

Chapter 27

Naturalizing Meaning Through Epistemology: Some Critical Notes

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27.1 Introduction

Wittgenstein's slogan "meaning is use" may be seen as a way to re-interpret Frege's context principle. According to Frege, the meaning of a word must be given not in isolation but only in the context of an utterance.¹ In a similar vein, Wittgenstein claims that a word has a meaning only in its context of use: in this anti-psychologistic perspective (today we would call it "anti-naturalistic"), meaning is interpreted as a non-mental object; it is a matter of use, and therefore something we cannot investigate by scientific means. As is well known, Wittgenstein's slogan has been variously interpreted. In the *Philosophische Grammatik* (I, 40) Wittgenstein claims: "It is what is regarded as the justification of an assertion that constitutes the sense of the assertion". Dummett understands this as a theory of meaning as justification: the meaning of an assertion (or utterance) is given by the justification one may offer for the assertion (or utterance).² This theory – that Dummett takes as deeply anti-naturalistic – is accepted by various philosophers, in particular Sellars and Brandom.³

Anti-naturalism in semantics parallels anti-naturalism in epistemology: epistemology cannot be replaced by science (as happened with alchemy, which was replaced by chemistry). Epistemology lies on a normative level, science on a descriptive one; epistemology tries to answer the question (i) how should we form justified beliefs and scientific theories? while science (cognitive, psychological,

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¹ Cf. Frege (1884).

² Cf. Dummett (1979).

³ Cf. Sellars (1963); Brandom (1994 and 2000).

sociological, etc.) tries to answer the question (ii) how do we actually form our beliefs and scientific theories? However, this anti-naturalistic interpretation has been disputed. We will evaluate three main challenges, focusing on (a) the interaction between context of justification and context of discovery; (b) Quine's naturalized epistemology; (c) the naturalization of logic.

In this paper, we explore a different way of naturalizing meaning: we endorse a theory of meaning as justification and try to naturalize epistemic justification.⁴ We show that this method is bound to failure: it is impossible to naturalize the notion of justification. We then present a first argument against the naturalization of the notion of meaning; in the final section we propose a second argument. In philosophy of language one may claim that the meaning of an utterance amounts to the justification for the utterance, while in epistemology one may claim that the different theories of justification are set to clarify the meaning of the term "justification". We are therefore confronted with a circularity: the theory of meaning depends on the theory of justification and the theory of justification depends on the theory of meaning. We conclude that the naturalization of semantics through epistemology cannot be pursued.

27.2 Discovery and Justification

According to [Reichenbach \(1938\)](#), epistemology investigates the context of justification, whereas psychology investigates the context of discovery: if this distinction is clear cut, epistemology is an enterprise completely independent from science. The distinction, however, has been variously challenged: let us examine two different critiques, the first claiming that the context of discovery affects the context of justification, the second that the context of justification affects the context of discovery.⁵

Herbert Feigl writes:

There is a fair measure of agreement today on how to conceive of *philosophy* of science as contrasted with the history, the psychology, or the sociology of science. All these disciplines are *about* science, but they are 'about' it in different ways [. . .] In the widely accepted terminology of Hans Reichenbach, studies of this sort pertain to the *context of discovery*, whereas the analysis pursued by philosophers of science pertain to the *context of justification*. It is one thing to ask how we arrive at our scientific knowledge claims and what socio-cultural factors contribute to their acceptance or rejection; and it is another thing to ask what sort of evidence and what general, objective rules and standards govern the testing, the confirmation or disconfirmation and the acceptance or rejection of knowledge claims of science.⁶

⁴ On the naturalization of semantics, cf. [Loewer \(1997\)](#).

⁵ For the distinction between context of justification and context of discovery, see [Schickore and Steinle \(2006\)](#), and [Nickles \(2008\)](#).

⁶ [Feigl \(1965\)](#), p 472.

Feigl is arguing more or less explicitly that discovery is involved with the *genesis* of beliefs and scientific theories and hypotheses, whereas justification is involved with their *evaluation*: while the notion of discovery is descriptive, the notion of justification is normative. Yet Feigl is too optimistic in thinking that there is an uncontroversial divide between philosophy of science on the one hand, and history, psychology and sociology of science on the other. Logical empiricists and Popper have emphasized the distinction; Popper writes:

The question how it happens that a new idea occurs to a man – whether it is a musical theme, a dramatic conflict, or a scientific theory – may be of great interest to empirical psychology; but it is irrelevant to the logical analysis of scientific knowledge.⁷

But at the time that Feigl wrote (1965) logical empiricism was already losing its force, and post-Popperian epistemologists had begun casting doubts on Popper's theory. In *The Structure of Scientific Revolutions*, Thomas Kuhn underlines the role of history, sociology, and psychology in philosophical reflection on science. Moreover, he subsequently challenges the distinction between context of justification and context of discovery by means of two arguments:

- (1) Traditional philosophy of science takes a controversial stance concerning the choice of a scientific theory: crucial experiments, for example, are considered a good reason to opt for a particular scientific theory. But if we look at the history of science, we realize that, when crucial experiments are undertaken, scientists have already made their choice. Crucial experiments “scarcely illuminate the character of the choices that scientists are called upon to make”.⁸
- (2) Traditional philosophy of science presents only the arguments supporting the dominant scientific theory. It claims, for example, that the theory of combustion based on oxygen – but not the one based on phlogiston – justifies the law of proportions; but it does not present the arguments in favor of the theory of phlogiston. To argue for the superiority of the theory of combustion based on oxygen is to oversimplify the scientists' position concerning the choice between the two theories: “There are always at least some good reasons for each possible choice”.⁹

Kuhn uses (1) and (2) in order to claim that:

Considerations relevant to the context of discovery are then relevant to the justification as well; scientists who share the concerns and sensibilities of the individual who discovers a new theory are *ipso facto* likely to appear disproportionately frequently among that theory's first supporters.¹⁰

⁷ Popper (1934), p 31.

⁸ Kuhn (1977), p 328.

⁹ Kuhn (1977), p 328.

¹⁰ Kuhn (1977), p 328.

This amounts to saying that psychological, sociological and historical concerns affect the level of justification, introducing descriptive considerations in a normative enterprise. Feigl could reply that Kuhn fails to distinguish “how we arrive at our scientific knowledge claims and what socio-cultural factors contribute to their acceptance or rejection” from “what sort of evidence and what general, objective rules and standards govern the testing, the confirmation or disconfirmation and the acceptance or rejection of knowledge claims of science”.¹¹ Kuhn, in other words, fails to distinguish context of justification from context of discovery.¹²

As far as (1) is concerned, we may agree with Kuhn that the scientists’ choice of a theory *precedes* the so-called crucial experiments. However, we must discriminate between the scientists’ decision (context of decision) and the justification of that decision (context of justification): in other words, we must distinguish between the question of how a scientist or a scientific community makes a choice, and the question of whether this very choice is justified. Psychological, sociological and historical factors affect the first issue, but not the second one (“is this choice supported by good epistemic reasons?”).

As far as (2) is concerned, we may agree with Kuhn that choosing between two competing theories may be a much more complicated matter than usually described by philosophical accounts: as Kuhn puts it, “there are always at least some good reasons for each possible choice”. Granted, two competing theories sometimes appear equally justified, and scientists choose between them taking into consideration not the epistemically good reasons supporting them but aspects (psychological, sociological and historical) of the context of discovery. But *taking* two opposing beliefs or theories as equally justified at a certain time does not amount to saying that they *are* in fact equally justified. And even if two opposing beliefs or theories do appear to be equally justified at a certain time, the epistemological advice should not be “choose your theory taking into account psychological, sociological and historical factors”, but “suspend your judgement until you have more evidence in favour of a belief or theory”.

Kuhn has shown, then, that questions concerning the context of discovery are relevant not for the context of justification, but only for the context of decision. Nonetheless, the importance of the context of decision cannot be underestimated.¹³ Moreover, it is possible to define the context of discovery and of decision in terms of precise procedures; Sober writes:

A discovery procedure must take sentences which characterize the evidence as inputs and yield theories and hypotheses as outputs. A *decision procedure* must take the evidence and a single hypothesis as input and then determine whether or not that hypothesis is the best explanation, or the most acceptable hypothesis, relative to the evidence.¹⁴

¹¹ Feigl (1965), p 472, already quoted.

¹² On this point, cf. Siegel (1980), pp 309–313.

¹³ Our remarks thus far may appear less than completely fair to Kuhn; on this point, cf. Hoyningen-Huene (2006).

¹⁴ Sober (1978), pp 171–172.

We may well be inclined to say that human reasoning calls for inter-subjective heuristic principles. But this does not undermine the distinction between context of discovery and context of justification. Discovery and decision procedures clarify how we discover and decide, but not how we should discover and decide: we must keep our discoveries and decisions distinct from their epistemic status. The goal of epistemology is to answer the question (i) how should we form our justified beliefs and scientific theories?; while the goal of science (cognitive, psychological, sociological sciences etc.) is to answer the question (ii) how do we actually form our beliefs and scientific theories? However, in our procedures of discovery and decision we take *evidence* into account, and evidence is a form of justification: this seems to imply that some issues pertaining to justification affect discovery. Does the distinction still hold?

According to Kordig (1978), when we talk about *real discoveries* we are talking about something – at least partially – justified: we cannot say that we have discovered that UFOs exist if the hypothesis that UFOs exist isn't somehow justified. Saying that real discoveries must be at least partially justified in order to be *real* means that the distinction between the context of discovery and context of justification is vague. Kordig proposes to replace it with new distinctions: initial conception of a hypothesis (where the formulation of a hypothesis may be a causal process); plausibility of a hypothesis (when we judge a hypothesis to be plausible, i.e. testable, because we may offer reasons supporting it); acceptability of a hypothesis (based on its empirical confirmation, logical fertility, extensibility, simplicity, etc.). How should we evaluate this proposal? As is well known, a passionate epistemological-methodological debate tries to understand whether reasons invoked by scientists are actually good reasons. In any case, for Kordig acceptability is justification: "Scientists believe that hypotheses are true. They believe that hypotheses are empirically confirmed. They infer hypotheses from data. They propose reasons".¹⁵ But *believing* that hypotheses are true does not imply *knowing* that they are true; believing that hypotheses are empirically confirmed does not imply knowing that they are empirically confirmed: in order to know, one must have at least justified true beliefs. Inferring hypotheses from data does not imply inferring hypotheses from data in a proper way: proposing reasons and taking them as good reasons does not imply that they actually are good reasons. By identifying acceptability with justification, Kordig traces the latter back to the former: justification loses its normative force. Even if we agree that the distinction between discovery and justification is ambiguous – every real discovery being justified – we cannot replace question (i) (how should we form our justified beliefs and scientific theories?) with question (ii) (how do we actually form our beliefs and scientific theories?). Kordig does not offer a crucial argument for this replacement: it's time to examine Quine's argument.

¹⁵ Kordig (1978), p 115.

27.3 Quine's Epistemology

According to Quine, “epistemology, or something like it, simply falls into place as a chapter of psychology and hence of natural science”.¹⁶ The normative dimension of epistemology fades away into the descriptive dimension of science, and the context of justification into the context of discovery. Yet, if we give up the normative dimension, we no longer have an epistemological enterprise; as Kim claims, “Quine’s naturalized epistemology, while it may be a legitimate scientific inquiry, it is not a kind of epistemology, and, therefore, [...] the question whether it is a better kind of epistemology cannot arise”.¹⁷ If Quine’s is not an epistemological enterprise, it may disregard the context of justification – which is nonetheless the main object of epistemology. It may be objected that “epistemology, or something like it, simply falls into place as a chapter of psychology and hence of natural science” has two different interpretations: a strong one, where question (i) has no meaning at all, and a weak one, where question (i) has an answer only in relation to question (ii). In the weak interpretation, epistemology still has a role to play, in deep connection, or continuity, with science, while in the strong one there is no space for any epistemological endeavour.

Quine claims that he does not want to give up the normative character of epistemology; but it is difficult to understand how it could be maintained if epistemology is reduced to science – an enterprise devoted to description and explanation, not to justification. The notion of justification guarantees the normativity of epistemology, and it is a wholly epistemological notion, difficult to account for from a scientific perspective. In his naturalized epistemology, therefore, Quine coherently doesn’t endorse any theory of justification: the strong interpretation is the plausible one. In fact, according to Quine, epistemologists are simply empirical psychologists investigating human acquisition of science,¹⁸ aiming to explain the causal functioning of human knowledge of the external world,¹⁹ endorsing a naturalistic perspective where epistemology is assimilated to empirical psychology.²⁰ Question (i) loses any meaning: epistemology is replaced by science.

Is this fate inevitable? In Quine’s opinion, epistemology – in its non-naturalistic version – “is concerned with the foundations of science”.²¹ As far as mathematics is concerned, for example, he writes: “Reduction in the foundations of mathematics remains mathematically and philosophically fascinating, but it does not do what the epistemologist would like of it: it does not reveal the ground of mathematical knowledge, it does not show how mathematical certainty is possible”.²² And as far as natural science is concerned, Quine takes into consideration only the foundation-

¹⁶ Quine (1969), p 82.

¹⁷ Kim (1988), p 392.

¹⁸ Cf. Quine (1973), p. 3.

¹⁹ Cf. Quine (1970), p 2.

²⁰ Cf. Quine (1981), p 72.

²¹ Quine (1969), p 69.

²² Quine (1969), p 70.

alist model – re-interpreted by logical empiricists (especially Carnap) in order to rationally reconstruct our empirical beliefs as logical constructions based on sense-data: “The hopelessness of grounding natural science upon immediate experience in a firmly logical way was acknowledged. The Cartesian quest for certainty had been the remote motivation of epistemology [...] but that quest was seen as a lost cause”.²³ In a word, Quine’s naturalized epistemology is motivated by his dissatisfaction with traditional foundationalism, and its quest for certainty. But Quine’s dissatisfaction is largely insufficient to give up epistemology.

In fact, foundationalist proposals have by now abandoned the quest for certainty. They are still valuable as structural proposals – concerning the *structure* of the justification and not the *content* of the beliefs to be justified: rationalists as well as empiricists may endorse foundationalism as a structural proposal. According to this kind of foundationalism, beliefs are basic if and only if they are not derived and justified inferentially – in other words if they are immediately justified; beliefs are derived if and only if their justification is derived inferentially and is founded on some basic beliefs. Giving up the quest for certainty does not amount to giving up foundationalism – which, according to Alston (a contemporary foundationalist), may be summarized as follows: “Every mediately justified belief stands at the base of a (more or less) multiply branching tree structure at the tip of each branch of which is an immediately justified belief”.²⁴ The essential tenet of foundationalism – there are immediately justified beliefs and mediately justified beliefs based on the first ones – is still promising and unaffected by Quine’s criticism of traditional foundationalism²⁵: we are not necessarily forced to give up epistemology.

27.4 Logic

We have said that from a foundationalist perspective, justification is transmitted inferentially from basic beliefs to derived ones. Inferences may be logico-deductive or inductive. Restricting our attention to logico-deductive inferences, foundationalism could be naturalized by naturalizing deductive logic. Thagard, for example, claims:

The logician [...] is concerned to develop a set of principles which is inferentially optimal given the cognitive limitations of reasoners. This requires reference to background psychological and philosophical theories and to the goals of inferential behavior.²⁶

²³ Quine (1969), p 74.

²⁴ Alston (1976, 1989), p 42.

²⁵ For a different point of view, more sympathetic to Quine’s epistemology, and focused on the relationship between empiricism and naturalism, cf. Roth (2008).

²⁶ Thagard (1982), p 35.

According to Thagard, the aim of logic is to describe human deductive competence, and psychology must investigate our cognitive limitations. To give a description of logical inferential principles, we must seek a wide reflective equilibrium of many factors: human inferential practice, normative logical principles, psychological and philosophical theories concerning human cognitive competences and limitations, psychological and philosophical theories concerning objectives of human inferential behavior.

Logic may be naturalized. Therefore, foundationalism – which proposes a normative analysis of justification – could be naturalized for its employment of logico-deductive inferences: the naturalization of foundationalism is based on the naturalization of logic. This, however, is a tricky approach. Resnik, for example, writes:

Psychological reports [...] have the same degree of relevance to the enterprise of building models of deductive inference as surveys of attitudes towards capital punishment have to the construction of moral theories.²⁷

According to Resnik, then, psychological accounts have little relevance for the construction of theories of deductive inference. Goldman is even more explicit: “Validity or invalidity of arguments [...] is not a matter of psychology. Truths of model theory, proof theory, and recursive function theory – the main branches of logic – do not depend on psychological truths”.²⁸

Following a long tradition in philosophy of logic, one may argue that logic cannot be naturalized, because its principles are normative and not descriptive, contrary to human inferential practices. This notion of logic is essential to psychology itself: without a normative logic, there would be no psychology, no science of human deductive reasoning. As a matter of fact, the main goal of psychologists is to describe deviations from norms – norms of deductive reasoning provided by logic. Another way of rejecting the naturalization of logic is suggested by Goldman himself: logic is descriptive, but it does not describe human inferential practices: “Truths of logic are purely descriptive, factual statements. They formulate certain facts – presumably necessary facts – concerning semantic and syntactic properties and relations”.²⁹

In closing, the naturalization of logic may be rejected by an additional remark. What all logic does is to preserve truth³⁰: it is a device producing all and only the truth-preserving inferences. The centrality of truth in logic casts doubts on any serious attempt to naturalize logic: being true is not a factual property or the object of a natural science. We must conclude that the naturalization of foundationalism based on the naturalization of logic is a far from promising project.

²⁷ Resnik (1985), p 234.

²⁸ Goldman (1986), p 7.

²⁹ Goldman (1986), p 82.

³⁰ Better, logic preserves truth-value.

27.5 Towards Semantic Naturalism?

We have concisely presented three approaches to the naturalization of epistemology³¹: (a) the interaction between justification and discovery; (b) Quine's naturalized epistemology, replacing epistemology with science; (c) the naturalization of logic, where deductive logic depends on psychology. We have shown that all three approaches are confronted with major problems, casting serious doubts on the success of any attempt to naturalize epistemology. A theory of justification cannot be linked with sciences; therefore a theory of meaning (where meaning is interpreted as justification) cannot be linked to the sciences – namely meaning cannot be naturalized. This is, in itself, a fairly important point. It is also important if we agree with Bertolet when he writes that “the central topic in the philosophy of language that impinges on work in philosophy of science is the theory of meaning”.³² In fact, if we were to succeed in naturalizing the theory of meaning and replacing it with some science, we would be subscribing to a sort of nonsense, that is that the central topic in the philosophy of language that impinges on work in philosophy of science is the theory of science. Fortunately, we did not succeed in naturalizing the theory of meaning.

Of course the three attempts examined above are not the only ones possible. Naturalization of epistemology is nowadays enjoying an intense development.³³ But our worries with regard to the overall plausibility of the project of engaging science in the analysis of justification and meaning are exacerbated by another consideration. All theories of justification aim precisely to clarify the meaning of the expression ‘justification’, in spite of the well-known problems affecting the very notion of meaning. In this regard, what Goldman states is paradigmatic:

First, while there are doubtless severe theoretical problems concerning the notions of meaning and synonymy, there must be *some* substance to the commonsense notions suggested by these terms. Certainly we can distinguish better and worse definitions of a given word, whether dictionary definitions or definitions offered by casual speakers [. . .] So there must be *some* phenomenon of meaning that remains to be clearly elucidated. Second, although many philosophers preach the abandonment of analyticity, their practice sometimes belies their preaching. People do things very much *like* conceptual analysis even if they officially reject it. It is hard to do much in epistemology (or other branches of philosophy) without feeling constrained to do something like conceptual analysis.³⁴

³¹ We have no space here to go into detail and clarify, for example, the relations between a descriptive and a normative stance, or between explanation and justification. For a fuller account, cf. Baumslag (2000), Bunge (1998), Kantorovich (1988).

³² Bertolet (2008), p 36.

³³ Feldman (2001) and Goldman (2002) are useful in understanding the rich variety of naturalized epistemologies and the complexity of the relations between epistemology and science. It goes without saying that in this paper we basically took into consideration a radical naturalization of epistemology, i.e. the possibility to replace epistemology with science. There are of course moderate attempts to naturalize epistemology, i.e. to restructure it with the help of science.

³⁴ Goldman (1986), p 38.

In philosophy of language one may claim that the meaning of an utterance is given by its justification; in epistemology one may claim that all theories of justification aim precisely to clarify the meaning of the expression ‘justification’. There is a manifest circularity: the theory of meaning depends on the theory of justification, and the theory of justification depends on the theory of meaning. This circularity casts more doubts on the connection between theory of meaning and theory of justification.

To conclude, the attempt to naturalize the notion of meaning through the naturalization of the epistemology seems bound to failure. We are left with a problem: shall we abandon the notion of meaning as justification, or the project of clarifying the meaning of ‘justification’? In epistemology, giving necessary and sufficient conditions for the term ‘justification’ is a crucial goal in order to understand the notion of knowledge: justification is a necessary condition for knowledge. Epistemologists try to analyse a concept (the *analysandum*) expressed by the schema “S knows that p” or “S is justified in believing that p”, where “S” is the knowing subject and “p” the proposition known or justified. The analysis is expressed by the schema “S knows that p if and only if . . .” or “S is justified in believing that p if and only if . . .”, where the dots must be replaced by the *analysans*, i.e. a list of necessary and sufficient conditions. This analysis “can be regarded as a first approximation to a better way of treating [the] meaning”³⁵ of the main epistemic terms. In order to avoid the circularity described above, we must give up the notion of meaning as justification: luckily, this does not imply giving up every notion of meaning, since we can endorse a classical notion of meaning as truth-conditions. As a result, in any case, we must give up the attempt to naturalize meaning through the naturalization of justification.

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³⁵ Goldman (1986), p 39.

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