A Reliabilistic Justification of the Value of Knowledge about Theories

Christian J. Feldbacher-Escamilla

Summer 2011

Project Information

Publication(s):

- Anglberger, Albert J.J. and Feldbacher-Escamilla, Christian J. (2011). "Eine reliabilistische Rechtfertigung des Wertes von Wissen über Theorien". In: *Epistemology: Contexts, Values, Disagreement. Papers of the 34th International Ludwig Wittgenstein-Symposium in Kirchberg, 2011*. Ed. by Jäger, Christoph and Löffler, Winfried. Kirchberg am Wechsel: The Austrian Ludwig Wittgenstein Society, pp. 11–13.

Talk(s):

- Feldbacher-Escamilla, Christian J. (2011-08-07/2011-08-13). *A Reliabilistic Justification of the Value of Knowledge about Theories*. Conference. Presentation (contributed). 34th International Wittgenstein Symposium. Kirchberg am Wechsel: Internationale Ludwig Wittgenstein Gesellschaft (ILWG).

Motivation

Why to talk about values in epistomology?

Because one might want to justify a specific goal of science etc., e.g. knowledge (cf. Pritchard 2007a, p.102).

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Meno Problem

Meno problem

Strictly speaking, there are at least three types of *Meno problems* discussed in epistemology (cf. Pritchard 2007b):

- Value problem: Why is knowledge more valuable than mere true belief?
  $val(TB) < val(JTB)$ $(T_{rue} B_{elief},\ J_{ustified} TB)$
- Secondary value problem: Why is knowledge more valuable than all other types of true belief?
  $val(TB) < val(JTB)$ & $val(JTBR) < val(JTB)$ &
  $val(JTBG) < val(JTB)$ & ... $(JTBR_{ussellcase},\ JTBG_{ettiercase})$

Meno problem

- Tertiary value problem: Why is there a qualitative difference within the continuum of true beliefs directed to knowledge?
  $val(TB) < \cdots < val(JTBG) < \cdots < val(JTB)$, and:
  val maps the elements of the domain of JTB an a complete different way as the elements of the domains of TB, $JTBG$, etc.

There is a connection: An argumentation against the first problem suffices for argumenting against the last two problems. A solution of the secondary and the tertiary value problem suffices as solution for the value problem.

Revisionary Response

Claim:
Knowledge is of equal value as mere true belief: $val(TB) = val(JTB)$ (cf. Kaplan 1985).

Justification:

1. What counts for valuing knowledge and mere true belief is just its usefulness (instrumental value of knowledge and mere true belief).
2. Merely believing a true proposition (TB) or being justified in believing in a non-Russellian and a non-Gettierian style a true proposition (JTB) is of the same use for an agent.
3. Hence: $val(TB) = val(JTB)$.

Problem:
Explanations of the perhaps putative fact that people think that $val(TB) < val(JTB)$ are dissatisfying.

Reliabilistic Response

Claim:
Knowledge is more valuable than mere true belief: $val(TB) < val(JTB)$.

Justification:

1. Knowledge (JTB) $\Rightarrow$ belief via a common reliable procedure.
2. Mere true belief (TB) $\Rightarrow$ not belief via a common reliable procedure, but via other belief forming procedures.
3. All common reliable procedures are more valuable than any other belief forming procedures.
4. Hence: $val(TB) < val(JTB)$.

Problem:
There is a gap in the argumentation: A problem putted by Linda Zagzebski.

Zagzebskis Problem

> *"The good of the product makes the reliability of the source that produces it good, but the reliability of the source does not then give the product an additional boost of value. The liquid in this cup is not improved by the fact that it comes from a reliable espresso maker. If the espresso tastes good, it makes no difference if it comes from an unreliable machine." (Zagzebski 2003, p.13)*

The reliabilistic account underlies the so-called "machine-product model" assumption of knowledge: JTB is formed within (that is: it is a product of) a common reliable procedure, but the common reliable procedure is not part of JTB.

So the fault of the reliabilistic account is as follows (invalid argument):

1. $JTB \Rightarrow CRP$ $(C_{ommon} R_{eliable} P_{rocedure})$
2. $TB \Rightarrow NCRP$ $(N_{on} CRP)$
3. $val(NCRP) < val(CRP)$
4. Hence: $val(TB) < val(JTB)$

Zagzebskis Solution

Claim:
Knowledge is more valuable than mere true belief: $val(TB) < val(JTB)$.

Justification:
Zagzebski suggests to use a non machine-product model of knowledge: Knowledge (JTB) is not the product of a common reliable procedure (CRP), but CRP is part of JTB. So a draft of the argument is as follows:

1. $JTB = (TB \setminus NCRP) \cup CRP$
2. $val(NCRP) < val(CRP)$
3. Some assumptions about value forming (composition principles)
4. Hence: $val(TB) < val(JTB)$

Problem:
One has to interpret 'knowledge' in a new way: The belief forming procedure is part of the knowledge.

A Reliabilistic Solution

A Reliabilistic Solution

We think that there is another fruitful account to the problem:

> *"[To] solve the value problem it is not enough to find another value in the course of analysing knowledge; one needs to find another value in the right place." (cf. Zagzebski 2003, p.13)*

So, let's try to find another value in the right place!

A Reliabilistic Solution

Relative analyticity of theories:

Definition

- A theory T_2 is analytic with respect to a theory T_1 iff all sentences of T_2 are logically valid or T_2 is a definitional extension of T_1.
- Otherwise it is synthetic w. r. t. T_1.

Absolute analyticity of theories:

Definition

- A theory T is analytic iff T is analytic with respect to the minimal theoretical basis $Cn(\emptyset)$. That is: T has only logical and (non-empirical) definitional consequences.
- Otherwise it is synthetic.

A Reliabilistic Solution

A priori and a posteriori theories:

Definition

- A theory T is *a posteriori* iff there is a common reliable *test* and there are two empirical bases B_1 and B_2 such that $test(T, B_1) \neq test(T, B_2)$.
- A theory T is *a priori* iff T is not *a posteriori* – that is: If for all common reliable *tests* and all empirical bases B_1 and B_2 it holds that $test(T, B_1) = test(T, B_2)$.

Empirical bases:

Definition

B is an empirical basis iff every $x \in B$ is an observational sentence.

A Reliabilistic Solution

Scientific tests:

Definition

test is a common reliable test iff *test* is a intersubjective and knowledge funding method.

A method is intersubjective if all competent speakers of the language the method is formulated in understand the instructions of the method.

Much more trickier is the condition of knowledge funding:

Definition (Meaning Postulate)

If *test* is knowledge funding, then the starting point of *test* are two theories T_1 and T_2, a probability function p and an empirical basis B such that $T_1 \subseteq T_2$ and $test(T_1, B) = 0$ if T_2 is inconsistent or $p(T_2, B) < p(T_2)$; otherwise $test(T_1, B) = 1$.

There hold some special conditions for choosing T_2 and p.

A Reliabilistic Solution

Some classical examples for scientific tests:

- Verificationistic and falsificationistic methods
- Methods of confirmation theory
- Explicational methods – work in progress since ever

And some classical examples for classifying scientific theories:

- Elementary logics: *a priori* analytic
- Classical mechanics: *a posteriori* synthetic
- Euclidean geometry: *a priori* synthetic (choosing GTR and $p_{Einstein}$ for testing usability perhaps *a posteriori* synthetic)
- Actually the set of *a posteriori* analytic theories is empty, but regarding usability tests one may also construct such theories (with theoretically fruitfull definitions).

A Reliabilistic Solution

Classically, the following relations hold for scientific theories (theories we ideally know and wich are not just merely believed and true):

Nr.	Testing mode	Theoretical mode	Consequences	Value
1.	a priori	analytic	observational	☒
2.	a priori	analytic	theoretical	☑
3.	a priori	synthetic	observational	☒
4.	a priori	synthetic	theoretical	☑/☒
5.	a posteriori	analytic	observational	☒
6.	a posteriori	analytic	theoretical	☒
7.	a posteriori	synthetic	observational	☑
8.	a posteriori	synthetic	theoretical	☒/☑

A Reliabilistic Solution

So, if we take the classical evaluation of theories for interpreting *val* as follows:

$$\mathit{val}(1.) = -1$$
$$\vdots$$
$$\mathit{val}(3.) = -1$$
$$\vdots$$
$$\mathit{val}(8.) = -1 \text{ or } \mathit{val}(8.) = 1$$

And if we read 'justifyable' as 'testable in a scientific way' (that is: with a common reliable test); then one can see that there are no scientific theories valued -1:

1., 2., 3., 5., 6. and 7. are fulfilled by definition. Wheter 1 or -1 holds in 4. and 8. for scientific theories depends on narrow or wide criteria for scientific tests regarding, e.g., usability. Ad 4.: It is well known that the existence of synthetic *a priori* theories was much discussed in the past.

A Reliabilistic Solution

If we take the same evaluation for *val*, then one can see that, although

- there are no analytic empirical theories (1. and 5.) and
- all analytic theories are theoretical theories (2. and 6.) and
- all synthetic theories are either empirical or theoretical (4. and 8.),

there are also some non-common reliable testable theories which are synthetic and empirical (3.) and therefore valued -1.

So, if we take a narrow concept of *test* not regarding usability of theories, then this means that there are data immune theories (valued -1) that are true and merely believed.

If we consider a wider concept of *test* also taking into account usability of theories, then this means that there are data immune and acutally useless theories (valued -1) that are true and merely believed.

Hence, there are some non-common reliable testable theories valued -1, whereas no common reliable theory is valued -1.

Summary

Summary

- We have put the Meno problem to the level of theories (not only propositions).
- We have used a classical method of Philosophy of Science for theory evaluation.
- We have seen that all common reliable testable theories (JTB) satisfy the given criteria.
- We have seen that some non-common reliable testable theories (TB) do not satisfy the given criteria.
- So we concluded that at least with respect to very relevant cases it holds that $val(TB) < val(JTB)$.

Q&A I

Supplement to the talk:

- Q1 The evaluation in the given list (parameters: *a priori*, *a posteriori*, analytic, synthetic, observational, theoretical) seems to be *ad hoc* – how to argue for it?
- A1 The evaluation is a standard in PoS. Argumentation is to be found in traditional literature (keywords: 'material *a priori*' etc.). For our argument we need only the assumption that this evaluation can be justified without presupposing $val(TB) < val(JTB)$.
- Q2 The Meno problem is about the value of knowledge of propositions or the value of belief forming processes. How to address this problem within your approach – this seems to be not possible?

Q&A II

A2 Our main aim was to show a difference between knowledge of theories and mere true belief about theories. From a technical point of view it seems that one can easily talk about knowledge of propositions and mere true belief of propositions by talking about single proposition theories (single sets of propositions). Unfortunately we cannot offer any representation theorems regarding this matter.

Q3 What kind of values is *val* representing? Are they instrumental? Do you presuppose a monistic theory of values?

A3 Cf. the slide *Outline*: We are talking at least (but not necessarily at most) about one epistemic value. Just read *val* as a measurement of how ideal some epistemic behaviour is. That an ideal cognitive agent should know a theory (JTB) and not just truely believe it (TB) is represented, e.g., by evaluating TB less than JTB.

Q4 Your characterization of ‘scientific test’ (or ‘common reliable method’) seems to be circular with respect to the value problem. How to dissolve the circle?

Q&A III

A4 That all scientific tests (or common reliable methods) are 'knowledge funding' and hence more valuable than any other test (premise 3 at slide *Relibialistic Response*) seems to be justifyable without assuming $val(TB) < val(JTB)$. One has, e.g., only to assume that our degrees of belief correlate with ideality of believes (S is true and $p_{agent_1}(S) < p_{agent_2}(S)$ implies that the believe of $agent_2$ regarding T is more ideal than that of $agent_1$ regarding S) to show that scientific tests are more valuable than any other test.

Q5 Your postulate about scientific tests seems to be very complicated. Is there a short reading of it?

A5 In case of testing empirical theories just take $T_2 = T_1$. In case of testing non-empirical theories regarding their usefulness just read the postulate as 'the non-empirical theory is positively tested if it is implied or presupposed by at least one very successfull empirical theory'.

Q&A IV

Q6 The Meno problem is usually considered with respect to a fixed proposition – in your case a fixed theory. Actually one has to show $val(TB(S)) < val(JTB(S))$ and not, e.g., $val(TB(S_1)) < val(JTB(S_2))$. How to solve the Meno problem within your account?

A6 You're right. Our argument does not show something like this: $\forall x(val(TB(x)) < val(JTB(x)))$. It only shows that if one argues for TB as the ultimate epistemic goal and not JTB (this is indirectly meant by writing '$val(TB) = val(JTB)$'), then one argues also for gathering theories that are according to the standards of PoS negatively evaluated, namely data immune or data immune and useless theories.

Thanks to the audience for the fruitful discussion!

References I

Anglberger, Albert J.J. and Feldbacher-Escamilla, Christian J. (2011). "Eine reliabilistische Rechtfertigung des Wertes von Wissen über Theorien". In: *Epistemology: Contexts, Values, Disagreement. Papers of the 34th International Ludwig Wittgenstein-Symposium in Kirchberg, 2011*. Ed. by Jäger, Christoph and Löffler, Winfried. Kirchberg am Wechsel: The Austrian Ludwig Wittgenstein Society, pp. 11–13.

Kaplan, Mark (1985). "It's Not What You Know that Counts". English. In: *The Journal of Philosophy* 82.7, pp. 350–363. URL: http://www.jstor.org/stable/2026524.

Popper, Karl R. (1995). "Das Abgrenzungsproblem (1974)". In: *Lesebuch: ausgewählte Texte zu Erkenntnistheorie, Philosophie der Naturwissenschaften, Metaphysik, Sozialphilosophie*. Ed. by Miller, David. Tübingen: Mohr Siebeck, pp. 103–117.

Pritchard, Duncan (2007a-04). "Recent Work on Epistemic Value". In: *American Philosophical Quarterly* 44.2, pp. 85–110.

— (2007b). "The Value of Knowledge". In: *The Stanford Encyclopedia of Philosophy (Summer 2009 Edition)*. Ed. by Zalta, Edward N.

Zagzebski, Linda (2003-01). "The Search for the Source of Epistemic Good". In: *Metaphilosophy* 34.1/2, pp. 12–28.