because those views commonly reject *creatio ex nihilo* have suggested ‘deeper’ interpretations of *ex nihilo*. Moltmann applies the kabbalistic notion of ‘Zimzum’ and suggests that space is created by “withdrawal in it-self” of the divine¹⁴⁴ (Moltmann 1985, p.99). Thus the creation, and what it is created from, is at least in a sense already within God; and even Moltmann comes close to the interpretation of creation as ‘creation out of chaos’. Clayton suggests a view that he calls ‘open kenotic panentheism’, which

[...] accepts the process insight that a God who is love must exist eternally in relation; yet it locates that relatedness already within the divine nature itself as a model for God's subsequent relatedness to all things. God then freely creates space within the divine life for other selves or entities. These others are like God in that they, too, are centers of activity; hence creation is, as the tradition has held, *Imago Dei*. (Clayton 2008, p.177)

Be that as it may, whether it is ultimately possible, as Clayton suggests, to find a ‘middle ground’ between the ideas of process theism and open theism, it seems to me that the following tension remains: in the case of a process view, the qualifications of God stated above are due to metaphysical considerations, while in the case of open theism (and many other theistic approaches) these are *freely* chosen by God; and thus God would still seem to have the power not to restrict herself. In both examples offered by Moltmann and Clayton and referred to above, the restrictions on God's power are a result of God's *self-restriction* – i.e., it is a restriction by choice. In other words, the tension would be to think of metaphysical principles such as the possible existence of evil in the world either as created by God or in some sense as eternally part of God and the world. But, to return to the example of evil and good, which in a process theistic setting leads to the suggestion of metaphysical restrictions on God in general, and more specifically to the suggestion of

¹⁴⁴ In German, Moltmann uses the term “Sich-zurückziehen in sich selbst” (Moltmann 1985, p.99).

the rejection of *creatio ex nihilo*, it does not in general seem problematic that the creation of something or some property *always* entails the co-creation of the opposite. Yet, in the case of evil, this *does* seem problematic. But is that metaphysically problematic, or is it problematic in relation to the existential question of individual suffering? In either case, I do think that the position of metaphysical restrictions within a process approach, as has been argued for, is more reasonable, given that God exists – that is, given some form of theism. Yet I cannot think of an argument that is analytically *ultimately* convincing and *decisive* for either accepting or rejecting such restrictions. So whether one – *as a believer* – would find these restrictions acceptable or not would, I deem, ultimately be at least partly a matter of faith.

In summary, I suggest that the consequences stated above in relation to (I) to (V), and even (VI), are unproblematic. It is the consequences connected to God's perfection in (VII) and (VIII) and also in (III), in so far divine interaction would require divine intervention, that turn out to be more problematic. Nevertheless, based on how to understand infinity, a case can be made that the qualifications about God's perfection need not be understood as making God 'less perfect'. In the case of the rejection of *creatio ex nihilo* as a consequence of the restriction of God's omnipotence in a process approach, the situation seems worse. Here, I reckon, many believers – based on their faith and personal preferences – would indeed regard this rejection as a high price to pay.

7.1.2 Possible suggestions for the philosophical and scientific understanding of mind and free will; the 'panentheistic analogy' reversed

In the previous chapter, Clayton's *panentheistic analogy* has been invoked several times, and it has turned out to be a useful tool, especially in relation to divine consciousness, action, and interaction. Here some ideas will be presented that may lead to suggestions that are relevant to philosophical and scientific research about the mind, and possibly even free will.

One important Christian doctrine is the doctrine of *imago Dei*: "So God created man in his own image, in the image of God he created him" (Gen 1:27) Understanding this doctrine in the light of panentheism and the panentheistic analogy would mean that the way God relates to and interacts with the world should somehow be reflected in how the human mind relates to the body or the brain. As has already been hinted at in section 6.2.2, in relation to the doctrine of *imago Dei*, Jürgen Moltmann emphasises that the relations of God to God-self, to humans, and to God's creation as a whole should be reflected in human beings; the analogy between God and humans in the doctrine of *imago Dei*, according to Moltmann, is an *analogia relationis* (Moltmann 1985, p.90). Also, one of the most important relations be-

tween God and the world is that of the world being *created* by God. Apart from understanding creation as *creatio ex nihilo*, creation is commonly also understood as *creatio continua* – ‘God’s continuous creative activity in the world’. Again, it has already been pointed out that, given the emphasis of pantheism on the immanence of God, there should likewise be a stronger focus on *creatio continua* in pantheism. Given the doctrine of *imago Dei* and the pantheistic analogy, God’s creative power surely is active in humans. But, thinking of humans in *analogy* to God, the obvious question arises: how is the creative power of God, the continuous creative activity of God, actually reflected or manifested in human nature? More specifically, this would mean that, given theological reflections about the nature of a pantheistic God, the doctrine of *imago Dei*, and the continuous creative power of God, and given the pantheistic analogy, such reflections could be fruitful in the interpretation of results about how the human mind works.

Basically, the idea of ‘reversing the pantheistic analogy’ is that, given the analogy between God/world and mind/body, the continuous creative activity exercised by God in the world must be reflected in the relation between mental activity and physical, ‘bodily’, neural activity. If God is constantly creatively active in the world, then, in analogy, the mental should be continuously creatively active in the body, and specifically in the physical processes of the brain too. Now, if humans are created in the image of God, and if God is active *in* the world and interacts with the world in the way that pantheism suggests, then, applying the pantheistic analogy in reverse, and with the doctrine of the image of God understood as an *analogia relationis*, the activity of the mind in the brain and the interaction of the mental with body and brain can be seen as analogous to the activity of God in the world. Furthermore, since the continuous activity of God in the world can be understood as *creative* activity, then the activity of the mental in relation to the brain and the body can also be understood as *creative* activity – although this activity obviously may be imperfect. It seems necessary at this point to emphasise once more that the use of words like ‘mind’ and ‘body’, given the earlier conclusion of ‘avoiding dualism’ and of panpsychism, should not be interpreted in a dualistic sense.

Now, any sense perception, any activity of the mental has its ‘bodily’ or neural correlate in the brain; and taken as a whole, these bodily correlates establish the physical, neural basis of our mental image of the world. According to the above suggestion, the relation of the mental as a whole to this physical basis is filled with creative power. At any time mental activity can be – in analogy to God’s activity – regarded as *creative* activity, and thus the bodily correlates of our perceptions, our experience of unity, our memories, our decisions and reasons, and presumably also our emotions (although emotions have not been discussed here) are at least affected by and often the outcome of the creative activity of the mental. It is important to realise that

this creative activity may include *both* conscious *and* subconscious mental activity. In the case of God, all activity should presumably be regarded as conscious; but due to the imperfection of humans, all mental activity – be it creative or not – need not be conscious.

This could be applied to various different mental phenomena. The research about constructed reasons, about choice blindness mentioned in section 2.2.2, could certainly be interpreted in the light of this analogy. The process of finding reasons for decisions can be understood as a creative process, whether or not the reasons manifested and reported are the actual reasons. Furthermore, since God’s continuously creative power in the world sustains the world in a lawful and ordered manner, providing reasons can be regarded as a creative activity *aimed* at providing lawfulness and order to our mental image of the world. Similarly, proposals about the self being an illusion – as suggested by Metzinger and described in section 3.2.3 – could be interpreted instead as the self being the outcome of a creative process that in turn is a reflection of the creative power of God. Even interpreting the well-known placebo or nocebo effects as the outcome of human creative activity could be beneficial in the sense that it would more strongly focus the medical researcher’s observations on the health-bringing or the dynamically creative or destructive role of the mind.

Further examples for which this line of interpretation may be relevant can be given, especially if they involve some form of perception. Another such example would be to think of synaesthesia as ‘excessive creative’ activity.¹⁴⁵ This would certainly not conflict with neurological explanations of these phenomena, but only avoid interpreting them as illusory or self-deceptive. Also, the commonly known phenomenon that memories are often

¹⁴⁵ This relatively common phenomenon involves the activity of two or more brain areas that are responsible for sense perception. Usually two senses are linked so that, for example, auditory perception that is accompanied by the experience of colour or the visual perception of letters evokes the experience of certain colours specific to the letters. This phenomenon is usually not regarded as a disorder, and most synaesthetes do not suffer as a result of their experiences. The author of this essay in fact has two synaesthetic sons and a synaesthetic daughter: one hears colours and remembers melodies on the violin by their colour; another sees names in colours – for example, “Jane is orange”; and the third combines numbers with forms. All three do not think that their experiences are in any way problematic in everyday life. Two of them actually realised fairly late in life that other people generally did not have these kinds of experiences. Although the experiences are real for the individual synaesthete, it can obviously be shown that, for example, a melody does not have a colour. Neuroscientist V.S Ramachandran (1951-) gives a detailed description and a highly plausible neurological explanation for synaesthetic experiences (Ramachandran 2013, pp.127–184). Nevertheless, these experiences lack inter-subjectivity in the sense that, although the experiences are real for the individuals, and specific perceptions from one sense are connected to specific experiences from another sense, they generally cannot be experienced by other subjects; and thus another subject may not easily know whether a synaesthete consistently ‘invents’ the experiences or actually experiences them. Thus these phenomena could be regarded – at least in some sense – as illusory or self-deceptive.

inaccurate or even false could instead receive a positive interpretation.¹⁴⁶ It could be seen as the creative attempt of the mental to provide a consistent picture of our past experiences. In general, rather than understanding phenomena such as those mentioned above as illusions or deceptions, they could be understood as the outcome of inherent creative activity. Moreover, this kind of interpretation suggests a certain preference for philosophical paths that do *not* involve ideas about illusion, epiphenomenalism, or the like, and for understanding construction in terms of creation. Also, it seems that the initially presupposed position of critical realism – that a reality exists independently of us, but that the perceived reality is also a product of human mental activity – is strengthened. Philosophical approaches to mental phenomena focusing on activity may also become preferable, given the suggestion made by the ‘reversed pantheistic analogy’. For example, Tononi’s theoretical approach to ‘qualia’ introduced in section 2.2.1, suggesting that a quale cannot be generated by a state in a system in *isolation*, may be preferable, given a focus on active participation in perception. Likewise, creative activity seems to be in line with the interpretation of Ganzfeld experiments¹⁴⁷ as an indication that the mind should be actively creating the qualitiveness of a perception in relation to other parts within in the perception (Metzinger 2004, pp.102–104). Indeed, theoretical approaches that focus strongly on the *activity* of the human mind in perception, such as the work of Alva Noë (1964-) (see, for example, Noë 2004), which has not been discussed here, may become increasingly interesting, given that creative activity *should*, in line with the *imago Dei* and the pantheistic analogy, be reflected in human activity. Indeed, understanding human mental activity primarily as creative activity would allow for the possibility to see even the imperfections of our mental life as results of creative activity – i.e., as a positive activity. Nevertheless, this would obviously not mean that humans cannot be deceived or

¹⁴⁶ In research into false childhood memories, it has been shown that it is possible to modify the childhood memories of adults by showing them fake photographs of themselves in situations that they have not experienced in reality (Wade *et al.* 2002, pp.597–603). Oakes and Hyman write the following: “Memory is always constructed. What we remember will be constructed from residual information and from general schematic knowledge structures. In addition, memory construction takes place within a social context and in response to social pressures. Thus the memories we construct reflect the suggestions and stories told by others. Many of our childhood memories may actually be stories that we heard others, such as parents or siblings, tell. Unable to remember for ourselves, we accept these stories as highly plausible. We then imagine the stories. Perhaps, we eventually adopt the image and story as our own memory and forget the source of the image” (Oakes & Hyman 2001, p.100).

¹⁴⁷ Ganzfeld experiments date back to the 1930s and the German psychologist Wolfgang Metzger (1899-1979) (Metzger 1930). Metzger mainly refers to experiments in which a subject experiences a homogeneous chromatic stimulation – that is, she experiences only one colour with one and the same intensity. In such experiments many subjects, after some time, will lose all phenomenal vision. They will experience no colour at all. One conclusion is that, in order to experience the quality of colour, one has to be able to relate it to other visual perceptions (Metzinger 2004, pp.102–104).

experience illusions. Indeed, it is quite obvious that a creative process does not *necessarily* lead to a positive, ‘correct’ result, but that the outcome sometimes is flawed, illusory, deceptive, and so on. A creative mental process could result in *either* something real *or* something deceptive. In that sense, illusory or self-deceptive mental processes would be a subset of creative mental processes in general. In any case, by focusing on the creative, negative connotations such as those associated with illusion or self-deception could be avoided.¹⁴⁸

In other words, one advantage of thinking of mental activity as creative activity lies in the fact that, although it allows for imperfections such as inaccurate memories or incorrect reasons, it focuses on a *positive* aspect of mental activity. After all, it is one of the most fascinating things in the world that every single individual in a sense *re-creates* the world in his/her mind, and that this recreated image of the world in general seems to a high degree to be similar in each individual. This positive interpretation of mental activity, regardless of whether this activity sometimes leads to imperfect or even false experiences, also casts a different light on our cognitive abilities compared with similar ‘abilities’ of machines. Humans may feel small and imperfect when hearing how the computer ‘Deep Blue’ wins against Garry Kasparov in chess or AlphaGo beats world champion Go players, or when realising how much more inaccurate human memory images are than those produced by electronic devices. But perhaps the focus should not be on the superior computational power of ‘Deep Blue’, ‘AlphaGo’, or the vast amount of data that can be stored electronically, but rather on the *creative* play of chess-players, Go players, and the human ability at any time to *create* a consistent picture of the world as a whole.

In addition, apart from avoiding the negative connotations associated with illusion or self-deception and apart from focusing on our ability rather than on our disability, another advantage of this positive interpretation can be identified. It suggests a stronger emphasis on an approach in research done, for example, in neuroscience or related disciplines that focuses on the creative abilities of the mind and brain. Certainly, I am *not* saying that neuroscience and related disciplines are not interested in the creative abilities of the mind; but a shift towards a stronger focus on these abilities together, with the idea that these creative abilities are essentially an image of God’s crea-

¹⁴⁸ It would certainly be an interesting topic of research to study how the use of terms like ‘illusion’ or ‘self-deception’ are connected to ideas about the ‘reducibility’ of phenomena. Likewise, yet in contrast, at first glance it seems that ideas about creation have a closer relation to ideas about the ‘emergence’ of the mental. A study in this direction could surely be done that investigates both conceptual questions and historical relations. In particular, I suspect that reductive, mechanistic approaches that are traditionally common in the natural sciences have led historically to the favoured use of terms with connotations such as ‘illusion’. Of course, at this stage this is speculative, but it could indeed be a subject for further investigation.

tive power, may in a sense ‘re-enchant’ the powers and abilities of the human mind, and perhaps even lead to a deeper understanding of the processes involved. In fact, the recent work of Thomas Fuchs, suggesting that the brain is an organ of relation, would in my reading be a move in the direction suggested here, although he clearly does not relate to theistic ideas or concepts, and works entirely within the tradition of the natural sciences (Fuchs 2013). It also becomes clear that religious concepts – in this case, Christian theistic concepts – can provide interpretations of results from natural science, casting a different light on them and thus opening up a renewed dialogue between natural science, philosophy, and religion. This would also suggest that such a dialogue may not only be fruitful, but even worth striving for, and that perhaps even extreme interpretations may benefit from ideas based in theistic thinking.

In summary, we have seen in this subsection that the panentheistic conception of God, together with the doctrine of *imago Dei*, especially in relation to the creative power of God and together with the panentheistic analogy in reverse, can lead to novel interpretations of research results about the human mind. This interpretation suggests that, instead of understanding the mental phenomena described above as illusions and/or self-deceptions, they should rather be understood – like most of the products of the human mind – essentially as the outcome of a creative activity of the human mind. Thereby the negative connotations of terms such as ‘illusion’ or ‘deception’ are avoided. Furthermore, regarding mental activities as essentially creative and as an image of the creative power of God may even open up an attitude amongst researchers to be more focused on the creative abilities of the human mind. This may also encourage theologians, philosophers, and researchers within the natural sciences to engage in a creative dialogue about how research results may be interpreted.

7.2 The overall picture, and suggestions for future research

The investigation in this thesis has resulted in the following overall picture. In chapter 2 it has been established that, at least initially, there seem to be challenges to theistic beliefs from research within the natural sciences into consciousness, decision-making, and brain function. Furthermore, it has been concluded that such research does not contradict reductive physicalism, and that neither does research into consciousness imply reductive physicalism, nor does research into free will imply determinism. In chapter 3 the main conclusion was that both dualism and reductive physicalism should be avoided, although, in the search for an alternative position, an attempt should be made to retain the strengths of either position. In chapter 4 the analysis of

mainly two alternative paths suggested in chapter 3 – namely, emergence and process panpsychism – led to the conclusion that a emergent process panpsychist view would be most reasonable. In this view, emergence should *not* be understood as strong emergence. Also, it has been argued that the CCP should be understood as a methodological principle. Chapter 5 produced the suggestion of a sketch of some features for a novel understanding of free will that still captures important intuitions about free will. This incorporated decision-making as process spread out over time, a focus on self-determination and the source of actions, understanding alternative possibilities as possibilities in the decision-making process, self-determination as present at all levels of existence, and that the number of alternative possibilities is gradually narrowed down. This understanding could, I suggest, still be regarded as a form of libertarianism, since it still incorporates alternative possibilities in some sense and rejects determinism. The mind/soul is understood as a self-modelling process, yet its first-person perspective is *not* understood as reducible.

In relation to theistic beliefs, important qualifications and restrictions have been suggested in chapter 6 (listed also at the beginning of this chapter). A panentheistic conception of God seems to be preferable in relation to both philosophical and scientific reasoning. Some qualifications of how to understand God's powers and features have been proposed. The most important of them are presumably that God has 'present knowledge', is not immutable, does not have coercive power, and has not created the world out of nothing. Although I am personally inclined to accept them, individual preferences may lead to other conclusions. The arguments presented here for these qualifications are reasonable and, in my opinion, convincing. Others, of course, may object to the consequences presented here. Interestingly, the panentheistic position outlined here has also resulted in some suggestions, in particular for re-interpreting results that point towards certain mental phenomena being understood sometimes as illusions, which should rather be construed as the outcome of creative processes. To be sure, this is not a matter of 'analytical truth', but rather a way of perceiving and interpreting the world.

Also, the philosophical framework suggested here, together with its implications both for a theistic worldview and from a theistic worldview, clearly suggest that it is possible to find a 'middle ground' in which science and religion can not only coexist but also enter a fruitful dialogue with ideas and implications that affect both philosophical and scientific interpretations and theological concepts. In my view, the significance of finding a suitable metaphysical framework becomes clear here, since it is, as I suggest, the metaphysical framework that, in this case, does the work of binding together scientific research and the theistic worldview. Nevertheless, the purely philosophical results presented at the beginning of chapter 6 could obviously be

adopted in a non-theistic setting. Also, parts of the suggested understanding of free will need not be understood in a process panpsychist setting. Consequently, these results, or parts of them, could also be read independently from a specific Christian theistic point of view, or be adopted in other metaphysical frameworks. It would certainly be of interest, for example, to relate these results to other religious worldviews. Even the conception of panentheism suggested in section 6.1 could be studied specifically in relation to other cultural and religious contexts. Here a dialogue with scholars educated in other traditions would be of great value and interest.¹⁴⁹

In several of the areas that have been discussed in this thesis, further questions have appeared. Both the panpsychist approach and the panentheistic approach to the world, I suggest, would lead to a different relationship with other sentient beings, with the world, and indeed with all of creation. Recently, Leidenhag in particular has pointed to the possible benefits of a panpsychist approach in relation, for example, to ecology and an understanding of other non-human animals (Leidenhag 2016, pp.223–236). Presumably the benefits of a panentheistic worldview could also be further discussed and elaborated, as has been done, for example, by McFague (McFague 2008). In both cases, further studies could be done on both a more conceptually and a more ethically oriented basis, investigating the consequences of panpsychism and/or panentheism for an adequate human relationship with the world as a whole. Especially in relation to animals, a panpsychist approach suggests that there is consciousness ‘all the way down’, which should lead to ethical considerations about how humans treat animals.

The understanding of free will suggested here, with a focus on the agent being the source of one’s actions, certainly raises some questions in relation to other sentient beings, and possibly even in relation to conscious or self-conscious artificial intelligence, if this turns out to be possible. Further, as hinted earlier, the understanding of decision-making as a process, and that free will can be developed as an ability, would lead to questions in relation to other beings. Could (or even should) animals be granted some degree of free will? Could – presumably in the future – androids be regarded as free agents and be held responsible for their actions? In particular, since the panpsychist approach presented here in section 4.2 and the sketch of a novel understanding of free will at the end of chapter 5 in fact suggest self-determination even at the micro-level, it seems reasonable at least to consider the possibility of free will in other beings or systems than human ones, and also the possibility that free will comes by degrees. Such questions must obviously be further investigated and analysed, thus throwing light on these deeply interesting problems.

¹⁴⁹ An attempt in this direction has been made, for example, in the anthology edited by Philip Clayton and Loriliai Biernacki, *Panentheism across the World’s Traditions*, covering ideas about panentheism in the ‘world religions’ (Clayton & Biernacki 2014).

In relation to theories of consciousness, although not explicitly and extensively argued for, neither Dehaene's development of Baar's 'global workspace model' nor Tononi's 'integrated information theory' seems to rely heavily on a specific metaphysic. Thus, as has been argued in chapter 4, the interrelatedness and interconnectedness emphasised in such theories would be captured nicely by a process philosophical approach. Also, granting that consciousness comes in levels or in grades, as Tononi does, is, as has been pointed out, at least close to a panpsychist setting. Indeed, this suggests that perhaps these theories simply capture different aspects of the highly complex phenomenon of consciousness. Rosenberg has recently argued in this direction, arranging these theories, with others, in a 'synoptic pyramid' (Rosenberg 2017, pp.166–172). Certainly, such research could be further developed to show that the philosophical approach of emergent process panpsychism suggested here is not only unproblematic but even beneficial for these more scientifically and empirically oriented theories.

An emergent process panpsychist understanding of consciousness, the mind, and/or the soul would possibly also suggest that other beings or, even more generally, other systems may develop consciousness and self-consciousness. This should certainly be further analysed from a philosophical point of view. Especially, if 'strong artificial intelligence' becomes a possibility, questions about the 'ethics of machines' and the like would have to be discussed. If, further, a panentheistic position is adopted, then questions such as how such 'conscious beings' relate to God or the divine will also arise and need elaboration.

Clearly, there are many possible lines of research in which the work and the results of this thesis can be developed; and it is my conviction that several of the above suggestions will lead to further insight into the fascinating and complex research area concerning mind, free will, and their relation to religious ideas and concepts.

Bibliography

- Alexander, S. (1966) *Space, Time and Deity vol.II*. MacMillan.
- Alquist, J. L., Ainsworth, S. E. and Baumeister, R. F. (2013) 'Determined to conform: Disbelief in free will increases conformity', *Journal of Experimental Social Psychology*, 49(1), pp. 80–86.
- Aquinas, T. (1988) *Summa Theologica, On Law, Morality and Politics*. Edited by übersetzt von Dominikanern und Benediktinern Deutschlands und Österreichs. Verlag Anton Pustet, Salzburg Leipzig.
- Aristotle (1936) *On the Soul, Parva Naturalia, Aristotle Vol. VIII*. Harvard University Press.
- Aristotle (1968a) *Metaphysics I*. Loeb Class. Edited by translated by Hugh Tredewick. Harvard University Press.
- Aristotle (1968b) *Metaphysics VI*. Loeb Class. Harvard University Press.
- Atmanspacher, H. (2002) 'Determinism is Ontic, Determinability is Epistemic', in Atmanspacher, H. and Bishop, R. (eds) *Between Chance and Choice*. Imprint academic, pp. 49–74.
- Augustine (1947) 'The Magnitude of the Soul', in translated by John J. Mahon SJ (ed.) *The Fathers of the Church*. The Catholic University of America Press.
- Baars, B. J. (1988) *A Cognitive Theory of Consciousness*. Cambridge University Press.
- Baars, B. J. (2005) 'Global workspace theory of consciousness: toward a cognitive neuroscience of human experience', *Progress in brain research*, 150, pp. 45–53.
- Baker, L. R. (2001) 'Material Persons and the Doctrine of Resurrection', *Faith and Philosophy*, 18(2), pp. 151–167.
- Baker, L. R. (2003) 'Why Christians should not be Libertarians: An Augustinian Challenge', *Faith and Philosophy*, 20(4), pp. 460–478.
- Baker, L. R. (2009) 'Non-reductive Materialism', in McLaughlin, B. P., Beckermann, A., and Walter, S. (eds) *The Oxford Handbook of Philosophy of Mind*. Oxford University Press, pp. 109–127.
- Baker, L. R. (2011) 'Christian materialism in a scientific age', *International Journal for Philosophy of Religion*, 70(1), pp. 47–59.
- Baker, L. R. (2013) *Naturalism and the First-Person Perspective*. Oxford University Press.
- Barbour, I. G. (1990) *Religion in an Age of Science*. Harper & Row, Publishers, San Francisco.
- Barbour, I. G. (2002) *Nature, Human Nature and God*. Fortress Press.
- Barnes, E. (2012) 'Emergence and fundamentality', *Mind*, 121(484), pp. 873–901. doi: 10.1093/mind/fzt001.
- Barrett, N. F. (2009) 'The Perspectivity of Feeling: Process Panpsychism and the Explanatory Gap', *Process Studies*. Éditions Chromatika, 38(2), pp. 189–206.
- Basinger, D. (1996) *The Case of Freewill Theism*. InterVarsity Press.
- Basinger, D. and Basinger, R. (1986) *Predestination and Free-will*. Edited by D. Basinger and R. Basinger. InterVarsity Press.

- Baumeister, R. F., Masicampo, E. J. and DeWall, C. N. (2009) 'Prosocial Benefits of Feeling Free: Disbelief in Free Will Increases Aggression and Reduces Helpfulness', *Personality and Social Psychology Bulletin*, 35(2), pp. 260–268.
- Bennett, M. and Hacker, P. (2003) *Philosophical Foundations of Neuroscience*. Blackwell Publishing Inc.
- Berryman, S. (2010) 'Democritus', in Zalta, E. N. (ed.) *The Stanford Encyclopedia of Philosophy*. Metaphysics Research Lab, Stanford University.
- Bible, *The Bible*. King James Version.
- Bishop, R. (2002) 'Deterministic and Indeterministic Descriptions', in Atmanspacher, H. and Bishop, R. (eds) *Between Chance and Choice*. Imprint academic, pp. 5–32.
- Bishop, R. C. and Atmanspacher, H. (2011) 'The Causal Closure of Physics and Free-Will" in', in Kane (ed.) *The Oxford Handbook of Free Will, 2nd edition*. Oxford University Press, pp. 101–111.
- Brümmer, V. (1992) *Speaking of a Personal God*. Cambridge University Press.
- Brüntrup, G. (1994) *Mentale Verursachung: eine Theorie aus der Perspektive des semantischen Anti-Realismus*. Verlag W. Kohlhammer.
- Brüntrup, G. (2010) '3,5 Dimensionalismus und Überleben: ein prozess-ontologischer Ansatz', in Brüntrup, G., Rugel, M., and Schwartz, M. (eds) *Auferstehung des Leibes - Unsterblichkeit der Seele*. Kohlhammer, Stuttgart, pp. 245–268.
- Brüntrup, G. (2011) 'Alter Wein in neuen Schläuchen', in Müller, T. and Watzka, H. (eds) *Ein Universum voller Geiststaub? Der Panpsychismus in der Geist-Gehirn-Debatte*. Mentis Verlag, Paderborn, pp. 23–59.
- Brüntrup, G. (2016) *Das Leib-Seele-Problem*. 5th edn. Verlag W. Kohlhammer.
- Brüntrup, G. (2017) 'Emergent panpsychism', in Brüntrup, G. and Jaskolla, L. (eds) *Panpsychism*. Oxford University Press, pp. 48–71.
- Brüntrup, G. and Jaskolla, L. (ed. . (2017) *Panpsychism- Contemporary Perspectives*. Edited by G. Brüntrup and L. Jaskolla. Oxford University Press.
- Calvin, J. (1536) *Institutes of the Christian Religion*, Beveridge, Henry (translator). Online edi. Christian Classics Ethereal Library, Grand Rapids, MI.
- Catholic Church (2000) *Catechism of the Catholic Church*. 2nd edn, *Catechismus Ecclesiae Catholicae.English*. 2nd edn. Liberia Editrice Vaticana.
- Cavanna, A. E. and Nani, A. (2014) *Consciousness*. Springer-Verlag Berlin Heidelberg.
- Chalmers, D. J. (1995) 'Facing up to the problem of consciousness', *Journal of Consciousness Studies*. Imprint Academic, 2(3), pp. 200–219.
- Chalmers, D. J. (1996) *The Conscious Mind*. Oxford University Press.
- Chalmers, D. J. (2001) 'Consciousness and its place in nature', *Cognitive Systems Research*, 2(2), p. 177. doi: 10.1016/S1389-0417(01)00028-6.
- Chalmers, D. J. (2006) 'Weak and Strong Emergence', in Clayton, P. and Davies, P. (eds) *The Re-emergence of Emergence*. Oxford University Press, pp. 244–254.
- Chalmers, D. J. (2017a) 'Panpsychism and panprotopsyhism', in Brüntrup, G. and Jaskolla, L. (eds) *Panpsychism*. Oxford University Press, pp. 19–47.
- Chalmers, D. J. (2017b) 'The Combination Problem for Panpsychism', in *Panpsychism*. Oxford University Press.
- Chalmers, D. J. (2018) 'Idealism and the Mind-Body Problem', in Seager, W. (ed.) *The Routledge Handbook to Panpsychism*. Oxford University Press. Oxford University Press.
- Changeux, J.-P. (2009) *The Physiology of Truth*. Havard University Press.
- Churchland, P. S. (1986) *Neurophilosophy*. The MIT Press.

- Churchland, P. S. (2006) 'Moral decision-Making and the brain', in Illes, J. (ed.) *Neuroethics*. Oxford University Press, pp. 3–16.
- Clarke, D. S. (2003) *Panpsychism and the Religious Attitude*. State University of New York Press.
- Clayton, P. (1997) *God and Contemporary Science*. Eerdmans Publishing Co.
- Clayton, P. (2000) 'Neuroscience, the Person and God: an Emergent Account', in Russell, J. R., Murphy, N., Meyering, T. C., and Arbib, M. A. (eds) *Neuroscience and the Person*. Vatican Press.
- Clayton, P. (2004a) *Mind & Emergence*. Oxford University Press.
- Clayton, P. (2004b) 'Panentheism in Metaphysical and Scientific Perspective', in Clayton, P. and Peacocke, A. (eds) *In Whom We Live and Move and Have Our Being*. Wm. B. Eerdmans Publishing Co., pp. 73–91.
- Clayton, P. (2005) 'Kenotic Trinitarian Panentheism', *Dialog: A Journal of Theology*, 44(3), pp. 250–255.
- Clayton, P. (2008) 'Open Panentheism and Creatio ex nihilo', *Process Studies*, 37(1), pp. 166–183.
- Clayton, P. and Biernacki, L. (ed. . (2014) *Panentheism across the World's Traditions*. Edited by P. Clayton and L. Biernacki. Oxford University Press.
- Clayton, P. and Knapp, S. (2011) *The Predicament of Belief*. Oxford University Press.
- Cobb, J. B. and Griffin, D. R. (1976) *Process Theology, An Introductory Exposition*. Christian Journals Limited, Belfast.
- Cohen, M. a. and Dennett, D. C. (2011) 'Consciousness cannot be separated from function', *Trends in Cognitive Sciences*, 15(8), pp. 358–364.
- Cooper, J. W. (2007) *Panentheism*. Apollos, Inter Varsity Press.
- Crick, F. (1994) *The Astonishing Hypothesis*. Charles Scribner's Sons New York.
- Crick, F. and Koch, C. (2003) 'A Framework for Consciousness.', *Nature neuroscience*. Nature Publishing Group, 6(2), pp. 119–26.
- Damasio, A. (1999) *The Feeling of What Happens*. William Heinemann London.
- Dawkins, R. (2006) *The God Delusion*. Bantam Press.
- Deacon, T. W. (2006) 'Emergence: The Hole at the Wheel's Hub', in Clayton, P. and Davies, P. (eds) *The Re-emergence of Emergence*. Oxford University Press, pp. 111–150.
- Deacon, T. W. (2012) *Incomplete Nature: How Mind Emerged from Matter*. W.W.Norton & Company, Inc.
- Deacon, T. W. and Cashman, T. (2016) 'Steps to a Metaphysics of Incompleteness', *Theology and Science*. Taylor & Francis, 14(4), pp. 401– 429.
- Dehaene, S. (2014) *Consciousness and the Brain*. Viking.
- Dehaene, S., Changeux, J.-P., Naccache, L., Sackur, J. and Sergent, C. (2006) 'Conscious, preconscious, and subliminal processing: a testable taxonomy.', *Trends in cognitive sciences*, 10(5), pp. 204–11.
- Dehaene, S., Kerszberg, M. and Changeux, J. P. (1998) 'A neuronal model of a global workspace in effortful cognitive tasks.', *Proceedings of the National Academy of Sciences of the United States of America*, 95(24), pp. 153–165.
- Dennett, D. (1991) *Consciousness explained*. Back Bay Book.
- Dennett, D. (2001) 'Are we explaining consciousness yet?', *Cognition*, 79(1–2), pp. 221–237.
- Dennett, D. (2003) *Freedom evolves*. Allen Lane.
- Dennett, D. C. (1984) *Elbow Room*. The MIT Press.

- Dennett, D. C. (2009) 'Intentional System Theory', in McLaughlin, B. P., Beckermann, A., and Walter, S. (eds) *The Oxford Handbook of Philosophy of Mind*. Oxford University Press, pp. 339–350.
- DeQuincey, C. (2002) *Radical Nature*. Park Street Press.
- Descartes, R. (no date) *Descartes*. Edited by T. Griffith. The Collector's Library of Essential Thinkers.
- Devaney, R. L. (2003) *An Introduction to Chaotic Dynamical Systems*. Westview Press.
- Dieks, D. (2002) 'Does Chance Make a Difference? The Philosophical Significance of Indeterminism"', in Atmanspacher, H. and Bishop, R. (eds) *Between Chance and Choice*. Imprint Academic, pp. 209–236.
- Dombrowski, D. (2001) 'Charles Hartshorne', in Zalta, E. N. (ed.) *The Stanford Encyclopedia of Philosophy*. Metaphysics Research Lab, Stanford University.
- Drees, W. B. (2007) 'Some Word in Favor of Reductionism, Pantheism, Theism and More', in Clayton, P. (ed.) *All That Is*. Fortress Press, pp. 70–80.
- Dupré, J. (2001) *Human Nature and the Limits of Science*. Oxford University Press.
- Eddebo, J. (2017) *Death and the Self*. Acta Universitatis Upsaliensis, Uppsala Studies in Philosophy of Religion.
- Edelman, G. M. and Tononi, G. (2000) *A Universe of Consciousness*. Basic Books.
- Enxing, J. (2013) *Gott im Werden*. Verlag Friedrich Pustet, Regensburg.
- Falkenburg, B. (2012) *Mythos Determinismus*. Springer Verlag Heidelberg Berlin.
- Fischer, J. M. (2006) 'Responsibility and Alternative Possibilities', in McKenna, M. and Widerker, D. (eds) *Moral Responsibility and Alternative Possibilities*. Ashgate Publishing Limited, pp. 27–52.
- Fischer, J. M. (2013) 'My Compatibilism', in Russell, P. and Deery, O. (eds) *The Philosophy of Free Will*. Oxford University Press, pp. 296–320.
- Frankenberry, N. (1993) 'Classical theism, panentheism and pantheism: On the relation between God construction and gender construction', *Zygon*®, 28(1), pp. 29–46.
- Frankfurt, H. G. (1969) 'Alternate Possibilities and Moral Responsibility', *The Journal of Philosophy*, 66(23), pp. 829–839.
- Frankfurt, H. G. (1971) 'Freedom of the Will and the Concept of a Person', *The Journal of Philosophy*, 68(1), pp. 5–20.
- Frieling, R. (1975) *Christentum und Wiederverkörperung*. Urachhaus.
- Frisch, M. (2012) 'Kausalität in der Physik', in Esfeld, M. (ed.) *Philosophie der Physik*. Suhrkamp Verlag Wissenschaft, pp. 411–426.
- Fromm, E. (no date) *Die Seele des Menschen*. dtv.
- Fuchs, T. (2013) *Das Gehirn - ein Beziehungsorgan*. Kohlhammer, Stuttgart.
- Göcke, B. P. (2017) 'Concepts of God and Models of the God-world relation', *Philosophy Compass*, 12(2), p. e12402.
- Goetz, S. and Taliaferro, C. (2011) *A Brief History of the Soul*. Wiley-Blackwell.
- Goff, P. (2009) 'Why Panpsychism doesn't Help Us Explain Consciousness', *Dialectica*. Blackwell Publishing Ltd, 63(3), pp. 289–311.
- Goff, P. (2017) 'The Phenomenal Bonding Solution', in Brüntrup, G. and Jaskolla, L. (eds) *Panpsychism*. Oxford University Press, pp. 283–302.
- Green, J. B. (1998) "'Bodies - That Is, Human Lives": A Re-Examination of Human Nature in the Bible', in Murphy, N., Brown, W. S., and Malony, H. N. (eds) *Whatever Happened to the Soul?* Fortress Press, pp. 149–174.
- Gregersen, N.-H. (2004) 'Three Varieties of Panentheism', in Clayton, P. and Peacocke, A. (eds) *In Whom We Live and Move and Have Our Being*. Wm. B. Eerdmans Publishing Co., pp. 19–35.

- Gregersen, N.-H. (2006) 'Emergence: What is at Stake for Religious Reflection?', in Clayton, P. and Davies, P. (eds) *The Re-emergence of Emergence*. Oxford University Press, pp. 279–302.
- Griffin, D. R. (1976) *God, Power & Evil*. Westminster, John Knox Press.
- Griffin, D. R. (1998) *Unsnarling the World-Knot*. WIPF and STOCK Publishers.
- Griffin, D. R. (2001) *Reenchantment without Supernaturalism*. Cornell University Press.
- Griffin, D. R. (2004) 'Panentheism: A Postmodern Revelation', in Clayton, P. and Peacocke, A. (eds) *In Whom We Live and Move and Have Our Being*. Wm. B. Eerdmans Publishing Co., pp. 36–47.
- Gustafson, K. " (2002) 'Time-Space Dilations and Stochastic Deterministic Dynamics', in Atmanspacher, H. and Bishop, R. (eds) *Between Chance and Choice*. Imprint Academic, pp. 115–148.
- Habermas, J. (2005) 'Freiheit und Determinismus', in *Zwischen Naturalismus und Religion*. Suhrkamp Verlag, pp. 155–186.
- Haggard, P. (2011) 'Does brain science change our view of free will?', in Swinburne, R. (ed.) *Free will and Modern Science*. Oxford University Press, pp. 7–24.
- Haggard, P. and Eimer, M. (1999) 'On the relation between brain potentials and the awareness of voluntary movements', *Experimental Brain Research*, 126(1), pp. 128–133. doi: 10.1007/s002210050722.
- Hall, L., Johansson, P., Täarning, B., Sikström, S. and Deutgen, T. (2010) 'Magic at the marketplace: Choice blindness for the taste of jam and the smell of tea', *Cognition*. Elsevier B.V., 117(1), pp. 54–61.
- Harman, G. (2011) 'The Problem with Metzinger', *Cosmos and History: The Journal of Natural and Social Philosophy*, 7(1), pp. 7–36.
- Hartshorne, C. (1962) *The Logic of Perfection*. Open Court, Chicago and La Salle, Illinois.
- Hartshorne, C. (1967) *A Natural Theology for Our Time*. Open Court, La Salle Illinois.
- Hartshorne, C. (1970) *Creative Synthesis and Philosophical Method*. SCM Press Ltd.
- Hartshorne, C. and Reese, W. L. (2000) *Philosophers speak of God*. Humanity Books.
- Hasker, W. (1989) *God, Time and Knowledge*. Cornell University Press.
- Hasker, W. (1994) 'A Philosophical Perspective', in Hasker, W., Pinnock, C. H., Rice, R., Sanders, J., and Basinger, D. (eds) *The Openness of God*. InterVarsity Press, pp. 126–154.
- Hasker, W. (2008) *The Triumph of God over Evil*. InterVarsity Press.
- Hasker, W. (2011a) 'Divine Knowledge and Human Freedom', in Kane, R. (ed.) *The Oxford Handbook of Free Will, 2nd edition*. Oxford University Press, pp. 39–56.
- Hasker, W. (2011b) 'Materialism and the Resurrection: are the Prospects Improving?', *European Journal for Philosophy of Religion*, 3, pp. 83–103.
- Hasker, W. and Taliaferro, C. (2014) 'Afterlife', in Zalta, E. N. (ed.) *The Stanford Encyclopedia of Philosophy*. Winter 201.
- Hassel Mørch, H. (2014) *Pansychism and Causation: A New Argument and a Solution to the Combination Problem*. University of Oslo.
- Hassel Mørch, H. (2017) *The Integrated Information Theory of Consciousness, Philosophy Now, Issue 121*. Available at: https://philosophynow.org/issues/121/The_Integrated_Information_Theory_of_Consciousness (Accessed: 23 October 2017).

- HBP (2015) *Human Brain Project*. Available at: <https://www.humanbrainproject.eu/discover/theproject/strategicobjectives;jsessionid=p00ramxd5ucs7qpijvgctgwn> (Accessed: 31 October 2015).
- HBP (2017) *Human Brain Project*. Available at: <https://www.humanbrainproject.eu/2016-overview> (Accessed: 2 February 2017).
- Hick, J. (2010) *The New Frontier of Religion and Science*. Palgrave Macmillan.
- Hodgson, D. (1999) ‘Hume’s mistake’, in Libet, B. (et al. . (ed.) *The Volitional Brain*. Imprint Academic, pp. 201–224.
- Horst, S. (2011) *Laws, Minds and Free Will*. The MIT Press.
- van Inwagen, P. (1978) ‘The Possibility of Resurrection’, *International Journal for Philosophy of Religion*, 9(2), pp. 114–121.
- van Inwagen, P. (1983) *An Essay on Free Will*. Oxford University Press.
- van Inwagen, P. (2002) ‘Free will remains a Mystery’, in Kane, R. (ed.) *The Oxford Handbook of Free Will*, 1st edition. Oxford University Press, pp. 158–179.
- van Inwagen, P. (2005) ‘The Problem of Evil’, in Wainwright, W. J. (ed.) *The Oxford Handbook of Philosophy of Religion*. Oxford University Press, pp. 188–219.
- van Inwagen, P. (2008) ‘How to Think about the Problem of Free Will’, *The Journal of Ethics*, 12(3–4), pp. 327–341. doi: 10.1007/s10892-008-9038-7.
- van Inwagen, P. (2009) *Metaphysics*. Westview Press.
- van Inwagen, P. (2017) *Thinking about Free Will*. Cambridge University Press.
- James, W. (1890) *The Principles of Psychology Vol.1*. New York.
- Jeffner, A. (1981) ‘Att studera livsåskådningar’, in Bråkenhielm, C. R. et al. (ed.) *Aktuella livsåskådningar*. Nora: Doxa.
- Johansson, P., Hall, L., Sikström, S. and Olsson, A. (2005) ‘Failure to detect mismatches between intention and outcome in a simple decision task.’, *Science (New York, N.Y.)*, 310(5745), pp. 116–119. doi: 10.1126/science.1111709.
- Johnson, E. A. (1992) *She Who Is*. The Crossroad Publishing Company New York.
- Kane, R. (1996) *The Significance of Free will*. Oxford University Press.
- Kane, R. (2005) *A Contemporary Introduction to Free Will*. Oxford University Press.
- Kane, R. (2011a) ‘Introduction: The Contours of Contemporary Free-Will Debates’, in Kane, R. (ed.) *The Oxford Handbook of Free Will, 2nd edition*. Oxford University Press, pp. 3–38.
- Kane, R. (2011b) ‘Libertarian Perspectives on Free Agency and Free Will’, in Kane, R. (ed.) *The Oxford Handbook of Free Will, 2nd edition*. Oxford University Press, pp. 381–404.
- Kant, I. (1787) *Kritik der reinen Vernunft*.
- Kant, I. (1788) *Kritik der praktischen Vernunft*.
- Keil, G. (2013) *Willensfreiheit*. De Gruyter.
- Keller, C. (2003) *Face of the Deep*. Routledge.
- Keller, C. (2008) *On the Mystery*. Fortress Press.
- Keller, C. (2015) *Cloud of the Impossible*. Columbia University Press, New York.
- Kim, J. (1989) ‘The myth of nonreductive materialism’, *Proceedings and Addresses of the American Philosophical Association*, 63(3).
- Kim, J. (1993) *Supervenience and Mind*. Cambridge University Press.
- Kim, J. (1998) *Mind in a Physical World*. MIT Press, Cambridge, Massachusetts.
- Kim, J. (2005) *Physicalism or Something Near Enough*. Princeton University Press.
- Kim, J. (2006) ‘Being Realistic about Emergence’, in Clayton, P. and Davies, P. (eds) *The Re-emergence of Emergence*. Oxford University Press, pp. 189–202.

- Kim, J. (2009) 'Mental Causation', in McLaughlin, B. P., Beckermann, A., and Walter, S. (eds) *The Oxford Handbook of Philosophy of Mind*. Oxford University Press, pp. 29–52.
- Kim, J. (2011) *Philosophy of Mind*. Westview Press.
- Kolb, B. (2006) *An Introduction to Brain and Behavior*. Worth Publishers.
- Laplace, P. S. de (1932) *Philosophischer Versuch über die Wahrscheinlichkeit*. Akademische Verlagsgesellschaft Leipzig.
- Leidenhag, M. (2013) 'The Relevance of Emergence Theory in the Science-Religion Dialogue', *Zygon*®, 48(4), pp. 966–983.
- Leidenhag, M. (2016) *Naturalizing God? A Critical Evaluation of Religious Naturalism*. Uppsala University.
- Libet, B. (1999) 'Do we have free will?', in Libet, B. (et al. . (ed.) *The Volitional Brain*. Imprint Academic, pp. 47–58.
- Lowe, E. J. (1999) 'Self, Agency and Mental Causation', in Libet, B., Freeman, A., and Sutherland, K. (eds) *The Volitional Brain*. Imprint Academic, pp. 225–239.
- Luther, M. (1969) 'On the Bondage of the Will', in Rupp, E. G. and Watson, P. S. (eds) *Luther and Erasmus*. The Westminster Press, pp. 101–334.
- Maoz, U., Yaffe, G., Koch, C. and Mudrik, L. (2017) 'Neural precursors of decisions that matter--an ERP study of deliberate and arbitrary choice', *bioRxiv*.
- McFague, S. (1993) *The Body of God*. Fortress Press.
- McFague, S. (2008) *A New Climate for Theology*. Fortress Press.
- McGinn, C. (1999) *The Mysterious Flame*. Basic Books.
- McInerny, R. and O'Callaghan, J. (1999) 'Saint Thomas Aquinas'.
- McKenna, M. and Widerker, D. (eds) (2006) *Moral Responsibility and Alternative Possibilities*. Ashgate Publishing Limited.
- Merlan, P. (1967) 'Greek Philosophy from Plato to Plotinus', in Armstrong, A. H. (ed.) *The Cambridge History of Later Greek and Early Medieval Philosophy*. Cambridge University Press.
- Metzger, W. (1930) 'Optische Untersuchungen am Ganzfeld', *Psychologische Forschung*, 13, pp. 6–29.
- Metzinger, T. (2004) *Being No One*. The MIT Press.
- Metzinger, T. (2014) *Der Ego-Tunnel*. Piper Verlag.
- Moltmann, J. (1985) *Gott in der Schöpfung*. Chr. Kaiser Verlag München.
- Moltmann, J. (1991) *Der Geist des Lebens*. Gütersloher Verlagshaus.
- Montero, B. (2017) 'What Combination Problem?', in Brüntrup, G. and Jaskolla, L. (eds) *Panpsychism*. Oxford University Press, pp. 215–228.
- Murphy, N. (1998) 'Nonreductive physicalism: Philosophical Issues', in Murphy, N. and Brown, W. (eds) *Whatever Happened to the Soul?* Fortress Press, pp. 127–148.
- Murphy, N. (2006) 'Emergence and Mental Causation', in Clayton, P. and Davies, P. (eds) *The Re-emergence of Emergence*. Oxford University Press, pp. 227–243.
- Nagel, T. (1974) 'What is it like to be a bat?', *The Philosophical Review*, 83(4), pp. 435–450.
- Nagel, T. (2012) *Mind & Cosmos*. Oxford University Press.
- Nickel, G. (2002) 'Perspectives on Scientific Determinism', in Atmanspacher, H. and Bishop, R. (eds) *Between Chance and Choice*. Imprint Academic, pp. 33–48.
- Nisbett, R. E. and Wilson, T. D. (1977) 'Telling more than we can know: Verbal reports on mental processes.', *Psychological Review*, 84(3), pp. 231–259.
- Noë, A. (2004) *Action in Perception*. The MIT Press.

- Novum Testamentum Graece (no date) *Novum Testamentum Graece*. Nestle-Aland.
- Oakes, M. A. and Hyman, & I. E. J. (2001) 'The Role of the Self in False Memory Creation', *Journal of Aggression, Maltreatment & Trauma*, 4(2), pp. 87–103.
- Ogden, S. (1977) *The Reality of God*. Harper & Row, Publishers, San Francisco.
- Ohly, L. (2011) 'Die Wiederkehr des Homunkulus. Thomas Metzingers materialistische Dekonstruktion des Selbstbewusstseins', *Neue Zeitschrift für Systematische Theologie und Religionsphilosophie*, 53(2), pp. 155–170.
- Oomen, P. M. F. (2003) 'On Brain, Soul, Self, and Freedom: An Essay in Bridging Neuroscience and Faith', *Zygon®*, 38(2), pp. 377–392.
- Pak, K. K. (2014) 'Could Process Theodicy Uphold the Generic Idea of God?', *American Journal of Theology & Philosophy*, 35(3), pp. 211–228.
- Pannenberg, W. (1993) *Toward a Theology of Nature*. Edited by T. Peters. Westminster, John Knox Press.
- Papineau, D. (2007) 'Naturalism', in Zalta, E. N. (ed.) *The Stanford Encyclopedia of Philosophy*.
- Pauen, M. (2004) *Illusion Freiheit? Mögliche und unmögliche Konsequenzen der Hirnforschung*. Fischer, Frankfurt/M.
- Peacocke, A. (1993) *Theology for a Scientific Age*. Fortress Press.
- Peacocke, A. (1999) 'The Sound of Sheer Silence', in Russell, R., Murphy, N., Meyering, T. C., and Arbib, M. A. (eds) *Neuroscience and the Person*. Vatican Observatory Foundation.
- Peacocke, A. (2000) 'God's Interaction with the World: The Implications of Deterministic Chaos and of Interconnected and Interdependent Complexity', in Russell, J., Murphy, N., and Peacocke, A. (eds) *Chaos and Complexity*. Vatican Press.
- Peacocke, A. (2006) 'Emergence, Mind, and Divine Action: The Hierarchy of the Sciences in Relation to the Human Mind-Brain-Body', in Clayton, P. and Davies, P. (eds) *The Re-emergence of Emergence*. Oxford University Press, pp. 257–278.
- Peacocke, A. (2007) *All That Is*. Edited by P. Clayton. Fortress Press.
- Pereboom, D. (2001) *Living Without Free Will*. Cambridge University Press.
- Pereboom, D. (2006) 'Source Incompatibilism and Alternative Possibilities', in McKenna, M. and Widerker, D. (eds) *Moral Responsibility and Alternative Possibilities*. Ashgate Publishing Limited, pp. 185–199.
- Pereboom, D. (2011) 'Free-Will Skepticism and Meaning in Life', in Kane, R. (ed.) *The Oxford Handbook of Free Will, 2nd edition*. Oxford University Press, pp. 407–424.
- Phillips, D. Z. (2004) *The Problem of Evil and the Problem of God*. SCM-Canterbury Press.
- Pinnock, C. (1994) 'Systematic Theology', in Pinnock, C., Rice, R., Sanders, J., Hasker, W., and Basinger, D. (eds) *The Openness of God*. InterVarsity Press, pp. 101–125.
- Pinnock, C., Rice, R., Sanders, J., Hasker, W. and Basinger, D. (1994) *The Openness of God*. InterVarsity Press.
- Plantinga, A. (1986) 'On Ockham's way out', *Faith and Philosophy*, 3, pp. 235–269.
- Plantinga, A. (2007) 'Materialism and Christian Belief', in van Inwagen, P. and Zimmermann, D. (eds) *Persons: Human and Divine*. Oxford University Press.
- Plantinga, A. (2011) *Where the Conflict Really Lies: Science, Religion and Naturalism*. Oxford University Press.
- Polkinghorne, J. (1989) *Science and Providence*. Templeton Foundation Press.

- Polkinghorne, J. (2000) 'The Metaphysics of Divine Action', in Russell, J. R., Murphy, N., and Peacocke, A. (eds) *Chaos and Complexity*. Vatican Press.
- Polkinghorne, J. (2011) *Science and Religion in Quest of Truth*. Society for Promoting Christian Knowledge.
- Popper, K. R. and Eccles, J. C. (1982) *Das Ich und sein Gehirn*. Piper Verlag.
- Ramachandran, V. S. (2013) *Die Frau, die Töne sehen konnte*. Rowohlt.
- Rea, M. (2014) *Metaphysics*. Routledge.
- Rescher, N. (1996) *Process Metaphysics*. State University of New York Press.
- Rescher, N. (2000) *Process Philosophy*. University of Pittsburgh Press.
- Rescher, N. (2006) 'Causal Necessitation and Free Will', *Process Studies*, 35(2), pp. 193–206.
- Rigoni, D., Kühn, S., Sartori, G. and Brass, M. (2011) 'Inducing Disbelief in Free Will Alters Brain Correlates of Preconscious Motor Preparation', *Psychological Science*, 22(5), pp. 613–618.
- Robinson, H. (2017) 'Dualism', in Zalta, E. N. (ed.) *The Stanford Encyclopedia of Philosophy*. Fall 2017. Metaphysics Research Lab, Stanford University.
- Rosenberg, G. (2004) *A Place for Consciousness*. Oxford University Press.
- Rosenberg, G. (2017) 'A Synoptic Understanding of Consciousness', in Brüntrup, G. and Jaskolla, L. (eds) *Panpsychism*. Oxford University Press, pp. 153–175.
- Russell, B. (1913) 'On the Notion of Cause', *Proceedings of the Aristotelian Society, New Series*, 13, pp. 1–26.
- Sanders, J. (1998) *The God Who Risks*. InterVarsity Press.
- Schlicht, T. (2007) *Erkenntnistheoretischer Dualismus*. Mentis Verlag, Paderborn.
- Schultze-Kraft, M., Birman, D., Rusconi, M., Allefeld, C., Görgen, K., Dähne, S., Blankertz, B. and Haynes, J.-D. (2015) 'The point of no return in vetoing self-initiated movements', *Proceedings of the National Academy of Sciences*, 113(4), pp. 1080–1085.
- Schurger, A., Sitt, J. D. and Dehaene, S. (2012) 'An accumulator model for spontaneous neural activity prior to self-initiated movement', *Proceedings of the National Academy of Sciences*, 109(42), pp. E2904–E2913.
- Seager, W. (1995) 'Consciousness, information and panpsychism', *Journal of Consciousness Studies*. Imprint Academic, 2(3), pp. 272–288.
- Seager, W. (2009) 'Panpsychism', in McLaughlin, B. P., Beckermann, A., and Walter, S. (eds) *The Oxford Handbook of Philosophy of Mind*. Oxford University Press, pp. 206–222.
- Searle, J. (2000) 'Consciousness', *Annual Review of Neuroscience*, 23(1), pp. 557–578.
- Searle, J. (2004) *Mind: A Brief Introduction*. Oxford University Press.
- Seibt, J. (2012) 'Process Philosophy', in Zalta, E. N. (ed.) *The Stanford Encyclopedia of Philosophy*. Metaphysics Research Lab, Stanford University.
- Sherburne, D. W. (1966) *A Key to Whitehead's Process and Reality*. The Macmillan Company New York.
- Silberstein, M. (2006) 'In Defence of Ontological Emergence and Mental Causation', in Clayton, P. and Davies, P. (eds) *The Re-emergence of Emergence*. Oxford University Press, pp. 203–226.
- Skrbina, D. (2005) *Panpsychism in the West*. MIT Press, Cambridge, Massachusetts.
- Smedes, T. A. (2004) *Chaos, Complexity and God*. Peeters.
- Soon, C. S., Brass, M., Heinze, H.-J. and Haynes, J.-D. (2008a) 'Supplementary Information -Unconscious determinants of free decisions in the human brain', *Nature Neuroscience*, 11(5).

- Soon, C. S., Brass, M., Heinze, H.-J. and Haynes, J.-D. (2008b) 'Unconscious determinants of free decisions in the human brain', *Nature Neuroscience*, 11(5), pp. 543–545.
- Søvik, A. O. (2016) *Free Will, Causality and the Self*. De Gruyter.
- Speak, D. (2011) 'The Consequence Argument Revisited', in Kane, R. (ed.) *The Oxford Handbook of Free Will, 2nd edition*. Oxford University Press, pp. 115–130.
- Sperry, R. W. (1961) 'Cerebral Organization and behavior', *Science*, 133, pp. 1749–1757.
- Sprigge, T. L. . (2006) *The God of Metaphysics*. Oxford University Press.
- Sprigge, T. L. S. (1998) *Panpsychism*. Taylor & Francis Group.
- Stapp, H. P. (2007) *Mindful Universe*. Springer-Verlag Berlin Heidelberg.
- Stenmark, M. (2004) *How to relate Science and Religion*. B.Eerdmans Publishing.
- Stenmark, M. (2016) 'Varför Guds existens spelar roll', in Stenmark, M. and Franck, O. (eds) *Att undervisa om människosyner och gudsuppfattningar*. Liber, pp. 44–67.
- Stoljar, D. (2016) 'Physicalism', in Zalta, E. N. (ed.) *The Stanford Encyclopedia of Philosophy*. Spring 201. Metaphysics Research Lab, Stanford University.
- Strawson, G. (1994) 'The Impossibility of Moral Responsibility', *Philosophical Studies*, 75, pp. 5–24.
- Strawson, G. (2006a) 'Panpsychism?', *Journal of Consciousness Studies*, 13(10–11), pp. 184–280.
- Strawson, G. (2006b) 'Realistic Monism', *Mind*, (10), pp. 3–31.
- Strawson, G. (2010) *Mental Reality*. 2nd edn. The MIT Press.
- Strawson, G. (2011) 'The Impossibility of Ultimate Responsibility?', in Swinburne, R. (ed.) *Free Will and Modern Science*. Oxford University Press, pp. 126–140.
- Strawson, G. (2013) *Freedom and Belief*. Oxford University Press.
- Stump, E. (2006) 'Moral Responsibility without Alternative Possibilities', in McKenna, M. and Widerker, D. (eds) *Moral Responsibility and Alternative Possibilities*. Ashgate Publishing Limited, pp. 139–158.
- Swinburne, R. (2004) *The Existence of God*. 3rd edn. Oxford University Press.
- Swinburne, R. (2013) *Mind, Brain & Free Will*. Oxford University Press.
- Swinburne, R. (2015) 'The Inevitable Implausibility of Physical Determinism', *Journal of Consciousness Studies*, 22(11–12), pp. 43–59.
- Timpe, K. (2013) *Free Will*. Bloomsbury.
- Timpe, K. (2014) *Free Will in Philosophical Theology*. Bloomsbury.
- Tononi, G. (2008) 'Consciousness as integrated information: A provisional manifesto', *Biological Bulletin*, 215(3), pp. 216–242.
- Tononi, G. (2012) *Phi*. Pantheon Books, New York.
- Tononi, G. and Edelman, G. M. (2000) *A Universe of Consciousness*. Basic Books.
- Tononi, G., Oizumi, M. and Albantakis, L. (2014) 'From the Phenomenology to the Mechanisms of Consciousness: Integrated Information Theory 3.0', *PLoS Computational Biology*, 10(5).
- Trakakis, N. (2008) 'Theodicy: The Solution to the Problem of Evil, or Part of the Problem?', *Sophia*, 47, pp. 161–191.
- Vicens, L. C. (2012) 'Divine determinism, human freedom, and the consequence argument', *International Journal for Philosophy of Religion*, 71(2), pp. 145–155.
- Wade, K. a, Garry, M., Read, J. D. and Lindsay, D. S. (2002) 'A picture is worth a thousand lies: using false photographs to create false childhood memories.', *Psychonomic bulletin & review*, 9(3), pp. 597–603.

- Ward, K. (1998) *Religion & Human Nature*. Clarendon Press Oxford.
- Wegner, D. (2002) *The Illusion of Conscious Will*. Bradford Books, The MIT Press.
- Whitehead, A. N. (1930) *Religion in the Making*. Cambridge University Press.
- Whitehead, A. N. (1978) *Process and Reality*. The Free Press.
- Widerker, D. (2011) 'Frankfurt-friendly Libertarianism', in Kane, R. (ed.) *The Oxford Handbook of Free Will, 2nd edition*. Oxford University Press, pp. 266–287.
- Wierenga, E. (2013) 'Omniscience', *The Stanford Encyclopedia of Philosophy*. Winter 201. Edited by E. N. Zalta. Metaphysics Research Lab, Stanford University.
- Zagzebski, L. (2002) 'Recent Work on Divine Foreknowledge and Free Will', in Kane, R. (ed.) *The Oxford Handbook of Free Will, 1st edition*. Oxford University Press, pp. 45–63.
- Zimmer, H. (1979) *Philosophie und Religion Indiens*. Suhrkamp Verlag.
- Zimmermann, D. (1999) 'The Compatibility of Materialism and Survival: the "Falling Elevator" Model', *Faith and Philosophy*, 16(2), pp. 194–212.

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