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Inference and Insight

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All of us are disposed to reason according to the rule of inference modus ponens (MPP): from

p

and from

If p, then q

we are disposed to conclude

q.[1]

Moreover, we are not only disposed to draw such inferences, we feel *entitled* to them a priori: simply on the basis of the premises, and without any further information, we take ourselves to be justified in believing the conclusion. In what does our justification for making such inferences consist? Notice: I am asking here about our justification for *inferring* according to the rule MPP, not about our *belief*, which we might also have, that MPP is valid, necessarily truth-preserving in all its applications. I take the question concerning the practice to be more fundamental than the corresponding question about the belief; later, I shall return to the question concerning the belief.

With regard to the more basic question, here are two contrasting views. First, BonJour:

> When I carefully and reflectively consider the ... inference ... in question, I am able simply to see or grasp or apprehend ... that the conclusion of the inference must be true if the premises are true. Such a rational insight, as I have chosen to call it, does not seem to depend on any particular sort of criterion or any further discursive or ratiocinative process, but is instead direct and immediate. (p. 106–7)

[1] Strictly speaking, our disposition is either to believe q or to give up one of the other premises; I shall ignore this complication in what follows.

Next, Wittgenstein:

> Giving grounds, however, justifying the evidence, comes to an end;—but the end is not certain propositions' striking us immediately as true, i.e., it is not a kind of *seeing* on our part; it is our *acting*, which lies at the bottom of the language game.[2]

The contrast between the two pictures could not be more stark. According to BonJour, our a priori justification for our basic deductive practices is grounded in a *cognitive* state, a species of propositional knowledge, and one moreover that's analogous to *sight*: my justification for making transitions of the form MPP consists in my 'seeing,' 'grasping,' or 'apprehending' that, in transitions of that form, if the premises are true the conclusion has to be true. By contrast, Wittgenstein seems to be saying that, in such basic cases, our justification comes to an end not in any propositional knowledge on our part, and certainly not in something that's analogous to sight, but rather in something we *do* and that we do *blindly,* without support from some perception, apprehension or grasp. One of the central questions in the theory of the a priori is which picture is correct.

It is very tempting to think that the cognitive/perceptual answer has to be the right one. (BonJour himself seems to be so much in its grip that he doesn't provide proper consideration of the alternatives.) There are two main motivations for this. First, it's not hard, at least at first blush, to find talk of *seeing* the validity of modus ponens natural. We do seem somehow to be able to just "take in" the fact that inferences of that form are necessarily truth-preserving.

Second, and more important: it is very hard to see how if something I do is backed neither by something like a perception nor by something like an inference it can count as justified at all. It is, of course, the promise of a reliabilism about justification that it is able to make sense of such a possibility. But I join BonJour in finding reliabilism inadequate, for failing to connect with a thinker's responsibility for his cognitive practice. If we set reliabilism aside, then, how can we make sense of a justified inferential practice that is supported neither by a perception nor by some appropriate inference? If all I can say about my disposition to reason according to MPP is that that is how I am disposed to reason, what is to rationally prevent someone else from proceeding in some other way?

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2 *On Certainty*, #204. This passage is interestingly related to the discussion of rule-following from *Philosophical Investigations*, paragraph 219:

> When I obey a rule, I do not choose.
>
> I obey the rule *blindly*.

I elaborate on the connection in "Wittgenstein on Rules and Reasons," (in preparation).

If we are to avoid skepticism or relativism about our fundamental inferential practices we have to find something to ground them in. Since we are talking about the justification of fundamental *inference*, it seems clear that the justification we are seeking cannot consist in something that is itself inferential. (In being inferential, any such justification would have to help itself to the use of the very sort of inference it is attempting to justify.) On the assumption that perception and inference exhaust the available options, we seem to be left with perception. But, clearly, ordinary empirical perception won't fit the bill, since we are talking about knowledge of necessary truths. It appears, therefore, that if we are justified in our fundamental inferential practices, that is because we are equipped with a perception-like faculty that is able to do precisely what ordinary perception cannot—viz., discern the necessary properties of properties. In a word, we appear to be committed to rational insight, just as BonJour defines it.[3]

Considerations such as these have understandably pushed philosophers in the direction of the sort of cognitive picture that BonJour favors. As he himself notes, many of history's most distinguished philosophical minds probably subscribed to some version of a rational insight theory of the a priori. His extended and resourceful defense of the view presents an excellent opportunity for reassessing its prospects.

Given the prima facie appeal of rational insight, and given its venerable past, why has the contemporary philosophical mainstream turned so decisively against it?

The single most influential consideration against rational insight theories can be stated quite simply: no one has been able to explain—clearly enough—in what an act of rational insight could intelligibly consist. That is, no one has been able to say how some cognitive act, of a sort that we might plausibly enjoy, is able to yield immediate knowledge of the modal properties of properties. If the theory of rational insight is to serve as a genuine *explanation* for how we are able to have such a priori knowledge, rather than simply acting as a placeholder for such an explanation, it must consist in more than a suggestive label; it must somehow lay bare, in appropriate detail, how some capacity that we have gets to work on the properties we are able to think about so as to disclose their natures.

Unfortunately, I am unable to say that BonJour delivers the sought after clarity and demystification. The central difficulties for the notion of rational insight are not laid to rest in his book.

No one denies, of course, that we can *think about* properties and relations, including logical properties and relations, and that, as a result, we can reason our way to general conclusions about them. The question is whether we can

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[3] For the purposes of this discussion, I will go along with BonJour's unfashionable assumption that we have a priori knowledge only of necessary truths.

be said to have some sort of non-discursive, non-ratiocinative, insight into their natures.

Earlier on I conceded that there seemed to be something to our simply being able to 'see' the validity of a rule like MPP. But all that we can legitimately mean by that, it seems to me, is that an elementary piece of reasoning shows that there can be no counterexample to it. Thus: A conditional statement is true provided that if its antecedent is true so is its consequent. Suppose, then, that a particular conditional statement is true and that so is its antecedent. Then, it simply has to be the case that its consequent is true.

This, however, will not serve BonJour's purpose at all because this sort of justification, in being discursive and ratiocinative, must use MPP to get to its target conclusion. If we are to make sense of rational insight what we need to understand is not how we might be able to *reason* about the conditional, but rather how we might be able to have a direct, non-discursive insight into its nature, an insight that would disclose, immediately and without the help of any reasoning whatsoever, that all instances of modus ponens are truth-preserving.

Unfortunately, we are not given much help in figuring out how this would work. The problems center on the issue of cognitive access. The analogy with sense perception encourages us to think that the relation between the thinker and the truth function is causal. But that is impossible since the truth function is just an abstract object. BonJour wrestles with this issue and comes up with a two-part response.

The first is to insist that, contrary to what is suggested by all his presentations of the idea, both formal and informal, rational insight is not to be understood on analogy with sense perception. As BonJour immediately recognizes, however, this retreat urgently calls for an alternative account of what it might be. In the second part of his response, BonJour attempts to supply the required alternative. His ambitious idea, if I understand him, is first to propose a radically different way of thinking about mental content, according to which the purely *intrinsic* properties of a thought determine which property it is about; and then to assimilate rational insight to a form of introspective examination of that thought content.

If we ask how it could turn out to be the case that the purely intrinsic properties of a thought—not of the thinker, mind you, that would just be a form of narrow content, but of the thought itself—could be sufficient to determine which property it's about, the answer, according to BonJour, is that we need to be able to think of the properties that our thoughts are about as *instantiated* by those thoughts.

If we ask how my thoughts about triangularity could instantiate triangularity given that they are not themselves triangular, the answer is

that the universal instantiated by thoughts of triangular things is a more complex universal having the universal triangularity as one of its components, ... Such a complex universal would have to be so structured that a mental act could be an instance of the complex universal without it thereby being literally an instance of triangularity, indeed without anything being such an instance. The logical relations involved in the structure would thus have to be quite different from truth-functional conjunction and other similarly extensional relations. (p. 184)

If we ask further what these non-extensional logical relations are, we are not told. No more explanation is provided. These brief remarks leave us mystified as to how the property of triangularity could be instantiated by my thoughts about triangularity without anything being triangular as a result. Nor are we told how any of this would apply in the case of the conditional: what would it be for my thought to instantiate the conditional truth function, so that I am able by sheer inspection of my conditional thought contents to discern the necessary truth-preservingness of modus ponens?

Finally, and perhaps most damagingly, we are not told how any of this would help, even if it were not mystifying. Suppose my thoughts about a particular triangle do instantiate triangularity: how does this help explain how I am able to directly divine the nature of triangularity? How does the fact that my thoughts instantiate the properties of redness and greenness explain how their *natures* and mutual incompatibility are immediately apparent to me, without any reasoning whatever? We are left staring at the problem with which we began, rather than feeling that we have been placed on the path to real enlightenment.

Severe as these problems are, however, they are not amongst the most important for the rational insight theory of the a priori. The fundamental problem with that theory, it seems to me, comes much earlier, with the very assumption that our fundamental deductive practices are grounded in some species of *propositional knowledge*. There are at least two important objections to this assumption.

The first has to do with its implausible sophistication. BonJour recognizes that on his view,

... even an apparent rational insight ... must involve a genuine awareness by the person in question of the necessity or apparent necessity of the proposition in question in something like the strong or metaphysical sense, not merely a generic belief that it is in some way obvious—thus requiring at least an approximate (though perhaps, in some cases, very implicit) grasp of that very demanding concept of necessity. (p. 114)

But he does not sufficiently acknowledge the implausibility of this commitment. A child who reasoned:

- If he were hiding behind that tree, he wouldn't have left his bicycle leaning on it
- But it is leaning on it

- So, he must be hiding behind some other tree

would, other conditions permitting, have reasoned his way to a justified conclusion. But such a child would not have beliefs about necessity or logical entailment. He wouldn't even have the ingredient (meta-)logical or modal concepts. If we are serious about the claim, as it appears that we ought to be, that even modally innocent children can be justified in their modus ponens inferences, then we have to allow that the justification for our inferential practice cannot be grounded in propositional knowledge of the modal validity of those inference forms.

This very same moral is also suggested by a second far more powerful consideration—the argument outlined in that enigmatic note by Lewis Carroll entitled "What the Tortoise Said to Achilles."[4]

According to the propositional picture, one can only be justified in inferring a given conclusion from a given premise according to a given rule R, if one knows that R has a particular logical property, say that it is truth-preserving.

So, for example, no one simply reasoning from the particular proposition p and the particular proposition 'if p, then q' to the proposition q could ever be justified in drawing the conclusion q; in addition, the thinker would have to know that his premises necessitate his conclusion. Let us suppose that the thinker does know this, whether this be through some act of rational insight or otherwise. How should we represent this knowledge? We could try:

(1) Necessarily: $p \rightarrow ((p \rightarrow q) \rightarrow q))$

Some may feel it more appropriate to represent it meta-logically, thus:

(2) p, $p \rightarrow q$ logically imply q

The question is: However the knowledge in question is represented, how does it help justify the thinker in drawing the conclusion q from the premises with which he began?

The answer might seem quite simple. Consider (1). Doesn't knowledge of (1) allow him to appreciate that the proposition that q follows logically from the premises, and so that the inference to q is truth-preserving and so justified?

In a sense, the answer is obviously 'Yes', knowledge of (1) does enable an appreciation of just that fact. But it doesn't do so automatically, but only via a transition, a transition, moreover, that is of a piece with the very sort of transition it is attempting to justify.

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[4] *Mind*, 1895. James van Cleve also suggests something similar as the moral of the Lewis Carroll argument; but the argument he outlines is distinct from the one I present. See his "Reliability, Justification and Induction," *Midwest Studies in Philosophy*, 1984.

A. $p \rightarrow ((p \rightarrow q) \rightarrow q))$

B. p

C. $(p \rightarrow q) \rightarrow q$

D. $p \rightarrow q$

E. Therefore, q

As is transparent, any such reasoning would itself involve at least one step in accord with modus ponens.

What about representing the knowledge in question as in (2)? The problem recurs. To know that p and $p \rightarrow q$ logically imply q is just to know that if p and $p \rightarrow q$ are true, then q must be true. Once more, there is an easy transition from this knowledge to the knowledge that q must be true, given that p is true and that $p \rightarrow q$ is true. But the facility of this transition should not obscure the fact that it is there and that it is of the same kind as the transition that it is attempting to shore up.

If, therefore, we insist that the original inference from p and $p \rightarrow q$ to q was unjustified unless supported by the propositional knowledge represented either by (1) or by (2), then we commit ourselves to launching an unstoppable regress. Bringing any such knowledge to bear on the justifiability of the inference would itself require justified use of the very same sort of inference whose justifiability the general knowledge was supposed to secure.

What this Lewis Carroll-inspired argument shows, it seems to me, is that at some point it must be possible simply to *move* between thoughts in a way that generates justified belief, without this movement being grounded in the thinker's justified belief about the rule used in the reasoning. The assumption on which the BonJour picture depends, that an application of MPP can only be justified if the thinker can see that his rule of inference is valid, is false.

But how are we to make sense of the alternative? Can we explain how a thinker could be entitled to reason in a particular way without this involving—incoherently—that the thinker knows something about the rule that's involved in his reasoning?

We can, I think, if a natural, indeed virtually inevitable suggestion, is true: namely, that our logical words (in mentalese) mean what they do by virtue of their inferential role, that 'if, then', for example, (or more precisely, its mentalese equivalent) means what it does by virtue of participating in some inferences and not in others. If this is correct, and if, as is overwhelmingly plausible, it is by virtue of its role in *fundamental* inference that the conditional means what it does, then we have an immediately compelling answer to the question: how could someone be entitled to reason according to

MPP without having a positive belief that entitles him to it. If fundamental inferential dispositions fix what we mean by our words, then, as I have tried to show elsewhere, we are entitled to act on those dispositions prior to and independently of having supplied an explicit reflectively appreciable justification for them.[5]

It is obviously beyond the scope of this critical notice to defend this view in detail. Let me just state one of the key ideas. If it's really true that someone's being disposed to reason according to modus ponens is a necessary condition of their having any logical concepts whatsoever, there can be no intuitive sense in which their disposition to reason according to modus ponens can be said to be epistemically irresponsible, even if they possess no reflectively appreciable warrant that justifies their reasoning. It is simply not possible, I think, to construct a case, of the kind made central to epistemology by BonJour's *other* book, that would prove otherwise.[6]

If this is right, the foundation for at least one central aspect of the a priori—deductive reasoning—cannot consist in the sort of sighted propositional knowledge that BonJour is attempting to rehabilitate. The question that arises at this point is whether the theory of meaning and concepts can explain the full range of a priori knowledge that needs explaining. This is obviously a large question, one that I have attempted to give a positive answer to elsewhere.[7] However, there remain many unresolved problems; and so long as that's true, theorists of the a priori will continue to be tempted by the defiantly mysterious notion of rational insight.[8]

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5 See my "How Are Objective Epistemic Reasons Possible?", forthcoming in *Philosophical Studies*. A full treatment also requires showing how to handle 'tonk' and other problematic connectives. BonJour is opposed to conceptual role semantic accounts of the meanings of the logical constants; but I don't find his reasons compelling.

6 See his *The Structure of Empirical Knowledge*, (Cambridge, MA: Harvard University Press, 1985). My claim is only that it's not possible to show that someone fails to be justified in their logical reasoning just because they are not in possession of a reflectively appreciable warrant for it, if that reasoning plays a constitutive role in their possession of the ingredient logical concepts. I don't need to deny that one's warrant for such reasoning could be undermined by a positive argument of some sort, although that scenario raises still further issues.

7 "Analyticity Reconsidered," *Noûs*, 1996; "Knowledge of Logic," in Boghossian and Peacocke (eds.) : *New Essays on the A Priori* (Oxford: Oxford University Press, 2000); "How are Objective Epistemic Reasons Possible?", *ibid.*

8 For valuable comments, I am grateful to Ned Block, Paul Horwich, Christopher Peacocke and Stephen Schiffer.