



How to justify beliefs about the future - some epistemological remarks

Matthias Sonk¹ 

Received: 19 October 2015 / Accepted: 24 November 2015 / Published online: 8 December 2015
© The Author(s) 2015. This article is published with open access at Springerlink.com

Abstract This elaboration will explore the epistemology of futures studies. To address this, first the logical ground of epistemology has to be examined, i.e., the laws of thought and in connection to that, the mere possibility of justified true beliefs about the future. After a short introduction to the concept of justified true beliefs, the distinction between internalism and externalism will be observed. Then, two approaches of justification will be explained and compared. Thereafter, the structure of knowledge has to be looked at and the distinction between foundationalism and coherentism will be illustrated. To conclude, the logical ground, the laws of thought, grants the possibility of justified true beliefs about the future, because the third law states that unambiguous assumptions concerning the future can only be true or false but not undefined. Regarding the distinction of internalism and externalism, it is epistemically reasonable to favor internalism over externalism, because not only is it impossible to refer to the future externally but the internal approach concerning the accessibility of justification is a preferable way to justify beliefs about the future. Relating to the structure of knowledge, foundationalism is a better choice than coherentism, because it is a robust answer to the regress problem and moreover, a stable initial position is needed to justify beliefs about the future.

Keywords Epistemology · Futures studies · Internalism · Externalism · Foundationalism · Coherentism

✉ Matthias Sonk
matthiassonk@zedat.fu-berlin.de

¹ Freie Universität Berlin, Kaiserswerther Str. 16-18,
14195 Berlin, Germany

Introduction

Futures studies, as a scientific discipline, are not very long standing but have a promising future. This is because not only corporations but also governments are interested in orientational knowledge concerning the future. However, there is much to improve regarding a plausible and consistent theoretical foundation. This paper will look at the epistemology of futures studies, which is a small step on the way towards a theoretical ground for futures studies. To address this, the logical ground of epistemology has to be examined first, i.e., the laws of thought, and in this context, the mere possibility of justified true beliefs about the future. After a short introduction to the concept of justified true beliefs, the distinction between internalism and externalism will be discussed. Then, two approaches of justification will be explained and compared. Thereafter, the structure of knowledge will be looked at, and the distinction between foundationalism and coherentism will be illustrated. Finally, the question if there is a possibility of justified true beliefs about the future and if internal foundationalism is a preferable theory concerning the epistemology of futures studies will be answered.

Introducing: justified true beliefs about the future

When we think of the concept of knowledge, it is hard to stay focused on that concept as it seems to blur in the face of a thorough investigation. In the history of philosophy, since Plato, justified true beliefs are the relational equivalent to knowledge [1, 2]. Although there exist sound arguments against this understanding of knowledge,¹ it remains

¹ To address the problem of the Gettier cases would go beyond the scope of this paper.

dominant but the main focus concerning knowledge is the justification of beliefs. However, can there be justified true beliefs about the future? Ryne Byerly believes that:

“We make decisions on the basis of beliefs about the future daily. I believe that tomorrow so-and-so will be in the office, that my Internet will be working, et cetera. Often, such beliefs are justified. A view about justification which said that these beliefs couldn't be justified would be a view which had given into the skeptic.” [3: 235]

The basics of thoughts concerning the future

If you are going to look at the epistemology of futures studies, you will have to begin with the basics of epistemology, the logical foundations. One of the basics in the theory of mind and knowledge are the three laws of thought. The first law is the law of identity, the second the law of non-contradiction and the third the law of excluded middle [4, 5]. Regarding the epistemology of futures studies, these three laws of thought could affect the knowledge base of the discipline but should first be described.

The law of identity states that everything that is has to be identical with itself [4]. So if there is a red apple, the red apple is a red apple and in this context nothing else ($\forall x (x = x)$). This law states basic logical truths about entities of all kind, and knowledge referring to this axiomatic law can be considered as elemental knowledge. The law of identity surely produces tautologies; nevertheless is this kind of knowledge true knowledge about entities of all kind. Knowledge that is grounded on the first law of thought is not only true in the present but also true in the past and the future.

The law of non-contradiction states that everything that is cannot be itself and the opposite of itself at the same time [4]. So if there is a green apple, the green apple is a green apple and cannot be a red apple at the same time ($\forall x \neg (x \wedge \neg x)$). This law also states basic logical truths about entities of all kind and so knowledge referring to this axiomatic law can be considered as elemental knowledge. Of course the law of non-contradiction produces tautologies, too. Nevertheless, this kind of knowledge is also true knowledge about entities of all kind. Knowledge that grounds on the second law of thought is not only true in the present but also true in the past and the future.

The law of excluded middle states that everything that is, either is or is not, but nothing in between ($\forall x (x \vee \neg x)$) [4]. So if there is an apple, it is either true or false that the apple is red. If the apple is green, the sentence “the apple is red” is false, if the apple is indeed red, then the sentence “the apple is red” is true but there is no third option making the sentence “the apple is

red” is something else than true or false. Or to give another example, if there seems to be an apple on the table and this apple is either there or is not there, but the apple has no third undefined ontological status besides being or not being on the table. In conjunction with the other two laws, this law states basic logical truths about entities of all kind and, thus, knowledge referring to this law can be considered as elemental knowledge. Even the law of excluded middle produces tautologies. Nevertheless, this kind of knowledge is also true knowledge about entities of all kind. Knowledge that grounds on the third law of thought is not only true in the present but also true in the past and the future.

The law of excluded middle is much more relevant to the epistemology of futures studies than the first and the second law of thought. Concerning the past, our knowledge is either true or false and everyone would agree on that. Regarding the future one could say that assumptions about the future are neither true nor false because the future does not exist yet and no one can decide whether an assumption is true or false, so it is undefined. A main proponent of this view, amongst others, is Aristotle [4, 6, 7]. Ariel Weissmann's view, however, is that it is an incident of incorrect speech. If a sentence concerning the future of something is syntactically correct, then the sentence is true or false. It is important that there are no modal operators like “maybe”, “hopefully” or “with God's help”, because these would make the sentences unclear and so, they could not be false or true. Contrary, distinct modal operators like “possible” or “probable” have to be used in such a manner that a sentence can be true or false [4]. Thus, concerning the third law of thought, there is no third ontological option for clearly stated assumptions about the future.

Furthermore, Ariel Weissmann argues that the laws of thought apply only to the realm of human reasoning, to the “universe of discourse” as he cites George Boole [4]. There might be a natural entity, as for example described in the theory of quantum physics, that could adopt a third status between to be or not to be, but it does not belong to the realm of human reasoning. Moreover, the future is not an external natural entity either, thus, the future and all the assumptions about it belong to the realm of human reasoning, where the laws of thought apply. Hence, assumptions regarding the future have to be true or false and cannot be undefined, *tertium non datur* [4]. The logical foundation of epistemology implies the requirements that are needed for an epistemological base for the discipline of futures studies because assumptions regarding the future have to be true or false. Thus, the mere possibility of justified true beliefs about the future exists.

After it was shown that the foundation of epistemology grants the mere possibility of justified true beliefs concerning the future, another discourse needs to be looked at, that is, the distinction between internalism and externalism.

Externalism or internalism

When asking the question whether knowledge is justified by an external source or by an internal source, the answers differ significantly. If a person is an externalist, she believes that justification is external and everyone can justify the knowledge through an external source. If a person is an internalist, she believes that justification is internal and everybody can justify the knowledge through an internal source [2, 8–10]. This is a question about j-factors, which are the source of justified true beliefs. J-factors are the reason for justification and this justification of beliefs could be internal or external.

J-factors can be doxastic or propositional. Doxastic j-factors are among others: beliefs, opinions, suspension of a judgment, credence or convictions. Propositional j-factors are altogether the content of a sentence like the subject, the proposition and the time of the justification of a belief [2, 9–11]. Alvin I. Goldman tries to explain which conditions a j-factor has to possess to be a proper j-factor: “X is a J-factor of a given belief’s justificational status if and only if X helps explain why the belief’s justificational status is what it is” [9: 311].

For internalists, these j-factors are either accessible for reflection or are mental states. Because the reflection of j-factors is internal and mental states have to be internal, too, all j-factors of justified true beliefs could be explained with internalism.² Externalists would deny that because they say that there are j-factors that are not entirely internal. External j-factors could be based on visual perception or other sensations which are not mental states or accessible on reflection. These perceptions of the external world are j-factors, which are not internal because a person does not infer from her visual perception but *has* her visual perception. On the one hand, we trust our perception in our daily life to a large extent, and on the other hand a position that denies our perception to be mostly true be a skeptical position, which is not academically prolific [2, 10].³

As Alvin I. Goldman mentions [9], both externalism and internalism are right about something concerning the justification of beliefs, but concerning the epistemic foundation of futures studies there is an important difference between them. If we look at justified true beliefs about the future, we must admit that there is no external entity, which a person could perceptually refer to. Maybe externalism could be right about present justified true beliefs, but externalism could not offer a good explanation for future justified true beliefs.⁴ If this is

² To follow Matthias Steup I will call them accessibility internalism and mentalist internalism [2].

³ There is a long and interesting discussion between proponents of internalism and proponents of externalism, but to describe more than the shadowy lines of this discourse would go beyond the scope of this paper.

⁴ The topic concerning justified true beliefs of the past is a likewise interesting problem, but to address this, would go beyond the scope of this paper.

true, then with regard to an epistemic ground for futures studies, there is only internalism left when it comes to a potential theory of epistemology. Thus, the two possible explanations for internal justification of beliefs have to be described: the explanation by accessibility and the explanation by mental states.

Firstly, there is a way to explain the justification of beliefs through accessibility of j-factors and the justification itself: accessibility internalism [2]. As George Pappas suggests:

“It requires only that one can become aware of the knowledge basis, either by easy and quick reflection in some cases, or by more difficult and lengthy reflection in others. What matters, however, is not the temporal length of the reflection, but rather that this is an awareness one can achieve merely by reflection. And there is something right about this, because we all engage in this sort of activity all the time, often with good success.” [10]

Secondly, there is a way to describe the justification of beliefs through mental states because j-factors are mental states. This approach is the mentalist internalism [2]. In the words of Declan Smithies “[m]entalism in epistemology is the thesis that one’s mental states determine one’s evidence and hence which propositions one has justification to believe” [12]. But this position towards justification is not unchallenged [13].

To illustrate this, both approaches will be explained with an example. If a person x is convinced that person y and z will be at the training next Monday, then this belief is justified maybe because person y celebrates her birthday after the training and person x and z have to bring her present to the pitch or maybe person x is justified to believe that person y and z will turn up, since they show up every second Monday. Regarding the first approach, person x can reflect on the justification of her belief and she has access to it. She could remember that she bought the present together with person z and that person y told them last time, that she will bring drinks because of her birthday. So x and z will bring the present to the training since person y will be there, too. Thus, person x has a justified believe about the future that person y and z will be at the training next Monday. Concerning the second approach, there is person x and her identical twin x*, who are both mentally identical. Person x has been training in that team for the last 5 years, but her twin x* only for the last week. Person x told her twin x* that person y and z will be at the training next Monday, since they are coming every second Monday. Both x and x* are in some way justified to believe that both person y and z will be at the training. However, person x has a specific mental state regarding her justification because she has experienced over the last 5 years that person y and z show up every second Monday but person x* lacks that mental state concerning her justification.

Therefore person x has, on the ground of her mental state, a justified believe about the future that person y and z will be at the training next Monday, which person x^* has not.

Now the question concerning the epistemic base of futures studies is, which kind of explanation of internal justification is advantageous for the observation of justified true beliefs about the future. There are two claims, which are crucial for these explanations of justification. Firstly, the mind of every person is cognitively luminous, which means, that a person knows her mental states, respectively her j -factors for a justification [2, 13] and secondly, axiomatic principles guide the reflection of a person about her justification [2]. There are legitimate doubts towards the luminosity or transparency of mental states [13], which are doubted themselves [12]. But when it comes to the possibility for a person to reflect her justification, there is a necessity in certain principles that prevents this claim from doubts. Of course, is going to continue but one can state that the accessibility to reflect on the j -factors for certain justified beliefs regarding the future is a promising way.

After this brief overview of the distinction between internalism and externalism and the strategies of justification, two epistemological theories concerning the structure of knowledge should be discussed.

Foundationalism and coherentism

There are two theories of epistemology concerning the structure of knowledge that could be interesting for the epistemic ground of futures studies: foundationalism and coherentism. Of course a distinction is not unchallenged [14, 15]. However, for a better understanding, foundationalism and coherentism will be looked at separately.⁵ Knowledge, from the viewpoint of foundationalism, could be seen as a building. A building has a foundation and a superstructure that relates to basic beliefs and nonbasic beliefs [2, 16]. In contrast, coherentism could be pictured as a web of knowledge, where every knot supports the other knots [2, 17]. Seven Ove Hansson, citing Ernest Sosa, provides a slightly different picture:

“According to a classic formulation, coherentism means that “a body of knowledge is a free-floating raft every plank of which helps directly or indirectly to keep all the others in place, and no plank of which would retain its status with no help from the others.” In contrast, foundationalism means that “every piece of knowledge stands at the apex of a pyramid that rests on stable and secure foundations whose stability and security does not derive from the upper stories or sections.” [15: 290]

⁵ There is a long going discussion about foundationalism and coherentism but to address this in every detail would go beyond the scope of this paper.

Coherentism is an answer to the problem of solving the regress problem which foundationalism offers, but this will be discussed later [18]. Coherentism does not begin with basic beliefs on which all other beliefs stand, but rather looks at all beliefs because they are equally in need of justification. So a belief could be justified since it is coherent with other beliefs surrounding it. All the beliefs in one system together provide the justification for each of the other beliefs because all combined build a coherent system [2, 15, 17–19].

An example could be on the hockey field where person x , y and z are playing a hockey game with their team. Suddenly somebody claims that the sister of person x , person x^* , committed a foul. The person is not that sure about the foul and asks person x , y and z what they had witnessed regarding the possible foul of person x^* . Person y remembers that the ball took an unforeseeable turn in another direction, person z believes that she heard the muffled noise of a ball hitting a shoe, and person x only remembers that the hockey stick of person x^* was not on the ground, so she was not able to catch the ball anyway. Altogether these beliefs are forming a coherent system of a justified belief concerning the foul of person x^* .

Michael Huemer concludes, that “... it would be unlikely that unreliable witnesses would agree, says the coherentist; therefore, the agreement of the witnesses is reason to think their reports true” [19, p. 338]. But there are a lot of problems within coherentism, e.g., considerations of probability towards the unreliable witnesses and their coherent answers, which are not a big problem for weak coherentism but for a strong coherentism [18, 19]. Nevertheless, concerning an epistemological theory of futures studies, it is not easy to work with a coherentist approach. It is not plausible that one single belief or a bunch of beliefs could justify one’s beliefs about the future if they were all equally in need of justification. Therefore, no belief is stable enough to justify any belief or a system of beliefs about the future.⁶

Foundationalism on the other hand classifies beliefs in two categories, in basic beliefs and non basic beliefs but even with that distinction, coherence is still important: “Foundationalists and coherentists, in short, do not differ over whether coherence can be epistemically valuable. Where they differ is over whether coherence *alone* can provide justification for belief, or whether we must posit a privileged class of beliefs having some individual credibility [19].”

Prior to exploring the concept of foundationalism, the distinction between basic and non-basic beliefs has to be looked

⁶ Furthermore, there are two independent theories of epistemology with a tendency to coherentism. Explanationism as a coherentist theory [2] is not capable of explaining justified beliefs about the future either, as Ryan Byerly explains, because there is not a best explanation for someone’s evidence concerning future justified beliefs [3]. But neither is reliabilism as a coherentist theory [2] capable of explaining why reliabilist knowledge should make future true beliefs more likely, because of former justified beliefs [20, 21].

at. A basic belief is a belief that does not need any further justification through other beliefs. There are no beliefs needed to justify a basic belief because this belief is analytically true, like a tautology is true by virtue or could not be false since if it were false, it would strongly violate basic human intuition [2, 17, 22–24]. And that is an unsatisfying solution to the regress problem, as coherentists would mention. The regress problem arises if there are no basic beliefs at all. This is because every belief has to be justified by another belief and this belief has to be justified by another belief, too. If there are no basic beliefs, which do not need any further justification, this regress would go on forever, respectively ad infinitum or in circular reasoning [2, 7, 23]. Both alternatives are insufficient and thus, the regress argument for foundationalism states that there have to be basic and non-basic beliefs because neither an infinite regress nor circular reasoning could be the ground of a justified belief. From this follows that there are basic beliefs, because otherwise there would be no possibility for justified beliefs at all. There is a theory according to which an infinite regress of different beliefs justifies knowledge: infinitism [25] but this position is not unchallenged [23]. For the examination of the epistemic foundations of futures studies John Turri's point will be followed that argument for infinitism as stated by Peter Klein does not enforce a preference over foundationalism [23].⁷

An exemplification of foundationalism could be a consideration of person *x* towards her sister *x**. Person *x** is the twin sister of *x* and so *x* believes, since she is a normal human being with fears, hopes and wishes, that her sister for her part has fears, hopes and wishes, too. According to that, person *x* could be pretty sure about the fact that person *x** will have fears, hopes and wishes for the future, which is a properly justified belief about the future. On that foundation, person *x* could act to improve her sister's wellbeing in the future, e.g., train her in playing hockey. The important thing is that because she has a basic belief about her sister having fears, hopes and wishes, she could form a non-basic but justified belief about the future.

It seems that foundationalism could be a useful epistemic foundation for futures studies because the distinction between basic and non-basic beliefs embodies an important aspect. Basic beliefs are necessary to found justified beliefs about the future.

Conclusion

Previously, the laws of thought were investigated concerning an epistemological ground for futures studies. Then, the distinction between internalism and externalism was looked at and afterwards, as internalism seemed more promising, two

possible internal approaches to justify a belief were examined. Thereafter, two different explanations for the structure of knowledge were looked at: coherentism and foundationalism.

Regarding the epistemology of futures studies, there are three important points. Firstly, the logical ground, the laws of thought, grants the possibility of justified true beliefs about the future as the third law states that unambiguous assumptions concerning the future can only be true or false but not undefined. Secondly, regarding the distinction of internalism and externalism, it is epistemically reasonable to favour internalism over externalism because not only is it impossible to refer to the future externally but the internal approach concerning the accessibility of justification is a preferable way to justify beliefs about the future. Thirdly, considering the structure of knowledge foundationalism is a better choice than coherentism as it is a robust answer to the regress problem. Moreover, a stable initial position is needed to justify beliefs about the future.

This shows that there is a plausible and consistent way for an epistemology of futures studies that could not only be helpful for considerations regarding the future but that is also important for the scientific discipline of futures studies to develop a likewise consistent and plausible theoretical foundation. Certainly, this paper can only be one part of it but there are many more aspects of futures studies worthy to be investigated, e.g., something the philosophy of mind is looking at: our ability to form counterfactual conditional. This ability to imagine multiple alternative developments of situations could be a theoretical ground of the scenario method, which could be further examined in the future.

Acknowledgments I want to thank Timo Szczepanska for the helpful discussions regarding epistemology and the future.

Open Access This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

References

1. Nagel J, Juan VS, Mar RA (2013) Lay denial of knowledge for justified true beliefs. *Cognition* 129(3):652–661. doi:10.1016/j.cognition.2013.02.008
2. Steup M (2014) Epistemology. <http://plato.stanford.edu/archives/spr2014/entries/epistemology/>. Accessed 28 Sep 2015
3. Byerly TR (2013) Explanationism and justified beliefs about the future. *Erkenntnis* 78(1):229–243
4. Weissmann A (1956) Der Satz vom ausgeschlossenen Dritten in seiner Beziehung zu den Grundlagen der Logik. *Kant-Studien* 47(1–4):367–377
5. Williamson T (2007) The philosophy of philosophy. The Blackwell/Brown lectures in philosophy, vol 2. Blackwell Pub, Malden

⁷ To look at the possibility of infinitism as epistemic guideline for futures studies could be very interesting too, but to address this would go beyond the scope of this paper.

6. Wieland W (1979) Aristoteles und die Seeschlacht Zur Struktur prognostischer Aussagen. *Ber Wiss* 2(1–2):25–33. doi:10.1002/bewi.19790020105
7. Stoecker R (2001) Wer weiss, was die Zukunft bringen wird?: prognosen als Erkenntnistheoretische Herausforderung. *Concept Z Philos* 34(84):1–22
8. Feldman R, Conee E (2001) Internalism defended. *Am Philos Q* 38(1):1–18
9. Goldman AI (2009) Internalism, externalism, and the architecture of justification. *J Philos* 106(6):309–338
10. Pappas G (2014) Internalist vs. externalist conceptions of epistemic justification. <http://plato.stanford.edu/archives/fall2014/entries/justep-intext/>. Accessed 28 Sep 2015
11. Goldman AI (1999) Internalism exposed. *J Philos* 96(6):271–293. doi:10.2307/2564679
12. Smithies D (2012) Mentalism and epistemic transparency. *Australas J Philos* 90(4):723–741. doi:10.1080/00048402.2011.627925
13. Williamson T (2002) *Knowledge and its limits*. Oxford University Press
14. Bouchard Y (2007) The foundationalism–coherentism opposition revisited: the case for complementarism. *Found Sci* 12(4):325–336. doi:10.1007/s10699-007-9110-y
15. Hansson SO (2007) The false dichotomy between coherentism and foundationalism. *J Philos* 104(6):290–300
16. Fumerton R (2010) Foundationalist theories of epistemic justification. <http://plato.stanford.edu/archives/sum2010/entries/justep-foundational/>. Accessed 28 Sep 2015
17. Olsson E (2014) Coherentist Theories of Epistemic Justification. <http://plato.stanford.edu/archives/spr2014/entries/justep-coherence/>. Accessed 28 Sep 2015
18. Huemer M, Smylie J (2011) Does probability theory refute coherentism? *J Philos* 108(1):35–54. doi:10.5840/jphil20110812
19. Huemer M (2007) Weak Bayesian coherentism. *Synthese* 157(3):337–346. doi:10.1007/s11229-006-9059-3
20. Jäger C (2011) Process reliabilism and the value problem. *Theoria* 77(3):201–213. doi:10.1111/j.1755-2567.2011.01102.x
21. Olsson E, Jönsson M (2011) Kinds of learning and the likelihood of future true beliefs: reply to Jäger on reliabilism and the value problem. *Theoria* 77(3):214–222
22. Jubb R (2009) Logical and epistemic foundationalism about grounding: the triviality of facts and principles. *Res Publica* 15(4):337–353. doi:10.1007/s11158-009-9097-z
23. Turri J (2009) On the regress argument for infinitism. *Synthese* 166(1):157–163. doi:10.1007/s11229-007-9270-x
24. Turri J (2010) Foundationalism for Modest Infinitists. *Can J Philos* 40(2):275–284
25. Klein P (2007) Human knowledge and the infinite progress of reasoning. *Philos Stud* 134(1):1–17. doi:10.1007/s11098-006-9012-9