

The Indispensability of Logic

Abstract. The paper discusses the currently prominent strategy of justifying our elementary logical-inferential practices by their unavoidability and global indispensability for all our cognitive efforts. It starts by agreeing with prominent apriorists about their attempt to justify such beliefs based on constitutiveness (Boghossian) or based on the Global Indispensability Argument (C. Wright), and then proceeds to argue that unavoidable and indispensable tools provide entitlement/justification for projects if those projects are themselves meaningful. However, we are justified to think that our most general cognitive project is meaningful, and justified partly on the basis of its success up until now; and this basis is *a posteriori*. Therefore, the whole reflective justification from compellingness and unavoidability is *a posteriori*. This suggests that the justification of our intuition-based armchair beliefs and practices in general is plural and structured, with *a priori* and *a posteriori* elements combined in a complex way. It seems therefore that *a priori*/*a posteriori* distinction is useful and to the point. What is needed is refinement and respect for structure, not rejection of the distinction.

1 INTRODUCTION

How is simple and naïve logical reasoning justified? If, in the case of naïve cognizer, we distinguish the immediate entitlement, normally not consciously available to her, and in this sense ‘external’ to her, from reflective justification reserved for more sophisticated cognizers, our question branches into two. First, where does the entitlement of a naïve thinker who spontaneously and unthinkingly uses Modus Ponens or Conjunction Elimination come from? And when the naïve thinker becomes more sophisticated, where does her reflective justification come from? One powerful family of arguments for ultimate justification of our logical practice(s) concerns the following facts: simple rules of logic are compelling and unavoidable for humans, they enable the very having of

beliefs and constitute the rationality of reasoning. Because of this, they are both unavoidable and indispensable for our thinking, and for any sort of cognitive projects we might engage in. This secures the entitlement for the naïve reasoner, and justification for the sophisticated, reflective thinker. The apriorists add that these two, entitlement and justification, are a priori. This line of argument and the resulting family of arguments is extremely popular in contemporary debates, represented by leading thinkers on the matter, such as C. Wright, P. Boghossian, and to some extent P. Horwich and C. Peacocke (see References).

I shall assume here that the above line of argument is plausible indeed, but will argue that it is as yet incomplete and demands a further step that leads it away from the conclusion these thinkers prefer. I shall point out that *unavoidable and indispensable tools provide entitlement/justification for projects only if projects are themselves meaningful, and provide reflective justification only if we are also justified in finding them meaningful. However, we are justified to think that our most general cognitive project is meaningful partly on the basis of its success up until now; and this basis is available only a posteriori; we are justified in trusting that these projects are meaningful a posteriori, because they seem to have worked decently well up until the present. Therefore, the justification from compellingness and unavoidability is a posteriori, both in its role of warrant, usually spontaneously had by the naïve thinker, and in its role of reflective justification, found out and deployed by philosopher(s).*

The line of thought to be proposed in this paper has important similarities and dissimilarities with the traditional Quinean argument for indispensability. The similarity is in the basic appeal to a posteriori considerations of indispensability and success. The difference is structural: first, it is only one line among several, and it does not exclude some prima facie justification by obviousness and compellingness which is a priori; second, it concerns either the entitlement that is normally external and not present to the cognizer's awareness, or, if she is a reflective thinker, then also her high-level reflective justification.

In this paper I will present this line of argument in more detail, using as my foil the work of Boghossian and C. Wright. I apologize for not going into a longer debate with them, for lack of space. Let me start.

Our topic is the ordinary, naïve use of logic in reasoning. So, take a naïve reasoner N who passes from accepting a conjunctive statement to accepting one of its conjuncts (and acting upon her belief in it), thereby performing (what we would describe as) a step of elimination of conjunction. This can be brought to light by explicitly asking her a question about *p*-and-*q* but not-*p* situation, e.g. whether it is possible that the whole (conjunctive) statement holds, i.e. that the complex situation obtains, without things being as the relevant conjunct describes them. The "Of course, not" answer would confirm the impression that she does have a mastery of the rule governing conjunction. Call this knowledge instance-knowledge. It seems that knowledge manifested in such spontaneous inferences is knowledge how. However, when a naïve thinker begins to reflect,

the inferential step seems obvious, at least in its concrete implementation: the impossibility of the combined concrete situation is obvious, vividly presented to her. Thus she finds the situation in which it is the case that p -and- q but not- p (for some instances of “ p ” and “ q ”) inconceivable.

Let us follow common sense in assuming that N is making no mistake in reasoning the way she does. Let us refine this assumption by ascribing to N an immediate entitlement that she would find difficult to formulate; part of this entitlement stems from the fact that Conjunction elimination is in fact a valid rule, and part of it, we shall argue (along with our apriorists) comes from the indispensability of such steps for N’s reasoning, cognitive project(s) and action. N could learn logic and epistemology and become reflectively aware of the issues involved; call N at that stage N*. Or, an epistemologist might start reflecting upon N’s (or her own) performance. They would then pass to a level of reflective internal justification.

In principle we thus have two directions of reflection: 1st person type, exemplified by our sophisticated N* character, and 3rd person type, exemplified by our epistemologist. It would be interesting to explore similarities and differences between the two, but I must be short. Let me just state my view: 1st person reflective justifiedness is necessary for being completely justified. I am using as my framework a two-level picture of justification that I have picked up from the work of Russell and Sosa (see their works in References, and also the paper by Tom Baldwin listed there); but I hope that the results of the discussion can be easily applied, *mutatis mutandis*, to other frameworks; for instance, if you believe only in conscious, reflective justification, the result will be relevant for your framework as well. On the more externalist side, even if you disagree with my line on the importance of 1st person reflective knowledge, you might think that completely blind spontaneous thinking is not sufficient for justification. Only the most simple reliabilists think it is. Others think that some sort of availability of the 3rd person type justification is needed. (Peacocke and Boghossian might be good examples). For all of them, the issue of indispensability is crucial. So, what is exactly the role of indispensability, and what is its character; is the justification it bestows a priori or a posteriori?

2 THE INDISPENSABILITY ARGUMENT(S)

Here is then the preliminary sketch of my main argument:

- (0) Logical practice and beliefs stand in need of entitlement and justification.
- (1) Simple rules of logic are indispensable for humans, therefore

- (2) they are both unavoidable and indispensable for our thinking, and for any sort of cognitive projects we might engage in.
- (3) Unavoidable and indispensable tools provide entitlement/justification for projects iff the projects are themselves meaningful.
- (4) Our most general cognitive project has been at least minimally successful, and therefore it is meaningful and we are justified in believing that it is, and the naïve thinker is entitled to her logical reasoning.
- (5) This justification and entitlement are to a large extent a posteriori.

We now look briefly at each step. First, premise (0): the need for entitlement and justification. By entitlement for A-ing we mean that the A-er is permitted to A and is blameless in doing so. We also allow for first-level justification: obviousness and immediate compellingness does provide some good reason, but not all obvious and compelling beliefs and procedures are justified. Nash once said that he is receiving messages from extraterrestrials which come to him with the same degree of persuasiveness (and he probably meant obviousness and immediate compellingness) as his mathematical theorems. Since this phrase is printed on the cover of the paperback edition of the “Beautiful Mind”, let me call the problem The Beautiful Mind Problem. It introduces the need for second-level, reflective justification: why do I trust my use of Conjunction elimination, if geniuses like Nash found their logical reasoning as persuasive as messages from extraterrestrials? It is a more moderate problem than the related extreme Cartesian Problem of Madness which C. Wright uses as part of the motivation for his proposal for the appeal to indispensability.

In a discussion at Tim Williamson’s lecture in Dubrovnik (in the summer of 2009) he formulated an interesting point against The Beautiful Mind Problem: if you concede this much to the skeptic and you let the problem in, it will never get out! However, The Beautiful Mind Problem is not as global as the Madness problem, although the skeptic might try a slippery slope ascent from the former to the latter. Instead, the former merely explores and exploits our occasional doubts that are neither pathological nor, to my mind exaggerated. And we don’t have to convince the extreme skeptic, just come up with reasons we find good enough for trusting our reasoning faculties and strategies. So, we can uphold

- (0) Logical practice and beliefs stand in need of entitlement and justification.

We now pass to the next two premises, that contains the main point of the first part of our argument, stages (0)–(3), namely the one about indispensability. We shall discuss (1) and (2) together.

- (1) Simple rules of logic are indispensable for humans.
- (2) They are indispensable for our thinking, and for any sort of cognitive projects we might engage in.

So let me comment on (1) and (2) and summarize the extant arguments for them.

Let me start from what we might dub The Constitutiveness Argument, or Constitutiveness variant of the Indispensability Argument, as stated by Boghossian in his “Knowledge of logic” and developed in the recent book (2008). Then we shall pass to C. Wright’s Global Indispensability argument (2004) (the name for the argument is ours!). Boghossian’s proposal develops around the idea that logic can be justified in a rule-circular manner, due to its indispensability for thinking almost any contents whatsoever. Without dispositions to reason in accordance with logic, we could not even have the general belief whose justification is supposed to be in question, i.e. the belief about inferential potentials of a given logical constant. In a nutshell, the argument can be reconstructed as follows:

Certain of our inferential dispositions fix what we mean by our logical words (in the language of thought), therefore
 without those dispositions there is nothing about whose justification we can even intelligibly raise a question.
 Moreover, without those dispositions we could not even have the general belief whose justification is supposed to be in question. Therefore
 We are entitled to act on those inferential dispositions prior to, and independently of, having supplied an explicit justification for the general claim that they are truth-preserving.

Here is the brief background story. The chapter “Epistemic Analyticity: A Defense”, of Boghossian’s (2008) book, starts with a piece of self-criticism: “at the time of writing that paper (i.e. “Analyticity Reconsidered”—NM), I did not delineate sufficiently clearly the difference between inferential and constitutive construals of the relation between meaning and entitlement” (Boghossian 2008, 225). The distinction is crucial for the author’s more recent work. Boghossian notes that the Implicit Definition Template involves a lot of inferring that already uses logic. So this premise-and-derivation model can neither entitle the reasoner to the crucial premise (3), i.e. that $S(f)$ is true, nor explain what her entitlement to reason according to certain deductive rules consists in, since the entitlement presupposes such reasoning. We therefore need a contrasting model, and its crucial point is that the mere fact that the thinker grasps S ’s meaning entails that the thinker is justified in holding S to be true. (The epistemological consequences of the proposal are then developed in the next chapter, “How are objective epistemic reasons possible?”.) Take conditionals. If I don’t follow

Modus Ponendo Ponens (MPP), I can't have if-thoughts at all. So, if I do follow it, with p and 'if p then q ' as my premises, I cannot be blamed, so, I am entitled to follow it.

If inferring from those premises to that conclusion is required if I am to have the ingredient propositions, then, as a matter of metaphysical necessity, I cannot so much as consider the question whether the inference is justified without being disposed to reason in that way. Under those circumstances, then, it looks as though inferring according to MPP cannot be held against me, even if the inference is, as I shall put it, blind—unsupported by any positive warrant (Boghossian 2008, 230).

The chapter concludes by stressing that according to the “Constitutive model” the most fundamental relation between grasp of meaning and entitlement occurs when a thinker is entitled to reason in accordance with a certain rule simply by virtue of the fact that this rule is constitutive of a concept of his. The author expresses his hope that the model can be extended from reasoning to beliefs, if they are similarly constitutive of the possession of a concept (which has to be non-defective—we shall come to this in a moment). He proposes that this will solve the issue, famously raised by Aristotle (in *Metaphysics* Γ), about our entitlement to accept the principle of non-contradiction.

Boghossian has been developing the first line, on meaning-constitutiveness as the main *a priori* justifier, combined in his “Knowledge of Logic” with occasional remarks on compellingness, i.e. on the alleged fact that “it is not open to us to regard our fundamental logical beliefs as unjustifiable.” (Boghossian and Peacocke 2000, 253) For instance, in the same paper Boghossian argues for the warrantedness of logical rules mainly based on negative compulsion, i.e. from deeply felt unacceptability and inconceivability. He does not offer any causal or psychological explanation of compulsion, which is, after all, a felt item. Here is the relevant quote:

[W]e cannot accept the claim that we have no warrant whatsoever for the core logical principles. We cannot conceive what such a warrant could consist in [...] if not in some sort of inference using those very core logical principles.

And further down:

It is not open to us to regard our fundamental logical beliefs as unjustifiable. (Boghossian 2000, 253.)

Another variant of the appeal to indispensability is the Global Indispensability Argument due to Crispin Wright. He revives the Wittgensteinian conception of hinges, generalizes it and enriches it with his own idea of “cornerstones”:

Call a proposition a cornerstone for a given region of thought just in case it would follow from a lack of warrant for it that one could not rationally claim warrant for *any* belief in the region. The best—most challenging, most interesting—sceptical paradoxes work in two steps: by (i) making a case that a certain proposition (or restricted type of proposition) that we characteristically accept is indeed such a cornerstone for a much wider class of beliefs, and then (ii) arguing that we have no warrant for it. (Wright 2004, 167-8.)

If a cognitive project is “rationally non-optional”, i.e. indispensable in rational inquiry and in deliberation, then we may rationally take for granted the original presuppositions of such a project without specific evidence in their favor. The absence of defeating information is sufficient. So, elementary logic is both unavoidable and indispensable.

None of the arguments is final, as no philosophical argument is. But all of them converge on unavoidability and indispensability. If you believe in constitutive conceptual connections, then the Constitutivity Argument might appeal to you. And if you find Wittgenstein most congenial, on some of many readings of his text, then the Global Indispensability Argument will probably convince you. So, there are good reasons to accept the claim above.

3 ONLY A GOOD PROJECT JUSTIFIES ITS MEANS

We now pass to the second part of the argument, and move on to the particular twist we want to give to it, against its apriorist reading. Let us start with

- (3) Unavoidable and indispensable tools provide entitlement/justification for projects iff the projects are themselves meaningful.

The premise encapsulates the commonsense wisdom that no justification can come from bad, impossible and/ or idiotic projects! E.g., imagine a beginner who reasons: “If we want to square the circle, we need theorem Θ ; therefore Θ .” He would be very quickly taught that the project is impossible, so the theorem needed for it cannot be justified by the need. Next, consider clearly impossible lifelong projects: I want to achieve, by exercise, the height of 12 ft, so I am rational in doing the exercise. And finally, morally bad projects also demand lots of means: if one wants to build a torture chamber, one needs electricity at the least. So, one would desire some electricity for this purpose. Does indispensability of electricity morally justify the instrumental desire? Not really.

Corine Besson has objected (at a talk in Geneva, winter 2010) that even bad projects yield some instrumental justification for their means (thanks, Corine).

It seems to me that such a justification is conditional: if the project P is a good one, *then* means M is justified. It cannot be detached, and used independently, until P is independently justified.

Let us now consider the application of this reasoning to cognitive projects. Here is a story about *Mr. Magoo*.

Mr. Magoo has a very defective cognitive apparatus. His inductive propensities are idiotic, to use politically incorrect vocabulary, his senses most often deceive him, and his “heuristics” are ridiculous. (He lives in a super-hospitable environment, but hardly manages to survive.) His idiotic inductive propensities and ridiculous “heuristics”, plus his misplaced uncritical trust in his senses are indispensable for his ever forming any belief. Therefore, he is warranted in taking them as unquestioned and unquestionable starting points.

Of course, he is not warranted, most people would say, he is just being stupid. We can derive an argument from this kind of reaction: if you don’t find Mr. Magoo’s reasoning convincing this suggests that the justification of means for a cognitive project depends on the meaningfulness of the project itself. If the project has no chances to succeed, if *it* is hopelessly flawed (in the given context), then *it* is not justified. If it is not justified, it cannot lend its justifiedness to the means, since it does not have any.

This is valid both for entitlement and would be valid for reflective justification, if Mr. Magoo were capable of producing one. He is not entitled to his propensities and heuristics, nor to his trust in his senses. And if he were able, per impossibile, to produce a piece of reflective attempt at self justification, that would fail as well.

Let us apply this “Mr. Magoo Argument” to Crispin Wright’s idea of cornerstones for a project. It seems that the acceptance of hinges and cornerstones is justified by the quality of cognitive projects they enable, and is sensitive to the chances of their success. But these chances are revealed by trying. Therefore, our best access to our own warrant involves information about the success of the relevant cognitive project. The warrant for logic is thus sensitive at least to the chances of success of our “total inquiry”, and our awareness of it depends on the information about the success. Meaningfulness is not independent of chances of success, in virtue of “ought implies can” principle.

Would this make the final justification merely pragmatic? This is a question that I have often heard at talks. When meant as a criticism, I think it rests upon confusion. The justification is instrumental, but the goal appealed to is truth, reliability or some such epistemic value, so being instrumental does not make it into a pragmatic justification in a non-epistemic, merely practical sense. “Success” here is epistemic success, not practical-pragmatic. Alternatively, if

“pragmatic” just means instrumental, then the question does not entail criticism: there is nothing wrong with a piece of belief (or cognitive habit) being justified by its contribution to the achievement of epistemic value(s). So we come to the two final steps:

- (4) Our most general cognitive project has been at least minimally successful; therefore, it is meaningful and we are justified in believing that it is, and the naïve thinker is entitled to her logical reasoning.
- (5) This justification and entitlement are to a large extent a posteriori.

Now, the success of our “total inquiry” is to a large extent an empirical matter. Therefore, our awareness of it depends, to a great extent, on empirical information. Such information is a posteriori. Consider reflective justification: how does the cognizer arrive at justified beliefs about herself being warranted? Well, partly by relying on relative success of her total project. And this reflective justification might therefore be seriously a posteriori, in a way that precludes purely a priori justification of logic.

But you need deductive logic from the start of the inquiry, and you need inductive-logical assumptions for evaluating your empirical evidence; so you can’t get rid of the a priori, the objector might argue. Not really: some assumptions may be pragmatically antecedent to a cognitive project, e.g. those that will later be classified as logical, but they are, firstly, reflectively justified by the overall success-chances of the project, and secondly, revisable in the light of some advanced stage of the project. We can thus conclude: *both first-order entitlement and reflective justification from indispensability are a posteriori*.

But aren’t we back to the old Quine-Putnam indispensability? A comparison is needed. First, the old indispensability has been presented as replacing obviousness and compellingness, and second, it was implicitly presented as first-order property of our beliefs. This has made it vulnerable to quite dangerous objections: that it bypasses well-entrenched and extremely stable traditional justifiers, that it does not correspond to the first-order intuitions of practitioners themselves (for instance, mathematicians who just accept obvious-looking moves and their results). Our proposal avoids these pitfalls: it is compatible with a prima facie role for obviousness, and it situates the appeal to success by the thinker herself into the lofty spheres of reflective self-understanding where it belongs.

4 CONCLUSION: FROM INDISPENSABILITY TO APOSTERIORITY

Much more needs to be said, but let us summarize how far we have come: unavoidable and indispensable tools provide entitlement/justification for projects if projects are themselves meaningful.¹ However, we are justified to think that our most general cognitive project is meaningful, and justified partly on the basis of its success to date; and this basis is a posteriori. There is more than just a touch of aposteriority present in the considerations of meaningfulness, and much more in our coming to know about our warrant: reflective justification based on compellingness and unavoidability is wholly a posteriori. This suggests that the justification of our intuitional armchair beliefs and practices in general is plural and structured, with a priori and a posteriori elements combined in a complex way. It seems therefore that the a priori/ a posteriori distinction is useful and to the point.

Some philosophers suggest that we instead drop the a priori/ a posteriori contrast. (A. Goldman claims that warrant is just a complex and multi-dimensional affair (1999, 48), so the contrast is misplaced. T. Williamson argues for the same conclusion in his recent (2007) book. It is a bad idea: we need to distinguish and recognize structure, rather than obscure it. For instance, the immediate justification of logical moves is certainly a priori. But the reflective justification is not. What is needed is refinement and respect for structure, not rejection of the distinction. But, if there is structure, what is the final verdict? Is justification of simple logical moves and beliefs a priori or a posteriori? A traditional principle insisted on purity of the a priori: if justification (or entitlement) contains a posteriori elements, then it is ultimately a posteriori (e.g. if it is mixed and contains one a posteriori element, it is ultimately a posteriori). So, if you accept the principle, you might talk about structured a posteriority. If not, you would merely talk about structured justification and entitlement.

To conclude and reiterate: many prominent apriorists have given up on focusing their defense of knowledge of logic on traditional internalist grounds of obviousness, self-evident character and the like. Instead, they have revived the Indispensability Argument in a sophisticated setting, appealing to entitlement and reflexive justification, hoping to cleanse the argument from its Quinean a

¹ What about primitive compulsion as an alternative? It would solve the justification problem by “ought implies can” and offers some guidance, but opens the problem of being primitively compelled to hold true sentences (and to hold correct rules) one only partially understands. Worse, it offers a competing explanation: it is not stipulation per se but its irresistible force. (In addition, it is hard to see how a set of sentences does not yield analytic propositions by merely being held true, but does yield by being irresistibly held true.) There is a possibility: retreat to anthropocentrism: well, these are *our* concepts. Irresistibility is the mark of conceptual character, and irresistibility-for-us is the mark of ownership, of being “our own” concepts. But this move is not opened to Boghossian, since it would open the door to epistemic relativism, a view he is justly combating.

posteriorist heritage. I have argued that in this very setting the Indispensability Argument brings a posteriority back, since the issue of both entitlement and of reflective justification of logical and elementary mathematical beliefs and inferential propensities is to be decided to a large extent on the basis of the global successfulness of our cognitive effort, which is largely an a posteriori matter. To a significant degree, logic and elementary mathematical understanding are reflectively justified in an a posteriori manner. This should prompt us to opt for a more structured view of justification, containing essentially a posteriori elements, but in a different form than in the Quinean tradition.*

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* I wish to thank the organizers of ELTE conference, and the participants in the discussion.