RECONSIDERING THE EPISTEMOLOGY
OF DEDUCTIVE-INFERENTIAL VALIDITY

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Abstract
Until quite recently, the epistemology of logical laws has not been much discussed and neither has how one can be justified in claiming that a particular inference is valid. The transfer of warrant from premises to conclusion(s) in modus ponens will be examined in the paper through assessing Paul Boghossian's inferentialist proposal of assuming 'blind reasoning'. It will be argued that merely being justified in inferring according to a logical law a priori is worthless unless one can also be justified in claiming that the inference is valid. An alternative to Boghossian's solution will be presented which addresses this need as well as the needs Boghossian had identified previously.

1. The Problem: Transmitting Justification in Deductive Reasoning

Assume that I want to go on a hike in the Swiss Alps. I'm planning a suitable route and consider the weather; the reports for the area are rather unreliable and I reason:

1) If alpine choughs occur in large groups, the weather in the area will change in the next 2 days.

2) Alpine choughs occur in large groups.

3) The weather in the area will change in the next 2 days.

And off am I to find a route which suits this conclusion. Now, given that I am justified in believing the premises and that my justification for believing the conclusion *beforehand* does not ground my justification for believing the premises, under what conditions does my deductive reasoning transmit justification from the premises to the conclusion?

Paul Boghossian formulates the question differently: in order for the inference to transfer justification from its premises to its conclusion(s), the premises must bear an appropriate *relation* to the conclusion(s) they ground—what, then, is that relation?[1] I want to find the right conditions, Boghossian searches for a relation. While a relation can be a necessary or a sufficient condition, it might turn out (at least theoretically) that *no* necessary (or sufficient) condition describes such a relation. Boghossian does not

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[1] Cf. Boghossian (2003: 226). It will become clearer at the end of the paper why I want to make this distinction here: according to my solution, premises and conclusion(s) of one inference are rooted in the same context and that guarantees the transfer of warrant—I do not pose any special relation which holds between them.

account for this possibility, but his strategy might still be worth considering. He takes the simplest possible answer to be thus:

> *Simple Inferential Externalism:*
> A deductive inference performed by *S* is warrant-transferring just in case (a) *S* is justified in believing its premises (b) *S*'s justification for believing its premises is suitably independent of his justification for believing the conclusion, and (c) the implicated pattern of inference is valid—necessarily such as to move *S* from truth to truths. (Boghossian 2003: 226).

Simple Inferential Externalism (SIE) tries to explain my example by pointing to the fact that my inference moved me from two truths (the conditional about the alpine chough (pyrrhocorax graculus) and a proposition about the actual occurrence of that kind of bird) to another truth, the proposition that weather will change in the next 2 days. The implicated pattern of inference preserves truth and transfers warrant in virtue of its form. There are three problems which a proponent of this must be aware of:

1) Let us assume that any sensible notion of truth for the present discussion must be compatible with Alfred Tarski's account i.e. be of significance for formal languages. This means that grounding an explanation of warrant-transfer in inferences on truth must come to terms with the ideal for logical and mathematical enquiry that there is a formal proof which grounds the truth (or falsity) of every sentence in the system. The present proposal neglects this need for any notion of truth which can play a role in logic and assumes truth to be more fundamental *throughout*.[2]

2) How can a pattern of inference *move* a thinker from truth to truths i.e. how is warrant transferred? Pointing out that there *is* such a fact is not answering the questions either about the necessary and sufficient conditions of the transferral of justification from premises to conclusion or about the appropriate relation which the premises need to have to the conclusion to ground it. Solving the problem means saying *how* a thinker is moved from truth to truths—merely pointing out *that* a thinker is moved in that way cannot answer the question to be pursued in this paper.[3] It might just mean that the proponent of SIE did not understand the question in the first place.[4]

3) Boghossian's objection is this: 'large numbers of inferences that we are in no

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[2] I take this point from Tarski (1969).
[3] A recent defence of the distinction between knowing-how and knowing-that can be found in Rosefeldt (2004). I won't go into this here.
[4] It seems to be enough if it can at least be said how one can claim that warrant is transferred. This is exactly what my solution will explain.

intuitive way justified in performing satisfy the stipulated conditions' (Boghossian 2003: 226). Arguably, his own example for such an inference is quite convincing:

> [...] it is easy for me to be justified in believing any particular claim of the form:
> x, y, z, and n are whole numbers and n is greater than 2.
> If I inferred from this proposition that:
> $x^n + y^n$ is not equal to z^n.
> I would have performed an inference that is, as we now know, reliably truth-preserving. But it would be absurd to suppose that anyone making such an inference would be drawing a justified conclusion, whether or not they knew anything about Andrew Wiles's proof of Fermat's last theorem or had checked each individual inequality. (Boghossian (2003: 226).

We have validity according to SIE and a counter-intuitive claim for being justified at the same time. It is not clear, how this could not be a puzzle for the proponent of SIE.

Let us focus on this objection by Boghossian. It is perfectly normal to take the formal validity of modus ponens (or similar laws) to be reliable—this is true for all simple cases and a reliabilist might argue that Boghossian's puzzle is just not simple in the relevant sense. What, then, does 'simple in the relevant sense' mean? Just that the formal validity is easy to believe in the case at hand. But then, 'easy to believe' is the salient criterion and 'is reliable' is parasitic upon it in the explanations needed here. How does this relate to being justified? Consider an example of Laurence Bonjour:

> Norman, under certain conditions which usually obtain, is a completely reliable clair-voyant with respect to certain kinds of subject matter. He possesses no evidence or reasons of any kind for or against the general possibility of such a cognitive power or for or against the thesis that he possesses it. One day Norman comes to believe that the President is in New York City, though he has no evidence either for or against this belief. In fact the belief is true and results from his clairvoyant power under circum-stances in which it is completely reliable.[5]

Norman has a true belief, but is not *justified* in believing it, although the belief results from a reliable cognitive power. This, again, shows that reliable mechanisms (as the formal validity of modus ponens for a proponent of SIE or Norman's clairvoyance) need not justify—holding the belief would still be *epistemically irresponsible*. This more general counterexample to Reliabilism seems to suggest that epistemically responsible reasoning demands a thinker who has some reflectively accessible warrant for his beliefs to be justified. Boghossian (2003: 228) observes:

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[5] Bonjour (1985: 41) as cited in Boghossian (2003: 228).

It looks, in other words, as though the counterexamples to Reliabilism motivate an *Access Internalism* about justification: *S* is justified in having the belief that *p* only if *S* is in a position to know, by reflection alone, that he has a warrant for the belief that *p*. If *S* is to have genuine justification, it must be a reflectively *transparent* justification.

This motivates an internalist alternative to SIE, because we cannot rely on the formal validity of modus ponens (or similar patterns); we must have an account which centralises a reflectively transparent justification for our inferences to be good:

> *Simple Inferential Internalism:*
> A deductive inference performed by *S* is warrant-transferring just in case (a) *S* is justified in believing its premises (b) *S*'s justification for believing its premises is suitably independent of his justification for believing the conclusion, and (c) *S* is able to know by reflection alone that his premises provide him with a good reason for believing the conclusion. (Boghossian 2003: 229).

Back to the first example with me trying to consider weather in planning a hike; Simple Inferential Internalism (SII) tries to explain it by stating that through reflection alone, I can come up with a good reason for believing that the weather will change in 2 days. If the conclusion turns out to be false, the inference could still have been valid. It depends on what is reflectively accessible to me. Again, there are three problems:

1) In the present solution, reflection *alone* is said to provide a good reason to believe (given the premises) that the weather will change. Reflecting must, in this case, be taken to provide reliable reasons for believing the conditional that alpine choughs react to certain changes in their environment in a specific way. But then, it is not reflecting *alone* that justifies; it must also be about something. Some experiences about the external world *upon which* a thinker reflects must be assumed for the reflection to reliably generate useful conclusions for planning a hike. Reflection must have a basis for being reliable in the present example and therefore, for justifying anything. In other words, to link it to the first objection to SIE: sometimes, the validity of a proof depends on truth, because if my justification through reflection is not good enough to ground a true belief (e.g. the conditional in the first premise of my example) the internalist alternative will be futile.

2) According to SII, a thinker must merely be *able* to know that he is justified by reflection alone. But in more complex arguments, being merely able to know that one is justified and being actually justified just *is* the same as being epistemically blame-

worthy or, if actually justified, blameless; in such cases, knowledge must be instantiated in order to defend the *claim* of being justified to anyone. As inferential patterns grow more complicated, claiming to be justified is potentially more objectionable, because possible sources of failure are more numerous. As Boghossian's motivation for SII was that the counterexamples to reliabilism demand an epistemically blameless thinker, we should opt for the stronger internalism which needs an actually knowing thinker who is justified by reflection alone.[6]

3) Boghossian's objection is similar to my first objection to SII, he also attacks knowing formal validity according to SII: 'How might S be in a position to know by reflection alone that p and p→q imply q?' (Boghossian 2003: 229). There seem to be two options for internalists: inferentialism and non-inferentialism. The inferentialist makes a petitio principii, as he explains knowing the validity of modus ponens by pre-supposing valid instances of modus ponens as components of the explanation of the reasoning in question. In the epistemology of logical laws, assuming that knowledge can always be explained through emphasising the central role of good inferences cannot be else than viciously circular. The non-inferentialist, on the other hand, can point out that some sort of observation brings along the needed justification or that nothing at all justifies it. In the second case, simply believing would be enough to be justified in belie-ving the validity of modus ponens. This need not be a feature of all beliefs, but of beliefs about inferential validity (and, probably, about all fundamental logical beliefs). Call these beliefs *default reasonable*—if you have them, you have them reasonably. Boghossian (2000: 13) finds it hard to see what conditions allow us to draw the diffe-rence between ordinary beliefs and beliefs with default reasonable status. As I will propose such conditions for my solution to the problem at the end of the essay, I will not go into this now.

Let's consider the other non-inferentialist strategy: what kind of observation could justify the validity of my inferences? Observing external objects (and states of affair) and reflecting on such observations cannot be a good answer for the internalist, as he then has to admit that SIE is more fundamental, as SII could consequently just explain how a thinker moves from truth to truths. The thinker is moved by merely

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[6] Boghossian (2003: note 8) opts for the weaker variant, but does not motivate this decision in detail.

reflecting on the fact that he was moved from truth to truths.[7] The internalist then becomes an externalist in diguise.[8] How can we construe 'non-empirical observation' here? What is needed, is an account of how one simply *sees* that from his true modus ponens premises a true conclusion follows straightaway—we need some *rational insight* into the validity of modus ponens. Suppose there was a useful concept of rational insight.[9] How does rational insight explain that a thinker inferring through modus ponens is actually *justified* in believing the validity of the inference? As the proponent of SII is after the validity of the *form* 'modus ponens' and not after the validity of specific instances, rational insight should justify all uses of modus ponens at once. According to Boghossian, the thinker has to make the step from the general validity of modus ponens to the validity of any particular instance of moudus ponens. He reasons:

1) If an inference is an instance of modus ponens it is valid.

2) This inference is an instance of modus ponens.

3) This inference is valid.

This means that for rational insight to justify the use of modus ponens, it must be presupposed to allow for making the step from the general validity of modus ponens (vindicated by rational insight) to its specific instances (Boghossian 2000: 233). The same holds for a rational insight into the validity of a specific instance of modus ponens: the thinker needs modus ponens to infer that he is *generally* justified by his singular insight to take the specific instance of modus ponens to be valid—that his use of the specific modus ponens is valid not only once, but every time he makes it. Otherwise, rational insight would never allow him to be sure that his inference will be valid until he makes it and SII would not be a good and general explanation, because it could always turn out differently in the future.

After a promising start, the proponent of rational insight makes a petitio principii—just like the inferentialist did: he must presuppose the validity of modus ponens in order to explain the validity of modus ponens. All the non-inferentialist proponent of SII can do now is to point out that rational insight into the validity of

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[7] It makes no difference here whether this reflection happens *as* the thinker is moved from truth to truths or *after.*

[8] In my first objection to SII, I tried to motivate the view that the internalist really should make this move for *some* cases in which validity actually depends on truths about the external world. The non-inferentialist who wants to build on observing external objects and states of affair would want to treat *all* cases like an externalist. This is not my view.

[9] Boghossian (2000: 230-2) argues that this assumption is misguided. Nevertheless, he discusses it.

modus ponens justifies the thinker's inferring as his seeing a healthy tree's leaves in late spring justifies him straightaway in believing that these leaves are green (Boghossian 2000: 235). But then again, merely having this specific belief is also being justified in having this belief. We are back at discussing default reasonable beliefs whereas the status of a belief being default reasonable can be *seen* straightaway.[10]

I have shown that SIE and SII, simple and common though they might be, cannot explain the transfer of warrant in inferences like modus ponens in a way satisfying for Boghossian. This leads us to his account of how the transfer must be explained. After that, I will show that there are explanatory needs which Boghossian's solution cannot satisfy and how a pragmatic account of default reasonable beliefs might solve the problems addressed in this essay.

2. Blind Reasoning: Inferences Built into Concepts

According to Boghossian, an important lesson to be taken from the considerations made so far is this: certain forms of deliberation must be entitling *without* needing a thinker who knows this or is able to arrive at that knowledge.[11] Certain inferences must be *blind* but justifying, this means that certain logical rules just underpin themselves, the explanation is *rule-circular* (Boghossian 2003: 237). There seems to be a strong tension between this conjecture and the requirement for a thinker to be epistemically blameworthy: when it comes to more complicated inferential patterns, the thinker must be able to claim being justified; that means that the thinker must at least believe that his inferences are *acceptable*, that he is entitled to infer as he does. This ties in with the more general observation that being epistemically blameless or blameworthy depends on other peoples reactions to one's reasoning or, at least, on the thinker's beliefs about what is acceptable against a given context.

How can we understand this dependence on other people's reactions? The reason, why you can claim that I am epistemically blameworthy, without me believing beforehand that I am, rests on the fact that my own beliefs are only accessible to me via representations. In the context in which you accused me of being blameworthy, I just

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[10] Ibid. note 16: Boghossian states that *seeing* the *justifiedness* is, first, unimaginable and, secondly, also leads to regress. Default reasonable beliefs are completely foreign to him. I want to show why they are, in fact, completely familiar.

[11] Boghossian takes this to be a Wittgensteinian point. Cf. Boghossian (2003: 237).

have not had the right representations to make me aware of the fact that I hold inconsistent beliefs. Your judgement thus contains an objective rational component which I need not be aware of. Your claim making me aware of this 'objectivized' my own mental content, which was hidden for me beforehand, to myself.[12]

Every thinker, then, must believe, based on the interaction with others, that he is entitled. Otherwise, merely being justified is worthless, because it cannot support any *claim* about being justified. And discussing the transfer of warrant from premises to conclusion(s) only appears as a sensible project when the claim for being justified in virtue of the form of a thinker's inferences seems to be counter-intuitive. Boghossian's blind reasoning cannot address this need, but although the motivation for his account of blind reasoning seems to be inadequate, there could still be a lesson to be learned from his solution.

Blind reasoning builds on a tight connection between meaning and entitlement. According to Boghossian, there is something like an entitlement *a priori*; one is, in such cases, justified in inferring such-and-such just through knowing the meaning of the words involved, through understanding the concepts they express:

> *Meaning-Entitlement Connection (MEC):*
> Any inferential transitions built into the possession conditions for a concept are *eo ipso* entitling. (Boghossian (2003: 241).

This is a more elaborated inferentialist strategy than the one encountered in the context of SII. But, besides the objection that blind reasoning cannot ground claiming to be justified in inferring,[13] the more general question can be examined whether accounting for the transfer of warrant from premises to conclusion(s) can be answered in the idiom of theories about thought and meaning at all. According to Timothy Williamson (2003), this strategy does not work in the case of MEC. For Boghossian, understanding a word like 'tree' means having the concept *tree*. Having a concept also means grasping how it relates to other concepts, grasping how the concept figures in inferential patterns.

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[12] This idea stems from Spohn (2002, p. 14).

[13] Crispin Wright notes this as well: "We observed however that, if the question is not how we might get such knowledge but our right to claim it, then Boghossian's proposal is no help—that the claim to knowledge must rest, even in the rule-circular case, on a prior claim that the machinery utilised in the rule-circular derivation is valid. Indeed, this is a characteristic kind of failing: it's a characteristic weakness of externalist manoeuvres in epistemology that, while leaving us rich in possibilities for knowledge, they tend to leave us short on claims to have it." Wright (2004: 21).

Williamson calls this inferentialist premise (Have) and goes, after discussing it painstakingly, on to the following observation:

> Unfortunately for inferentialism, the nature of language as a medium of communication between individuals who disagree with each other in indefinitely various ways undermines attempts to make accepting a given inference a necessary condition for understanding a word; therefore, by (Have), it undermines attempts to make accepting the inference a necessary condition for having the concept. (Williamson 2003: 46).

This is just to say that MEC cannot support *any claim* about being justified. There can be sensible arguments about when a thinker is justified in using logical concepts like *modus ponens*[14] and discussing logical concepts at all requires that it is possible to make diverging claims about the possession conditions while still understanding the word which seemingly expresses the concept. Hence, MEC construes a link between meaning and entitlement which is too strong. Addressing the present problem in the idiom of theories about thought and meaning, in the way Boghossian does, is not successful, because it involves acknowledging a priori commitments which we must not be entitled to a posteriori if we want to discuss e.g. logical concepts *as* we do.

But then, is there any way in which we can hope to explain the transfer of warrant as discussed here? Crispin Wright writes:

> If [...] the rule-circular account should prove to founder, then my suggestion is that we should consider that there is at this level only entitlement: what we have, at the level of the most basic laws of logic, is not knowledge, properly so regarded, at all, but something beneath the scope of cognitive enquiry,—rational trust, susceptible neither to corroboration nor rebuttal by any cognitive achievement. (Wright 2004: 24).

I will follow this line of thought, but argue, pace Wright, that there is a way of knowing the most basic laws of logic and, thus, that logical laws can still be committing in some sense.

3. Focusing on Entitlement: Pragmatic Inferential Externalism

Recall two points I kept mentioning from the beginning on:

1. *Tarski's Proof-Truth Connection (PTC):* A Tarski-style truth can ideally be proven and a proof determines whether a sentence is true.

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[14] Cf. McGee (1985) for alleged counterexamples to *modus ponens*.

2. *The Blame-Acceptance Connection (BAC)*: Being epistemically blameless or blameworthy depends on what other people are ready to accept during a conversation.

PTC implies that SIE's third condition in fact explains being justified in inferring for some cases (i.e. when we embed true sentences in formal systems, the truths enable us to distinguish between good and bad proofs) and that the same holds true for SII's third condition (i.e. when we want to know whether a sentence in a formal language is true, we employ proofs viz. infer them from other true sentences, invoke some evidence or default reasonable beliefs etc.). If deductive inferences should be useful outside of closed formal systems, the intuition that we sometimes know whether a sentence is true and that we sometimes know how to find out whether a sentence is true must be preserved. This means that in virtue of PTC the two conditions from SIE and SII may well be combined through a disjunction and we can, depending on the situation, choose between explaining the transfer of warrant through truth-preserving or a non-inferentialist account of reflection (which is yet to be given).

BAC holds that other people's reactions matter. In a specific context in which a thinker infers, the justification for believing the conclusion(s) and the justification for believing the premises must ground in the context for claiming the validity of the inference to be acceptable; in this sense, the two justifications must not be independent. Whenever anything is discussed, certain assumptions about what is *common ground* between the participants must be made. This calls for a revision of the second condition of SIE and SII. In order to prepare the grounds for a new account, 'acceptance' and 'common ground', as used here, must be explained:

> (Acceptance)
> Acceptance [...] is a category of propositional attitudes and methodological stances toward a proposition, a category that includes belief, but also some attitudes (presumption, assumption, acceptance for the purposes of an argument or an inquiry) that contrast with belief, and with each other. To accept a proposition is to treat it as true for some reason. One ignores, at least temporarily, and perhaps in a limited context, the possibility that it is false.

> (Common Ground)
> It is common ground that φ in a group if all members *accept* (for the purpose of the conversation) that φ, and all *believe* that all accept that φ, and all *believe* that all *believe* that all accept that φ, etc. (Stalnaker 2002: 716).[15]

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[15] Cf. Stalnaker (1984: 79-81).

As mentioned above, inferring and discussing or thinking about the validity of an inference depends on what one takes oneself to be entitled to. A thinker is entitled to utter a proposition if he believes it to be common ground, but this 'entitlement' does not stem from inferential links built into concepts. It stems from beliefs about what other people accept and belief.

This, then, is the account of default reasonable belief I was aiming at when discussing SII: beliefs about common ground are reasonable by default, as they, they may in fact be correct or not, make talking to other people possible. Any language user bases his linguistic behaviour on assumptions about the common ground—that makes him a *reasonable* language user. Even if such a belief was wrong, it was at least good in the context, the speaker thought himself in. Him being reasonable demands adjusting his language use to make it acceptable in a given context; it cannot demand that the speaker actually uses language as it would be accepted throughout, because the common ground is not immediately accessible for him. Furthermore, if the validity of all instances of modus ponens is common ground (as, for example, in an introductory course in formal logic), all participants are committed *by partaking in the course* to take the validity for granted. In such a context, knowing the validity of modus ponens is rock-solid and mere entitlement becomes necessary commitment to some logical laws—Boghossian's MEC holds. Knowing that one is committed to a specific logical law makes it a component of the context, assailing it means attempting to change the context. Relative to a specific context, my correct beliefs are certain and, thus, may be labelled 'knowledge'. [16]

As common ground is never in the head of any single participant, the solution to be sketched here is a form of social externalism about mental content—every speaker depends on the reaction of the other participants in order to find out whether his beliefs about common ground were true and subsequently, to be able to adjust his linguistic behaviour to match common ground. The new inferential externalism can be formulated now:

> *Pragmatic Inferential Externalism (PIE):*
> A deductive inference performed by *S* in a specific context *C* is warrant-transferring just in case (a) *S*'s justification for believing its premises is suitably independent of his justification for believing the conclusion, but both, premises and conclusion, are common

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[16] Note that 'correct' means, in the present context, 'corroborated by the other participant's reactions'.

ground, and (b) *S* knows by reflection that his premises provide him with a good reason for believing the conclusion or the implicated pattern of inference is valid—necessarily such as to move *S* from truth to truths.[17]

PIE is only a sketch, it must still be situated in ongoing debates, this will call for refinements. Especially the notion of entitlement must be made clearer, as well as the epistemic status of PIE: Can we safely assume that it itself is not context-relative?

Nevertheless, I am sure that PIE, as it stands, is a good alternative to blind reasoning and that the arguments that led to it showed that the transfer of warrant from premises to conclusion(s) must be explained, pace Boghossian, a posteriori. The epistemology of deductive-inferential validity must acknowledge the importance of thinkers interacting with the world and other thinkers in specific contexts. Knowing that I am entitled, or even committed, to infer in accord with a logical law can thus never count as basic knowledge.

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[17] Note that the 'or' of the second condition in PIE must be inclusive.

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