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THE FUNCTIONS OF THOUGHT EXPERIMENTS IN SYSTEMATIC THEOLOGY

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ABSTRACT: In this article, we argue that thought experiments have an important and specific role to play within science in general and that they can play the same important role in a specific type of systematic theology. If this line of reasoning succeeds, it provides support for the scientific credibility of systematic theology. We give a summary of a more comprehensive argument for different argumentative functions of thought experiments presented in another article and then we show how the same typology can work within systematic theology. By strengthening or weakening a theory's consistency, cohesiveness, or comprehensiveness, thought experiments provide critical data to assess the relative strength of a theory. The same goes for theories within systematic theology. We show how thought experiments can test and even falsify theological theories and do this in an intersubjective manner. As such, they support the scientific status of theological theories.

KEYWORDS: thought experiments; systematic theology; coherence theory; Wolfhart Pannenberg.

Introduction

In this article, we argue that thought experiments have a specific role to play within science in general[1] and that it can play the same important role in a specific type of systematic theology. If this line of reasoning succeeds, it provides support for the scientific credibility of systematic theology. Even though the discussion of thought

[1] We use "science" in a broad sense, including the humanities instead of just referring to natural science.

experiments has been intense for three decades (see e.g., Roux, 2011; Stuart, Fehige, & Brown, 2018), it has not been given much attention within systematic theology.[2]

In an article, Yiftach Fehige has identified six "intersections" where thought experiments verge with theology (Fehige, 2018, pp. 183–193). We present it here as an overview of thinking about thought experiments and theology, to demonstrate how our approach offers a new contribution. First, Peter Geach has argued that many thought experiments in ethics where you have to choose between valid moral norms should be rejected. Geach defends a divine command theory of ethics, from which it follows that no genuine moral dilemma of that kind could occur in this world created by God. In real life, God would block the scenarios from happening and thus they are methodologically illegitimate. Fehige, however, rejects this position because he finds divine command theory extremely problematic.

Second, Paul Thagard rejects thought experiments *tout court* because they are useless, and in Thagard's view all theology is useless. The uselessness is due to their lack of evidence and they could both be discarded as figments of the imagination. In the philosophy of the human mind, many thought experiments have been developed, but they all seem to be severely misguided and have not been able to improve our understanding of the mind. Fehige rejects Thagard's skepticism, especially because it seems contradictory that Thagard supports computer simulations in the study of the mind. The authors of this article certainly do not share the view that theology is useless, and this article serves to support the scientific status of theology.

Third, John Polkinghorne argues that because both systematic theology and natural science use thought experiments congruently, systematic theology is to be counted among the sciences. Both disciplines rest on critical realism and only the very diverse subject matter makes them different; it's not a question of methodology (at least at first hand). Fehige is largely in agreement with Polkinghorne but he insists on further exploration because it is still controversial to say that the study of the micro-physical world and the supernatural realm rest on the same language model. The former is often taken to be univocal, the latter analogically and thus the homogeneity between how thought experiments are conceived in these fields might be overstated.

Fourth, Eleonore Stump argues that narratives contribute importantly to theological reflection. She proposes this view as a correction of the project of analytic theology and wants to argue for the inclusion of literature in the study of theology and not just philosophical thought experiments. Fehige criticizes her narrow view on thought experiments, but he also turns it around and says that her view can be seen as a defense of a broader notion of thought experiments in theology. It is uncontroversial to count fiction (literary prose) as thought experiments and somewhat unintendedly, Stump's perspective is a good explication of this view. The epistemological point is that there might be certain types of knowledge that are inaccessible except through literary fiction (e.g., first-person experiences).

Fifth, philosophy uses thought experiments in large numbers and philosophical theology is no exception. In short, this view says that since most philosophers accept the value of thought experiments their value for theological reasoning should also be

[2] See, however, Gregersen (2014) for one attempt to map the problems and possible uses of thought experiments in theology.

acknowledged, e.g., seen in the writings of John Hick with his famous defense of possible eschatological verifications in theology (Hick, 1960; 1977).

And sixth, even revelational theology benefits from the use of thought experiments, seen in the classic example of the church mouse that eats the consecrated body of Christ. The point is to think through if the spiritual benefits from eating the bread and wine/body and blood rest on anything other than merely eating, e.g., by creating a distinction between *eating* and *consuming*. Thought experiments sharpens our theological conceptions and magnify the implications of the often-delicate metaphysics implied.

Of these different approaches, Polkinghorne is most similar to ours. He argues that thought experiments play a hermeneutic role in helping us in a gradual process of conceptually exploring reality in more subtle, detailed and realistic ways (Polkinghorne, 2007, p. 51; pp. 57-58; p. 93; and Polkinghorne, 2005, p. 169). Polkinghorne expresses his view on thought experiments very briefly. We explain more finely grained than Polkinghorne how that happens, in terms of a detailed coherence theory. In a recent book, Fehige criticizes Polkinghorne's theory of thought experiments, primarily for depending too much on scientific and theological monism (Fehige, 2023, Ch. 3). We support such monism, however, and find instead Fehige's alternative worse. He has a pluralistic understanding of thought experiments as a means of divine revelation (Fehige, 2023, p. 201 and p. 209), which we find to be an unconvincing theory since it is unfalsifiable.

Our intention in this article is now to present a better justified account of how thought experiments should be understood in the context of systematic theology. By providing such an argument, this article fills a gap in research and takes the first step in identifying relevant issues and providing constructive answers. The outline of the article is as follows: In another article, we have argued for a distinct view on thought experiments in science by comparing our view with relevant alternatives (Mørch & Søvik, 2024a). In this article, we presuppose this understanding, which will be briefly presented below. The proposal is that both science and thought experiments are best understood in light of the coherence theory presented by Lorenz Puntel and Nicholas Rescher (Puntel, 2008; Rescher, 1973). Very briefly put, scientific work (developing, improving, criticizing or comparing theories) proceeds by demonstrating either presence or absence of different aspects of coherence, and thought experiments can contribute to all the different aspects of this work (Rescher, 2005, p. 12).[3] This understanding of science and thought experiments will be introduced in the second part of this article.

In part three, we argue that the view that science is best understood in light of coherence theory resembles the view that systematic theology should use coherence

[3] One of the reviewers contested our strong emphasis on coherence as "a defining feature" of scientific work. It is impossible to defend this view within the scope of an article, and thus we can only presuppose it. Very briefly put, our view is as follows: Coherence is the defining feature in the sense that all understanding is related to the task of integrating new data into existing theories. Simply out, there is no understanding apart from coherence. Scientific work is not reducible to assessment of coherence, but it cannot work apart from it. We have defended this view in different works (removed for the sake of blind review) and refer to Puntel (2008) and Rescher (1973) for elaborated discussions on these matters.

theory as method, as argued by Wolfhart Pannenberg (1991, Ch. 1).[4] For this kind of systematic theology, thought experiments can play the same vital scientific role as they do in all other scientific research. We aim to substantiate this thesis by showing how different thought experiments in systematic theology have this specific function. In order to do this, we present a number of theological thought experiments – some collected, some suggested by us – sorted by their contribution to theories' consistency, comprehensiveness, and/or cohesiveness, which are the crucial aspects of coherence theory.

In the fourth part, we provide a defense of the scientific credibility for this kind of systematic theology, based on a book by one of the authors (Mørch, 2023). In the present article, the focus is narrowed down to the function of thought experiments in support of the scientific credibility of systematic theology. Systematic theology is able to meet the common objections that it is not a scientific discipline because its theories (a) cannot be tested, (b) are not falsifiable, (c) cannot meet intersubjective standards, (d) are normative, or (e) are not sufficiently unique and still scientific. Thought experiments can sustain the arguments that say that these objections fail because thought experiments can provide tests, can falsify theories, can be accepted intersubjectively, and are able to thematize the unique theme of theology (i.e., God).[5]

In the fifth part, we summarize the argument and conclude on the research question.

A New Understanding of Thought Experiments and Their Argumentative Functions

This part of the article presents our proposal for a new understanding of thought experiments and their argumentative functions in light of coherence theory. The proposal is to understand scientific work as the development and assessment of theories in light of coherence theory. This gives a very detailed description of the

[4] One of the reviewers contested that Pannenberg is a relevant source because of Nancey Murphy's thorough critique of Pannenberg's philosophy of science in her book *Theology in an Age of Scientific Reasoning* (1990). Murphy's argument against Pannenberg is not relevant in our context because she doesn't argue against the notion of coherence. She argues that Pannenberg is circular in his reasoning when he argues for the meaning of history through the resurrection of Jesus. Pannenberg's Hegelian philosophy of history is necessary for the claim that the resurrection is the apex of history, but the resurrection is necessary for the claim that we can know the meaning of history before the end of time. Murphy's other argument is that Pannenberg's understanding of comprehensiveness is unworkable since he has to include David Hume's atomic view of history in his own theory, and this is impossible since Hume's epistemology undermines Pannenberg's. We are not convinced that Murphy's understanding of Pannenberg's theory of comprehensiveness is correct, but her critique does not have implications for our argument in any case. Comprehensiveness regards the view that the best theory can integrate the highest number of relevant data in a consistent and cohesive way. It is not important to integrate other theories to show superiority since other theories are not necessarily relevant data. For Murphy's critique of Pannenberg, see Murphy (1990, pp. 19–50). For a critique of Murphy and an expanded defense of Pannenberg, see Mørch (2023, pp. 174–203).

[5] As Mørch (2023, Ch. 7) shows, it is not a problem that theories of systematic theology are normative, even in a strong sense, so that is not relevant to discuss further here.

processes at every stage of the scientific work. The idea is thus that if we understand scientific work through coherence theory we are able to show how thought experiments can play a relevant and important role at the different stages of scientific work.

The method in the following will be to begin with a basic description of theoretical development and assessment in light of coherence theory. We then proceed to use this description in relation to thought experiments and categorize different thought experiments as exemplifications of our proposal. The categorization focuses on the three central features of coherence theory, i.e., consistency, cohesiveness (including fine-grainedness), and comprehensiveness as it is explained below.[6]

According to Puntel, coherence is a matter of connections between data (Puntel, 2008). This can be clarified by focusing on different aspects of what makes something coherent. We choose to simplify his more elaborate account here by focusing on three main aspects of coherence, i.e., consistency, cohesiveness, and comprehensiveness. These three aspects will be presented below.

The first aspect is consistency. Consistency means that the elements of a theory cannot contradict each other. More precisely: One cannot say both p and not-p at the same time with regard to the same.[7] A theory that appears to be contradictory may be clarified by means of new distinctions and shown to be consistent in this clarified manner (see below). But the point remains that something inconsistent cannot be true.

The second aspect is comprehensiveness. If a theory is more coherent, it will manage to integrate more data in a consistent way. Data is here understood as "truth candidates," (cf. Rescher, 1973, pp. 39–40; Puntel, 2008, p. 43) which encompasses everything that somebody has reasons to hold as true. This is important to emphasize in order to avoid main objections to coherence theory of truth. One of these says that a theory can be coherent without being true. A comic strip about Donald Duck in Duckburg can be coherent but this does not make it true. But the present coherence theory does not say that a theory is true as long as it is coherent, but instead that the theory that integrates the most data in the most coherent way is best justified as true. A theory that says that stories about Donald Duck are fictional is obviously more coherent than the belief that there is a place called Duckburg where Donald Duck actually lives, since the former is able to integrate more data we have about ducks, Disney, geography, etc.

The third aspect is cohesiveness. A good theory must not only have many parts that do not contradict each other but must also connect these data together. The more connections a theory is able to clarify, the more coherent it is. Puntel gives no detail of how to think about different kinds of connections, but we suggest that "cohesiveness" includes all kinds of connections (logical, spatial, causal, etc.) between all kinds of data (Andersen & Søvik, 2022). This implies that what is usually thought of as criteria for truth or criteria for good scientific theories are different types of connections that strengthen the coherency of the theory. Deductive and inductive connections,

[6] The following presentation of Puntel's coherence theory is taken almost verbatim from Mørch and Søvik (2024a).

[7] As already Hegel showed, even the antithetical view of truth is context dependent. See Hegel (2010, pp. 381–382).

connections of causality and intent, predictions, and tests, how things are related to time and space, how things are compared to each other, etc. – these are all different types of connections that makes the theory more coherent, without any of them being decisive alone to show that the theory is true. When a theory manages to clarify all kinds of connections between a large number of data in a consistent way, we get a good reason to believe that it is a true description of how the states of affairs in the world relate to each other.

A sub-aspect of cohesiveness is fine-grainedness. While we understand it as a part of cohesiveness, it is a helpful feature to look for when comparing degrees of cohesiveness, as shown below in the analysis of thought experiments. The more connections there are between data in a theory, and the more precisely these data are described or the more precise the connections between the data are described, the more fine-grained is the theory. Fine-grainedness is thus about degrees of detail, specificity, and precision (Puntel, 2008, pp. 408–411). For example, it may be true that there are birds in the forest, but this is a coarse-grained truth. It is possible to say something more fine-grained about it, such as the number of birds, the types/species of the birds, which forest they are in, etc.

With this basic introduction to coherence theory, we can now discuss how this can be used to understand scientific work. All scientific work takes its point of departure in existing theories (whether mundane or scientific). This gives scientists three possibilities for stating new hypotheses. First, you can *develop* your own theories or *improve* your own or others' theories. Second, you can *criticize* existing theories. Third, you can *compare* one theory with another in order to show that A is a better theory than B. What makes a theory best justified as true depends on how coherent it is in comparison with alternative theories. With the short introduction of coherence theory above, we can now unite coherence theory with the short outline of the three possibilities for stating new hypotheses. One, if you seek to *develop* or *improve* a theory, you need to demonstrate that you maintain consistency, and/or that you increase the degree of cohesiveness, and/or comprehensiveness. Two, if you seek to *criticize* a theory you need to demonstrate *lack of* consistency, cohesiveness, or comprehensiveness of the theory. Third, if you seek to *compare* two theories in order to demonstrate the superiority of one over the other, you need either to show (i) that A is *consistent* and B is not, or (ii) that A is relatively more *cohesive* than B, or (iii) that A is relatively more *comprehensive* than B. Since cohesiveness and comprehensiveness come in degrees, a theory can be superior in one of these aspects or as a whole. Often, a comparison will only zoom in on a part of a theory and show that with regard to this datum or this connection, theory A is better than B.

To sum up: To demonstrate either presence or absence of the different aspects of coherence can be done in order to develop/improve an existing theory, to criticize other theories, or to show that one theory is better than another. We suggest that all thought experiments can be understood as concrete examples of one of these functions. As to consistency, a large number of thought experiments are created to show that a theory is inconsistent (the *destructive* function). Since consistency is an either-or issue, if the thought experiment is successful, the theory (in its present form) is destroyed, but it may be rescued by introducing new distinctions or clarifications. Unless such

repairs are ad hoc, the thought experiments which first point out inconsistency, can help to improve the theory by making it more fine-grained.

As to cohesiveness, the more connections we are able to identify between data in a theory the better, since connections increase the coherence of the theory by integrating relevant data. How do we determine which data are relevant? The number of connections between data and the topic of the theory indicates the relevance of a datum, but how relevant a datum is itself a matter of discussion. The criterion of coherence can also be used in the discussion of relevance. If a theory is able to integrate a finely grained datum with many connections to the topic of the theory, while alternative theories on the same topic cannot integrate it, this is an important/relevant datum for such theories to integrate. Thought experiments can be created to show lack of relevant connections or clarify existing connections in a theory.

As to comprehensiveness, the more relevant data that is integrated in a theory, the better. A thought experiment can be created to demonstrate that theory A lacks specific relevant data, or that theory B integrates important data, but most often it is demonstrated that one theory is superior to another because it manages to integrate a larger number of relevant data.

Finally, there are, of course, also cases where a thought experiment has all the three argumentative functions. Concerning consistency, one theory can show that a datum is consistent with this theory and not with the other. Concerning comprehensiveness, it can show that the theory integrates a datum that the other cannot. Concerning connectedness, it can show that one datum can be connected with the theory, but not with the other.

After this short overview of our proposal of the role of thought experiments in science we proceed to the core of the article: The role of thought experiments in systematic theology (part three) and their implicit argument for the scientific credibility of systematic theology (part four).

The Role of Coherence in Pannenberg's Theology and the Place for Thought Experiments

Throughout his immense production, Wolfhart Pannenberg had a keen interest in arguing for the scientific soundness of theology. This is easily shown in some of his most influential work (Pannenberg, 1973; 1991).

An important point for Pannenberg is that systematic theology strives towards truth, but what is truth? His theory of truth is based on Puntel's coherence theory. Even though Pannenberg's presentation of coherence theory is rudimentary, to say the least, his three-volume systematic theology is a comprehensive study of how to use coherence theory in practice. The word "coherence" is not used throughout, but the matter and focus are everywhere, both in his lengthy historical studies and in his systematic proposals. Pannenberg starts discussions of topics with long historical presentations in order to demonstrate that his position is more coherent than previous proposals. This is in line with his suggested method in his 1973 book on theology and philosophy of science (Pannenberg, 1973, pp. 344–345).

But what about the focus of this article, i.e., thought experiments? Can we get a better understanding of thought experiments in theology with the aid of Pannenberg? In the following, we consider different aspects of coherence theory by use of examples to see how the argumentative function of thought experiments can be understood in relation to systematic theology.

Consistency

Consider the theory that there exists an omnipotent God, defined as a being with the power to actualize any state of affairs. Against this theory one can offer the thought experiment that challenges God to create a stone so heavy that God cannot lift it. If God *can* create such a stone, God is not omnipotent because God cannot lift the stone. If God *cannot* create such a stone, God is not omnipotent because there is something God cannot do, viz., to create such a stone. The two alternatives are mutually exclusive and they exhaust all possible alternatives, thus demonstrating that it is inconsistent to believe that God is omnipotent in this sense. Often, as said above, a pointing out of inconsistency will be answered with a clarification so that the result becomes a clarification of concept, conditions or relations that makes the theory more fine-grained. In the example of God and the stone, it is possible to reply by refining the concept of omnipotence, and say that omnipotence implies the possibility to limit one's power in the future. Thus, one can affirm that God is omnipotent, and that God could choose to create a stone that is so heavy that God could not lift it with the consequence that God would no longer be omnipotent (this reply is offered in Swinburne, 1977/2016, pp. 150–174). As long as God does not create this stone, God remains omnipotent. The thought experiment helps the defender of omnipotence to clarify that the concept of omnipotence defended includes the possibility of losing omnipotence.

Sometimes, a thought experiment is created to defend a theory against the critique of inconsistency. The aim is then to use the thought experiment to show that the theory is consistent after all. An example of this is Alvin Plantinga's defense for God's omnipotence and goodness despite the presence of suffering in the world (Plantinga, 1977). Critics say that it is logically impossible to make belief in a good and omnipotent God compatible with suffering, since a good and omnipotent God both could and would prevent suffering (e.g., Mackie, 1955). Plantinga made a thought experiment of "transworld depravity," arguing that God's omnipotence and goodness is compatible with suffering. If God would compromise moral freedom and determine moral actions the situation would be different, but if moral agents are free to make choices – even if we accept that God weakly actualizes certain states of affairs in which we act – evil will always be a part of any world (Plantinga, 1977, Ch. 4). God giving free will to humans does not show that God's goodness and omnipotence are consistent with natural evils like diseases and natural disasters. But Plantinga also suggested as a thought experiment that God gave free will to Satan, and that he caused natural evils (Plantinga, 1977, pp. 57–59). He says that he does not argue that this is actually a plausible theory of God and evil, but merely that it is possible, and thus not inconsistent to believe both in a good and omnipotent God and that there are moral

and natural evils (cf. Plantinga, 1981).[8] As a possibility, it is a thought experiment that anyone can perform regardless of whether they believe in the existence of Satan or not, to see that it is not inconsistent to believe both in a good and omnipotent God and that there are moral and natural evils.

Comprehensiveness

Different theories in systematic theology constantly seek to integrate more data like, for example, new data from the natural sciences, historical data, and new ethical insights. Various thought experiments can be used to help in this process. For example, one can imagine what God's intention was when creating or being incarnated in order to consistently integrate evolution or suffering or the cross. The most typical examples of thought experiments discussing comprehensiveness are examples meant to show that one theory is more comprehensive than another in being able to integrate more data consistently.

Such thought experiments are as old as the Bible, and even the parables of Jesus have similar functions as thought experiments, demonstrating that one understanding is better than another (Matthew 7:9–11; Matthew 12:22–32; Luke 5:33–39, etc.).[9] In one case, we see the Sadducees (who do not believe in life after death), use a thought experiment against Jesus, who believes in life after death. They ask Jesus to imagine a woman who is in the unfortunate situation of having lost seven husbands to premature death and then ask: Who will she be married to in heaven? (Matthew 22:23–34) The thought experiment is meant to show that belief in the afterlife is inconsistent while denying an afterlife is consistent. The thought experiment of a woman married to several brothers is a datum that the Sadducees believe cannot be integrated with a theory of an afterlife while it can be integrated with their view, thus showing that denying an afterlife is a more comprehensive theory than affirming it.

Another example is how William Lane Craig defends that the universe has a beginning instead of being eternal. If the universe was eternal, it must have transversed an infinity to arrive today, but that is impossible. Craig uses a thought experiment to show this: Imagine meeting a man and hearing him count down ending with …, 4, 3, 2, 1, 0. You ask him what he is doing, and he says that he has just finished counting down from infinity (Craig, 2008, p. 124). The thought experiment is meant to demonstrate that this is an impossible scenario. Why would the man finish counting at that exact point of time? Why not the day before, the day after, or never? The idea of transversing a finite amount is inconsistent, according to this thought experiment. We should thus believe that the universe had a beginning, and look for its cause, since everything that begins to exist has a cause outside itself.

An example of a thought experiment that is critical of traditional theological views and that seeks to undermine the position of a good creator God by referring to a more comprehensive theory, is Stephen Law's "evil-god theory." This thought experiment

[8] For further examples from non-theological discourses (like Bertrand paradoxes and Shoemaker's discussion of time), see Mørch and Søvik (2024a).

[9] For a discussion of examples from Revelation, see Fehige (2012, p. 266ff).

supposes that an evil god created the universe, and he argues that this theory is better able to account for all relevant data than the belief that the universe was created by a good God (Law, 2010).[10]

Cohesiveness

How should we understand the connection between ourselves when we were children and today? And how should we understand the connection between a human living on earth and the same person living after death? The last question is especially difficult if one does not have a dualistic understanding of soul and body, for if the body decays after death, it seems that God recreating a person after death would merely be a copy of the person living on earth. Questions like these have created many different thought experiments in order to understand the connection between persons before and after different events.

In *Reasons and Persons* from 1984, Darek Parfit discusses the conditions for personal identity over time. Is it physical continuity or is it psychological connectedness and continuity, or maybe different combinations of these? Parfit creates some thought experiments connected to teleporting and to a possible split between brain and body halves. As to the latter: Imagine that you are in an accident. You are heavily injured, but the doctors manage to save half your brain and half your body. You have a lot of memories in the remaining part of the brain, and it is connected to a new brain hemisphere. The half of your body is then connected to a new half that the doctors are able to sew together. You therefore think that you survived the accident and that you are still yourself. But then the doctors inform you that they also managed to save the other halves of your brain and body, and that these parts are now sewn together with new halves, also having memories from the past. Now, suddenly, there are two persons with physical and psychological coherence and continuity with the former person, but which of these are you? What should be the reason that only one of them is you? Is it the case that you survived first, but then ceased to exist when two new persons appeared – but how could a double success be a failure? Or can we say that two persons can be identical to one person – but how can one be identical to two?

The question of what constitutes personal identity over time is highly relevant also for the question of how a person saved by God can be the same after death if there are no cartesian souls. Peter van Inwagen and Dean Zimmermann have offered different thought experiments to explain how a person could remain the same after death.[11] van

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[10] Further examples of thought experiments in the category of comprehensiveness are Parfit's teleportation example, Foot's trolley problem (1967), Rawls's veil of ignorance, and Hobbes's social contract.

[11] See criticism by Taliaferro and Knuths (2017). A key point for Taliaferro and Knuths is that the probability of a thought experiment is increased the closer it is to phenomenological realism. The more "outlandish" a thought experiment is the less epistemic value it has. Cf. Elster (2011). Taliaferro has argued in the same direction against Peter van Inwagen's critical position (Taliaferro, 2001) and in a combined defense and criticism of Derek Parfit in Taliaferro (2012). A very good point in the latter article is that the stories we use for many thought experiments gain value from being elaborated into longer narratives where the moral choices (in Taliaferro's example) are more clearly explained. The point is

Inwagen asks us to imagine that God removes the corpse of a man at the moment of his death. Instead, God replaces the corpse with a simulacrum and it is this simulacrum that is burned and buried. When God raises this man, he has the components to recreate him and thereby keep his identity. Or we can imagine that the identity does not need the whole body and God then only removed the essential parts, such as the brain or the nervous system (van Inwagen, 1992, pp. 245–246).[12] Zimmerman has an even more outlandish thought experiment. We can imagine that every simple particle of a person is duplicated at the moment of death. The original particles (body) decays, but the duplicated particles (the resurrection body) continues to live in another space as the "closest continuer" of the original body. The argument is then, that since life is continued by the "new" body, it is this one and not the pre-death body that preserves the identity of the person (Zimmerman, 1999; 2010).[13]

Another example of thought experiments demonstrating cohesiveness concerns the classical challenge of inconsistency between God's goodness and letting Jesus suffer innocently on the cross. Thought experiments can then be used to show how these two data can be coherently connected. A typical thought experiment is as follows: A man has done something wrong and is brought to court. The judge turns out the be his father. The verdict of the judge is that the son is guilty and must pay a large fine. However, afterwards his father pays the fine for him (Kennard, 2017, p. 258).

Another thought experiment can be used to argue against this being the right way to connect these data. Imagine that a person is sent to court for having abused and killed children, and is given the death penalty (or sentenced for life). If an innocent person offers to take the punishment instead (or to kill his innocent son, who agrees with the plan, as a substitute punishment), we would not think of this as good. The parents, having lost their children, would not accept that somebody else than the guilty person was punished.

Fine-grainedness

The notion of fine-grainedness is here seen as a subcategory of cohesiveness. It is also possible to show how thought experiments help us clarify some theological ideas regarding this aspect.

The following thought experiment was discussed in the Middle Ages: Imagine that a mouse finds some bread that has been dropped on the floor during the eucharist and eats it. What would be the effect? This is a thought experiment that challenges the believer in the sacrament of eucharist to explain in more fine-grained detail how to understand the bread as the body of Christ, and what effect is has, for whom, and for how long.

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that sufficient details are needed when a thesis is sought to be motivated, clarified, and defended. See pp. 200–203 for a helpful example.

[12] van Inwagen 1992. Summary adjusted from https://plato.stanford.edu/entries/afterlife/. See also the comments to van Inwagen's thought experiment there by Taliaferro and Hasker (2019).

[13] Summary from https://plato.stanford.edu/entries/afterlife/.

Different thought experiments can help believers in omnipotence and omniscience to clarify exactly what omnipotence and omniscience entail and how these properties should be defined more precisely. Traditional discussions are whether God can do something logically impossible and immoral, or know what people with free will may do in the future, or even what God will do in the future. D. Z. Phillips offers a lot of different *reductio ad absurdum* thought experiments aiming to show many things an omnipotent God cannot do: Can God enjoy an ice cream? Can God ride a bicycle? Can God learn a new language? Can God hit his head? (Phillips, 2004).

As artificially intelligent machines become more advanced, they will undoubtedly raise many theological questions, and these can be raised as thought experiments already. In philosophy, all sorts of concepts are being discussed in light of hypothetical robots with great intelligence – could they have free will, responsibility, value, rights, consciousness, etc? For theology, we can imagine robots praying, giving blessings, wanting to be baptized, etc., and raise questions of whether robots can sin, die, be saved, be created in the image of God and so on. Even if we do not think it is realistic that robots will have any of these properties, they challenge us to give more fine-grained accounts of what exactly the conditions are that make it possible for humans to be the image of God, sinners, saved, baptized etc.

Systematic Theology as a Science With a Focus on Thought Experiments

The basic premise for systematic theology as a scientifically credible discipline is that it is able to meet the commonly accepted criteria for sound scientific work. Of course, there is no standard list for this, but it is possible to identify a number of criteria that are broadly accepted, e.g., testability, falsifiability, and intersubjectivity. Furthermore, we add that systematic theology should be able to argue for its distinctness in comparison with related disciplines such as religious studies and philosophy, but this distinctness must not compromise the scientific nature and credibility of the field (Mørch, 2023, Ch. 8). Scientific work is truth-seeking, but it is also a problem-solving activity. Scientific problems can be either empirical or conceptual. When a hypothesis is formulated it is claimed to be the solution to the problem, and the hypothesis must then be tested either empirically or conceptually. This is the essence of how Larry Laudan has framed the question (Laudan, 1981). If we accept this, systematic theology is a part of the conceptual problem-solving activity and thought experiments are easily seen as a tool within the scope of this field.

Laudan's proposal is stated from an antirealist perspective (successful theories are true about observables but not about unobservables) but it is also possible to think along these lines in realist terms (where unobservables in successful theories are argued to be true) and argue that we learn genuinely new things about the world when we solve conceptual problems. Scientific work often relies on instrumental solutions, but instrumentality does not cover everything that science aims to do, including in the context of thought experiments.

Kuhn famously asked if we learn new things about the world by developing thought experiments (Kuhn, 1977). If the answer is yes, how is it possible to get new information about the world from a thought experiment? If the answer is no, why are

thought experiments then an important part of science? Kuhn's own solution to the dilemma is that thought experiments can help us understand concepts in new ways and either point to or solve anomalies in previous theories about the world. In this way, thought experiments can teach us something about language and world together (Kuhn, 1977).

Our answer to Kuhn's question is yes: thought experiments teach us something new about the world, and coherentism explains how. The way that we learn something new about the world is by learning that one way of understanding the world is more coherent than another. This might be by including a new piece of empirical data in a theory (increasing comprehensiveness), but it can also be by discovering consistencies, inconsistencies, new connections or lack of connections. Here is one example of how thought experiments can teach us something new about the world in the context of theology: In his book, *Reality+*, David Chalmers discusses the thought that we might live in a simulation. Since a simulated universe is easier to make than a real universe, it suggests that there will be many more simulated universes than real universes, in which case we should reason that we are more likely to live in a simulated universe than a material universe. But that also makes it more plausible that the universe we live in is made by a creator (Chalmers, 2022, Ch. 7). Chalmers says while he has always been an atheist, this argument strikes him as a serious argument for a creator (Chalmers, 2022, p. 125). This is an example of a thought experiment teaching us something new about the world, namely that the existence of a creator is more probable than we thought before. This argument is further discussed and used in a forthcoming article (Mørch & Søvik, 2024b). In other words: Thought experiments teach us something new about the world by strengthening, weakening or comparing theories, thus making us reconsider which understanding of the world is most likely to be true.[14] In the context of theology, there is an inconclusive element to the discussion since all we can do is show that theories that include the notion of God are coherent. Coherence does not guarantee that the conclusion is true, or that the referent (e.g., God) actually exists, but this is a condition for all theoretical work, especially on the big questions of the world.

In the following, we will take this view and align it with the notion of thought experiments presented. Hereby, we show that thought experiments, that is a widely used tool for scientific work, work very well in systematic theology and strengthen the claim that systematic theology is in fact *testable*, *falsifiable*, and *intersubjective*, even when *uniquely* theological.

Concerning *testability*, we follow Pannenberg in thinking that the way to test theories in systematic theology, is to test how coherent they are compared to alternative theories. Above we have shown how thought experiments play a role in determining the coherence of theories. Systematic theology of this kind is thus testable,

[14] One of the reviewers understood our approach as a "relic from logical positivism" since we argue that science equals theories plus logically structured set of beliefs. When we discuss thought experiments, we don't say that that's all science is about, we only investigate how science can benefit from these kinds of experiments. And they are necessarily logically structured sets of beliefs that either strengthen, weaken or compare theories. As such, we do not overlook the historicist turn of philosophy of science since we are only discussing one aspect of scientific research and its relation to systematic theology. For the practical turn, see McGrath (2019) for an excellent discussion.

and thought experiments play a role in strengthening this side of scientific theological work.

Concerning *falsifiability*, we demonstrated above that thought experiments could be used to falsify a specific theory in systematic theology, by showing that it is inconsistent. However, we follow Thomas Kuhn against Karl Popper in thinking that how falsifiability actually works in scientific practice is that one theory shows itself clearly more coherent than another (making researchers leave a paradigm or a theory).[15] This means that theories in systematic theology can also be falsified by another theory showing itself clearly more coherent. The view that God created the world billions of years ago has falsified the view that God created the world 6000 years ago, and we could imagine naturalism in the future becoming so much more coherent than theism, making Christian theology as a whole falsified. Since thought experiments play a role in estimating the degree of coherence of a theory, thought experiments also play a role in making systematic theology falsifiable, thus strengthening the scientific status of systematic theology.

Concerning *intersubjectivity*, it is necessary that our scientific theories are testable, by being testable in the critical version of being falsifiable. But this is still not sufficient if people cannot agree on whether something actually confirms or falsifies systematic theology. Its testability must also be intersubjective. Thought experiments do not appeal to revelation or first-person experiences. Their content is easily intersubjectively understood, and their coherence with other propositions does not depend on individual perspectives. When thought experiments are used to weaken or strengthen the coherence of a theory in systematic theology, it strengthens the intersubjectivity of systematic theology.

Concerning the *unique* character of systematic theology, the point is that theology should not just be scientific when it is indistinguishable from history, philosophy, and literary studies. Systematic theology as theology should be a unique scientific discipline in order to justify theology as a discipline of its own at the university. Various disciplines are justified as independent disciplines by their unique data, and the unique datum of systematic theology is God.

Since thought experiments can be used to discuss the coherence of different concepts of God (as shown above), thought experiments support the scientific status of systematic theology as an independent scientific discipline, and they support the realist notion that we learn genuinely new things about God by assessing thought experiments.

Conclusion

In this article, we argued first that coherence theory is a good interpretation of scientific work. Researchers who seek to *develop* or *improve* a theory, need to demonstrate that they maintain consistency, and/or that they increase the degree of cohesiveness,

[15] We are aware that this is a very limited description of Kuhn's critique but for sake of space we do not elaborate here. See Mørch (2023, pp. 210–212) for an extensive discussion or Fuller (2003) for a fine-grained assessment.

and/or comprehensiveness. If they seek to *criticize* a theory they need to demonstrate *lack of* consistency, cohesiveness, or comprehensiveness of the theory. If they seek to *compare* two theories in order to demonstrate the superiority of one over the other, they need either to show (i) that A is *consistent* and B is not, or (ii) that A is relatively more *cohesive* than B, or (iii) that A is relatively more *comprehensive* than B. We then showed that this fits well with systematic theology as it is understood by Wolfhart Pannenberg. After this, we proceeded to show that thought experiments can serve all these functions, not only in science in general, but in systematic theology as well. Since thought experiments have all these functions, they support the scientific status of theology. We ended by showing how systematic theology can respond to objections against its scientific status, and how thought experiments help justifying systematic theology as a scientific discipline.

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