Is Logic Normative?

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1. Introduction

Though it is hardly uncontroversial, the thesis that logic is normative enjoys widespread agreement—probably just about as much agreement as one is ever likely to find in philosophy.[1] There is far less agreement, however, on what exactly this thesis amounts to. To begin with, proponents of the thesis can't seem to agree on whether the normative authority of logic is *robust* or *weak*.[2] If logic is robustly normative, it has a normative authority that is independent of our attitudes or conventions; if it is weakly normative, it has a normative authority that is entirely dependent on our attitudes or conventions. This fundamental disagreement about the normative authority of logic seems to leave little room for any point of agreement among the proponents of the thesis. Furthermore, some opponents of the thesis allow that logic is "entangled" with the normative to the extent that it has normative consequences that are instrumental to the achievement of our wider goals (Russell 2017). This makes it difficult to discern

[1] Proponents of the thesis include Ayer 1946; Ayer et al. 1936; Carnap [1937] 2001; Beall & Restall 2006; Caret 2016; Frege [1897] 1997; Field 2009a; 2009b; 2009c; 2015; Kant [1800] 1974; Keefe 2014; Pettigrew 2017; Priest, 1979; Railton 2000; Read 2006; Sainsbury 2002; Steinberger 2017b, 2019; Warren 2020; Woods 2023. Opponents include Harman 1986, Russell 2017, and Pigden and Olsen, ms.

[2] Though the issue is not always taken up explicitly, those who seem to hold that logic is robustly normative include Frege [1897]1997 and Kant [1800] 1974. Those who hold that logic is merely weakly normative include Ayer 1946; Carnap [1937] 2001; Field 2009a, 2009b, 2009c, 2015; Warren 2020; and Woods 2023.

any daylight between the views of those who hold that logic is not normative and those who hold that it is only weakly so.

In the next section, I will argue that the thesis that unites the proponents and excludes the opponents is that logical statements and the judgments they can be used to express—such as those concerning logical validity or logical entailment—*are* normative statements and judgments, in the sense that they analytically, semantically, or conceptually have normative consequences. In section 3, I will critically assess whether logical statements and judgments are indeed normative in this sense. I will consider the prospects of various accounts of what the normative consequences of logical statements or judgments might be, and find them all to be wanting. This, I claim, gives us good reason to deny that logic is normative.

2. What is at issue?

To discover what is fundamentally at issue in debates about the normativity of logic, it will be helpful to consider the fault lines and alliances among the various parties to the debate.

First, there is the "absolutist" view, handed down from Frege and Kant, according to which logic is robustly normative. Kant, for instance, characterized logic as consisting of "the absolutely necessary rules of thought" (A52/B76), which instruct us not "how the understanding is and thinks" but "how it *ought* to proceed" (Kant 1800/1974, 16; quoted in Steinberger 2017a). Frege, in a similar vein, says the following:

> Just as 'beautiful' points the way for aesthetics and 'good' for ethics, so do words like 'true' for logic…When we speak of moral or civil laws, we mean [meinen] prescriptions, which ought to be obeyed but with which actual occurrences are not always in conformity. Laws of nature are general features of what happens in nature, and occurrences in nature are always in accordance with them. It is rather in this sense that I speak of laws of truth. Here of course it is not a matter of what happens but of what is. From the laws of truth there follow prescriptions about asserting, thinking, judging, inferring. (Frege 1918/1997, 325)

As I read this passage, Frege favourably compares logic to the paradigmatically normative disciplines of ethics and aesthetics. He goes on to consider whether logical laws—the laws of truth—resemble more closely the laws of physics or the laws of morality. His answer is that they are a bit like both.[3] On the one hand, the laws of truth resemble the laws of physics in being objective, albeit "not a matter of what happens, but of what is." On the other hand, the laws of truth resemble moral laws in giving rise to "prescriptions about asserting, thinking, judging, inferring." Elsewhere, Frege describes logic as "a normative science", the aim of which is to prescribe "rules for our thinking and for our holding something to be true" (Frege, 1897/1997, 228). In a nutshell, absolutists hold that there is one true logic that reflects the normative *facts* regarding how we ought to think or reason.

In the early part of the 20th century, logical conventionalists repudiated the absolutist conception of logic as unscientific (Ayer 1946; Ayer et al. 1936; Carnap [1937] 2001). Yet, they nonetheless held on to the view that logic is normative. They sought to naturalize the normativity of logic by casting it as a product of our practices, as more like the laws of the state than the laws of nature. Ayer puts the point as follows:

> …what are called a priori propositions do not describe how words are actually used but merely prescribe how words are to be used. They make no statement whose truth can be accepted or denied. They merely lay down a rule which can be followed or disobeyed. Their necessity then, we must say, consists in the fact that it does not makes sense to deny them. If we reject them we are merely adopting another usage from that which they prescribe. (Ayer et al. 1936, p. 20)

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[3] Glüer and Wikforss (2009, 65) take this passage from Frege to show that he held that logic is not normative. As they see it, Frege distinguishes the laws of logic from *both* the laws of nature and the laws of the state, treating the laws of truth as *sui generis*. However, this reading of Frege does not explain the final sentence quoted above, in which he says "from the laws of truth there follow prescriptions," nor does it explain why he says: "Just as 'beautiful' points the way for aesthetics and 'good' for ethics, so do words like 'true' for logic" (Frege 1918/1997, 325). I am grateful to Alex Miller for discussion on this point.

Moreover, Ayer goes on to say that the choice of a logic is in a sense arbitrary, since we could have chosen to adopt different conventions (Ayer et al. 1936, 21). Carnap echoes both Ayer's claim that the logical laws are in a sense up to us, and that this allows for a plurality of logical systems, since there are no normative, logical facts to be discovered:

> *In logic there are no morals*. Everyone is at liberty to build his own logic, i.e. his own language, as he wishes. All that is required of him is that, if he wishes to discuss it, he must state his methods clearly, and give syntactical rules instead of philosophical arguments. (Carnap [1937] 2001, §17)

In saying that "there are no morals" in logic, I take Carnap to be denying the absolutist view that there are normative facts regarding how we ought to or are permitted to reason, and in saying that we should "give syntactical rules," he is implicitly committing to the weak normativity of logic. After all, rules tell us what we ought to or are permitted to do. Contemporary conventionalists similarly view the adoption of a logic as fundamentally the adoption of a system of normative, logico-linguistic rules governing our use of logical terms (cf. Warren 2020; Woods 2023). Other scientifically minded philosophers have similarly endorsed the view that logic is weakly normative (cf. Field 2009a, 2009b, 2009c, 2015).

At first blush, these two approaches to the normativity of logic seem to be too different to share a common core. Indeed, some debates about the normativity of logic concern the question whether logic is robustly normative, on which these two approaches disagree. However, there is a point of agreement between them: both are committed to the view that logical *statements* and *judgments* are normative. For instance, in the passages quoted above, Ayer says that "a priori propositions," including logical ones, "prescribe how words are to be used'," while Carnap encourages logicians to "give syntactical rules instead of philosophical arguments." Kant takes logic to consist in the "rules of thought," while Frege claims from logic "there follow prescriptions about asserting, thinking, judging, inferring." More recently, Field (2009a, 2009b, 2015) has argued that logic is normative in the sense that the concept of logical validity has a normative *role*, which cashes out as a policy regarding the formation and maintenance of

belief (Field 2015). Specifically, on this view, *what it is* to judge that an inference is valid is to have a policy of not believing the premises of the inference without believing its conclusion.

Critics of the thesis that logic is normative often point out you could read a whole textbook on logic without coming across paradigmatic normative terms such as "ought," or "may" anywhere (cf. Harman 1986). A logic is essentially a specification of a consequence relation on a set of truth bearers, so the core of a logic consists of statements of the following form, where $\vDash$ is a consequence relation, and P_1, …, P_n are the premises of an argument of which *C* is its conclusion:

(1) $P_1, \ldots, P_n \vDash C$.

Notably, there are no paradigmatic normative terms in statements of the form of (1). Statements of this form do not explicitly say anything about what one ought to do. Informally, logical statements include the following (with the key logical terms in italics):

(2) The Law of Excluded Middle is *valid*.

(3) "All ravens are black" *entails* "Ravi the raven is black."

(4) If the coin is either in the left hand or in the right hand, and the coin is not in the left hand, it *follows* that the coin is in the right hand.

Once again, none of these statements seem to be explicitly normative.

Now, it is highly unlikely that this point was lost on any of the proponents of the thesis that logic is normative. So, what could they have meant? Frege gives us a clue in the passage quoted above, when he says that prescriptions "follow" from the laws of truth, suggesting that logical statements are normative in virtue of having *normative consequences*. Similarly, it is possible to view proponents of the view that logic is weakly normative, such as Ayer, Carnap, and Field, as claiming that the concept of logical validity is a *thick normative concept*, much like "courage" or "greed," in that it has both a

descriptive content and a normative one.[4] On this view, an assertion of (3), for instance, would express a normative content, such as a policy not to believe "All ravens are black" while not believing "Ravi the raven is black." Thus, it seems plausible that what unites the proponents of the thesis that logic is normative is that logical statements and judgments have normative consequences.

However, this thesis does not exclude opponents of the normativity of logic. For instance, Russell (2017, 380), who holds that logic is purely descriptive, maintains that logic may be entangled with the normative to the extent that logical statements have normative consequences in conjunction with other normative statements, such as the statement that one ought to have only true beliefs, or that one ought to avoid reasoning to false conclusions. In light of this, Russell takes proponents of the thesis that logic is normative to be minimally committed to the claim that logical statements and judgments have normative consequences *all on their own* (Russell 2017, 379). But if logical statements and judgments have normative consequences all on their own, then these consequences must in some sense be analytic, semantic or conceptual. Indeed, many proponents of the normativity of logic explicitly commit to the analyticity of logical rules. According to conventionalists, the rules of a logic are thought to be analytic in the sense that they constitute the meanings of the logical constants and determine which inferences are valid (Ayer 1946; Carnap [1937] 2001; Warren 2020). Beall and Restall (2006) only count as admissible those precisifications

[4] Note that Field (2015, 55) claims that it would "sully the purity of logic to define validity in normative terms whose exact content is less than clear". Perhaps what he is expressing here is opposition to the *analysis* of the concept of validity in normative terms. After all, he very clearly accepts that validity has a normative *conceptual role*. For instance, he spells out the "conceptual role" of the concept of validity as follows: "To regard an inference or argument as valid is (in large part anyway) to accept a constraint on belief: One that prohibits fully believing its premises without fully believing its conclusion" (Field 2015, 42). Moreover, it is plausible that the concept of validity derives normative content from its normative role. If to regard an inference as valid *is* to accept a normative constraint on belief, then it is plausible that the concept of validity inherits the content of the constraint.

of "valid" that are formal, necessary, and normative. On this view, the normative consequences of judgments of validity are semantic or conceptual since they constrain which concepts count as concepts of validity. Thus, I understand the thesis that logic is normative to be the following:

> THE NORMATIVITY OF LOGIC (NL): Logical statements and judgments analytically entail normative consequences.

In the next section, I will test the plausibility of NL.

3. Are logical statements or judgments normative?

What might be the analytic normative consequences of our logical statements or judgments? This question may seem difficult to answer, given the large class of possible normative consequences our logical statements might have. However, it can be made more tractable by appeal to MacFarlane's (2004) taxonomy and nomenclature for normative bridge principles (cf. Steinberger 2016). These principles can be distinguished along several dimensions, as follows.

As I suggested above, I take the basic form of logical statements to be $P_1, \ldots, P_n \vDash C$. Now, let Φ be a normative operator (such as ought, may, or reason), $\mathbf{A}$ be an attitude operator (most commonly belief), and $\Phi(\mathbf{A}(P_1),\ldots,\mathbf{A}(P_n), \mathbf{A}(C))$ be a normative statement of some kind concerning changes of attitude (cf. Harman 1986; MacFarlane 2004; Steinberger 2016, 2017a). Then logical statements must have normative consequences of the following form:[5]

$$\Phi(\mathbf{A}(P_1), \ldots, \mathbf{A}(P_n), \mathbf{A}(C)).$$

For instance, if we let $\mathbf{A}$ stand for belief, and the normative operator to be "ought," we get the following bridge principle, where $\rightarrow$ stands for analytic, semantic or conceptual entailment:

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[5] I am focusing here on the thought that logic is normative for theoretical reasoning, understood as reasoned changes in belief. This is by far the most common view of what logic is normative for among proponents of the normativity of logic (cf. Field 2009, Steinberger 2019). Some hold that logic is normative for our discursive practices (Dutilh-Novaes 2015), but I will set this view aside here.

$P_1, \ldots, P_n \vDash C$ → If *S* believes each of $P_1, \ldots, P_n$, then *S* ought to believe *C*.

Normative Operators: MacFarlane distinguishes between bridge principles which differ with respect to the deontic operators involved—ought (o), permission (p), or reason (r). For instance, (p) is a permissive principle, and (r) is a reason-involving principle:

(p) ($P_1, \ldots, P_n \vDash C$) → if *S* believes $P_1, \ldots, P_n$ then *S may* believe *C*.

(r) ($P_1, \ldots, P_n \vDash C$) → if *S* believes $P_1, \ldots, P_n$ then *S has a reason* believe *C*.

If the category of the normative is broadly construed, we might want to consider evaluative operators, such as "good" (g) and aretaic operators, such as "virtuous" (v) as well:

(g) ($P_1, \ldots, P_n \vDash C$) → if *S* believes $P_1, \ldots, P_n$ then it is good that *S* believes *C*.

(v) ($P_1, \ldots, P_n \vDash C$) → if *S* believes $P_1, \ldots, P_n$ then it is virtuous for *S* to believe *C*.

Scope: Bridge principles may differ with respect to the scope of the deontic operators, which can be narrow (C), Wide (W), or Distributed (D). For instance (Co) is a principle that involves the ought operator "o", and takes narrow scope, "C," while (Wp) takes wide scope and has the permissibility operator, and (Dr) employs the reason operator which is distributed over the conditional:

(Co) ($P_1, \ldots, P_n \vDash C$) → If *S* believes $P_1, \ldots, P_n$ then *S* ought to believe *C*.

(Wp) ($P_1, \ldots, P_n \vDash C$) → It may be the case that: if *S* believes $P_1, \ldots, P_n$ then *S* believes *C*.

(Dr) ($P_1, \ldots, P_n \vDash C$) → If *S* has a reason to believe $P_1, \ldots, P_n$ then *S* has a reason to believe *C*.

Polarity: Finally, bridge principles may differ with respect to the polarity of the belief in *C*.

Positive polarity (+). One ought to/may/has a reason to *believe C*.

> **Negative polarity (–).** One ought to/may/has a reason *not to disbelieve C.*

For instance, all of the above examples have had positive polarity. In contrast, (Wo–) takes wide scope over the ought operator and has a negative polarity.

> **(Wo–)** (P_1, …, $P_n \vDash C$) → It ought to be the case that: if *S* believes P_1, …, P_n then *S does not disbelieve C.*

I have argued previously that logical rules cannot be adopted (Hattiangadi 2023), following Kripke (forthcoming). This argument calls into question the very thought that such rules could play the kind of role in determining the meanings of logical terms that conventionalists suggest. Here, I set aside the question of whether it even makes sense to treat rules or norms as analytic of logical statements or judgments and ask whether any bridge principle can be plausibly thought of as analytic. We can test whether a bridge principle is indeed analytic by asking whether anyone who grasps the concept of logical validity or understands the meaning of the term "entails" can sensibly be viewed as having the normative commitments it attributes. I will argue that no bridge principle passes this test, so no principle can be plausibly viewed as analytic of logical statements or judgments.

3.1 Narrow scope

First, consider the class of narrow scope principles, such as (Co+):

> **(Co+)** (P_1, …, $P_n \vDash C$) → if *S* believes P_1, …, P_n then *S* ought to believe *C.*

Now, is it possible for someone who is fully competent with the concept of logical validity to accept an instance of the antecedent while rejecting the relevant instance of the consequent? Using this test, it is clear, for familiar reasons, that (Co+) does not characterise the normative consequences analytically entailed by logical judgments, since philosophers who are fully competent with the concept of logical validity, and who accept that some argument from P_1, …, P_n to *C* is valid, have found sensible grounds to deny that if one be-

lieves $P_1, \ldots, P_n$, then one ought to believe C. For instance, consider Harman's (1986) much discussed "clutter" objection to (Co+): if applied to the rule of Disjunction Introduction ($P \vDash P \vee Q$), (Co+) entails that if one believes P, then one ought to believe P *or* Q for arbitrary Q. Yet, P *or* Q may be a junk belief, of no intrinsic interest, or it may be entirely irrelevant to any of one's practical pursuits. Indeed, (Co+) applied to $P \vDash P \vee Q$ entails an infinite chain of obligations: if one believes P, then one ought to believe P *or* Q, and if one believes P *or* Q, one ought to believe (P *or* Q) *or* R, and if one believes (P *or* Q) *or* R, one ought to believe (P *or* Q *or* R) *or* S, and so on, *ad infinitum*. Moreover, some propositions, such as infinite disjunctions or conjunctions, are so complex that it is not humanly possible to believe them. Yet, if one believes that P, (Co+) entails that one ought to believe P *or* Q even for unbelievable Q. If ought implies can, (Co+) is false.

There are of course various ways to respond to Harman's objection. For instance, one might distinguish between explicit and implicit beliefs, where implicit beliefs are merely dispositions to believe (Field 2009b). (Co+) may not seem to be implausibly demanding if it tells you that if you believe P you must be *disposed* to believe P *or* Q.[6] However, our question here is not so much whether (Co+) is *true*, but whether it is analytic; that is, whether anyone who grasps the concept of logical validity must accept (Co+). And it is clear that (Co+) is not analytic. Harman himself is a case in point: *he* accepts the validity of arguments from P to $P \vee Q$, yet denies that if one believes P, one ought to believe P *or* Q. Since Harman is presumably fully competent with the concept of logical validity, (Co+) is not conceptually necessary.

Another example of a philosopher competent with the concept of logical validity, yet who denies (Co+), is John Broome (2013). One of his many objections to (Co+) is the "bootstrapping worry": given that $P \vDash P$, (Co+) entails that if one *does* believe that P, then one *ought* to believe that P. If one

[6] This response has limitations as well, particularly in the face of propositions that are too complex to be believed. If implicit belief is understood in dispositional terms—as the disposition to have the occurrent belief—then if $P \vee Q$ cannot be occurrently believed (for some unbelievable Q), it cannot be implicitly believed either.

does believe that the number of stars is even, (Co+) entails that one *ought* to believe that the number of stars is even; if one *does* believe that 2+2=5, (Co+) entails that one *ought* to believe that 2+2=5. Yet, one ought to believe no such things, whether or not one already believes them. Once again, this calls the analyticity of (Co+) into question. In this case, Broome is a case in point. *He* accepts that $P \vDash P$, but does not accept that one ought to believe whatever one does believe. Since he is presumably fully competent with the concept of logical validity, (Co+) is not conceptually necessary.

Third, consider the classical principle of Explosion, (EXP) $P \wedge \sim P \vDash Q$, which states that an inconsistent set of premises entails everything. Applied to EXP, (Co+) entails that if you have contradictory beliefs, you ought to believe everything, which is patently absurd. Indeed, paraconsistent logicians have pointed to this consequence to argue that EXP should be rejected (cf. Priest 1979). However, the absurdity of this consequence suggests more strongly still that (Co+) is not conceptually necessary. That is, it is possible for someone to be fully competent with the concept of logical validity, and to accept EXP while quite sensibly denying that if one just happens to have contradictory beliefs, one ought to believe everything. It is implausible that all classical logicians are conceptually confused.[7] All of this suggests that (Co+) does not capture the normative role of the concept of logical validity.

Moreover, the foregoing considerations tell against the analyticity of all narrow scope principles. Just as one might sensibly accept that $P \vDash P$, yet deny that your believing P entails that you ought to believe P, it would be sensible to accept that $P \vDash P$ yet deny that your believing P implies that you are *permitted* to believe P, have a *reason* to believe P, that it is *good* to believe P, or that believing P is what an epistemically virtuous agent would do. Warren (2020, 4.VII), for in-

[7] Priest (1979, 297) charges logicians who accept EXP with a kind of conceptual deficiency. However, it is far more plausible that the concept of logical validity does not have (Co+) as an analytic normative consequence, than that all classical logicians are incompetent with the concept of logical validity. For objections to Priest's argument against classical logic, which assumes the normativity of logic as a premise, see Musgrave (2020) and Steinberger (2016).

stance, suggests that if one accepts the premises of an argument one takes to be valid, this gives one some justification, or some reason for accepting the conclusion. However, this does not seem to give a satisfactory solution to the problem of bootstrapping, since it allows that merely accepting P gives one some justification or reason to accept P, which is implausible, and something Broome would likely deny. The application to EXP is similarly problematic, since it is far from obvious that accepting a contradiction gives one even a modicum of justification, or even a defeasible reason, for believing anything whatsoever. Thus, it would be sensible for a proponent of classical logic to accept the validity of EXP while denying that acceptance of a contradiction provides any justification at all for believing everything.

This goes for bridge principles of negative polarity as well. One might sensibly accept that $P \vDash P$ yet deny that the fact that you believe P entails that you ought not to, are not permitted to, or have no reason to disbelieve P. Each of these narrow scope principles could be sensibly rejected by someone who accepts classical logic without indicating incompetence with or incomplete grasp of the concept of validity.

3.2 Wide scope

Next consider the class of wide scope principles, such as (Wo+):

> **(Wo+)**: (P_1, …, $P_n \vDash C$) → It ought to be the case that: if S believes P_1, …, P_n then S believes C.

Unlike (Co+), (Wo+) seems more promising, since it does not entail that if you *do* believe the premises of a valid argument, then you ought to believe its conclusion. Rather, it entails that you have a conditional obligation to combine believing the premises of a valid argument with believing its conclusion. This wide scope requirement can be satisfied in two ways: either you can satisfy it by both believing the premises of a valid argument and believing its conclusion, or you can satisfy it by not believing one of the premises. For this reason, (Wo+) seems to do better with respect to the bootstrapping worry, since it only entails that you ought to combine believ-

ing P with believing P, which is perhaps redundant, but not obviously false.

However, it is not entirely clear that (Wo+) helps with the clutter objection. Here is one reason why. Suppose that you believe P and accept that $P \vDash P \vee Q$. If (Wo+) is analytic or conceptually necessary, then on pain of incoherence, you must accept that you ought either to not believe anything at all, or to believe all of the logical consequences of your beliefs. Given the implausibility of this normative judgment, it seems that it is possible to sensibly deny it, while still accepting Disjunction Introduction (cf. Broome 2013).

What about the explosion objection? One might think that, on the face of it, (Wo+) deals with it well. (Wo+) applied to EXP can be stated as follows:

> **(Wo+$_{\text{EXP}}$)** $(P \wedge \sim P \vDash Q) \rightarrow$ It ought to be the case that (if one believes both P and $\sim P$, then one believes Q).

(Wo+$_{\text{EXP}}$) does not entail that if you believe both P and $\sim P$, you ought to believe Q. Rather, it only entails that you ought to make sure that you don't *combine* believing both P and $\sim P$ with disbelieving Q. And this might not seem to be so bad, because you can satisfy this normative requirement by either giving up your belief that P or by giving up your belief that $\sim P$. You don't *have* to satisfy it by coming to believe Q.

Nevertheless, (Wo+$_{\text{EXP}}$) is not plausibly analytic, since it too can be sensibly denied without indicating conceptual confusion. First, notice that though believing everything is not the only way to satisfy (Wo+$_{\text{EXP}}$), it is one way to satisfy it. Thus, there is a sense in which (Wo+$_{\text{EXP}}$) assigns a *positive normative status* to your believing everything. Viewed in synchronic terms, it deems a cognitive system that contains a belief in every proposition and its negation to be normatively ideal. Viewed in diachronic terms, if you discover that you have contradictory beliefs, and then form the belief that snakes ride bicycles, (Wo+$_{\text{EXP}}$) applauds your inference: it entails that you have done *something* that you ought to do. Of course, in adding one arbitrary belief, you have not done everything that you ought to do, since given that you have contradictory beliefs, (Wo+$_{\text{EXP}}$) entails that you ought to either give one of them up or come to believe everything, but by coming to form one arbitrary additional belief, you have

come one step closer to believing everything; you have done a *part* of what you ought to do, and thus have done something laudable by the lights of (Wo+$_{EXP}$). This in itself constitutes sensible grounds to deny (Wo+$_{EXP}$).

One might attempt to respond to these worries by appeal to the Law of Non-Contradiction, $\sim(P \wedge \sim P)$ (Field 2009b). A logician who accepts this law will judge that it is never the case that one ought to believe both P and $\sim P$. If this is taken together with EXP, then the two normative principles together entail that the only permissible way to satisfy (Wo+$_{EXP}$) is by ceasing to have contradictory beliefs. However, this response does not address the basic point here. Even if you accept the Law of Non-Contradiction, insofar as you still accept (Wo+$_{EXP}$), you assign *some* positive normative status to believing P, $\sim P$ and Q. And this in itself constitutes sensible grounds for rejecting (Wo+$_{EXP}$).

Moreover, there is a further difficulty with treating (Wo+$_{EXP}$) as analytic that is untouched by the appeal to the Law of Non-Contradiction. The difficulty is this: there are some rules of deontic logic, which would permit one, under certain conditions, to infer that one ought to believe Q, given that one believes both P and $\sim P$. These rules may be controversial, but accepting them seems at least to be compatible with having a full grasp of the concept of logical validity. For instance, Sven Danielsson (2005), who we can presume is competent with the concept of logical validity, put forward the following principle, where O is the deontic operator "ought, " the subscript "i" is an index to a time, X and Y are acts, and N is a modal operator such that NX means that X is inevitable, either because it has actually occurred, or because the option whether to do X is for one reason or the other not open to the agent:

Detachment. $O_i(X \rightarrow Y) \wedge N_i(X) \vDash O_i(Y)$.

If (Wo+$_{EXP}$) captures the normative commitments of someone who accepts EXP, then someone like Danielsson, who also accepts Detachment, is committed to judging that at least in those circumstances in which it is inevitable that one has contradictory beliefs, one ought to believe Q, for arbitrary Q. Moreover, it seems plausible that there *are* circumstances in which it is inevitable that one has contradictory beliefs. For

instance, one might arrive at inconsistent beliefs as a result of complex reasoning in separate contexts, and one might not have noticed the inconsistency because the inconsistent systems of beliefs have not been brought together. If one is not aware of an inconsistency, or perhaps cannot be made aware of it due to the complexity of each belief system, then there is a sense in which eliminating the inconsistent beliefs is not really an option. Or perhaps one discovers that one has inconsistent beliefs but finds that each belief is so well-supported by the evidence that it is difficult to know which one to give up. In such a situation it seems as though having inconsistent beliefs is in a certain sense inevitable, at least for the period of time during which one does not know which belief to give up. In both of these kinds of situations, Detachment together with (Wo+$_{\text{EXP}}$) entail that one ought believe Q, for arbitrary Q—which Danielsson would quite sensibly deny. Thus, it seems to be possible to be fully competent with the concept of logical validity without accepting (Wo+$_{\text{EXP}}$), so (Wo+$_{\text{EXP}}$) is not analytic of the concept of logical validity.

Do similar difficulties arise for wide scope principles involving different normative operators? Consider, for instance, the following alternatives:

(Wp+$_{\text{EXP}}$) $(P \wedge \sim P \vDash Q) \rightarrow$ It is permitted that (if one believes both P and $\sim P$, then one believes Q).

(Wr+$_{\text{EXP}}$) $(P \wedge \sim P \vDash Q) \rightarrow$ There is a reason that (if one believes both P and $\sim P$, then one believes Q).

The foregoing difficulties carry over to these principles too, since both of them assign a positive normative status to simultaneously believing P, $\sim P$ and Q, for arbitrary Q: the first entails that this state is permissible, while the other entails that one has a reason to be in it. Yet, both entailments might sensibly be rejected by someone who accepts EXP.

Wide scope principles with negative polarity, on the other hand, seem to be non-starters. For instance, consider (Wo–$_{\text{EXP}}$):

(Wo–$_{\text{EXP}}$) $(P \wedge \sim P \vDash Q) \rightarrow$ It ought to be the case that (if one believes both P and $\sim P$, then one does not disbelieve Q).

Intuitively, EXP entails that from a contradiction, anything follows. Yet, if we understand disbelieving Q to be equivalent to believing $\sim Q$, (Wo–$_{EXP}$) entails that one way to satisfy (Wo–$_{EXP}$) is to believe P, believe $\sim P$, and not believe $\sim Q$, though $\sim Q$ is just as much a consequence of $P \wedge \sim P$ as Q.

3.3 Distributed

Perhaps distributed norms do better with respect to EXP. For instance, consider (Do+) applied to EXP:

> **(Do+$_{EXP}$)** $(P \wedge \sim P \vDash Q) \rightarrow$ If S ought to believe P, and S ought to believe $\sim P$, then S ought to believe Q.

On the face of it, (Do+$_{EXP}$) seems more plausible than the previous principles, since it entails that you ought to believe Q only if you *ought* to believe both P and $\sim P$. And it might be argued that there are *never* circumstances in which you ought to both believe P and believe $\sim P$. As a consequence, acceptance of this normative principle will never commit you to accepting that you ought to believe anything whatsoever.

However, the assumption that there are never circumstances in which you ought to have contradictory beliefs is questionable. An obvious way to put pressure on it is by appeal to the Preface Paradox (cf. Steinberger 2016). Suppose that Sita has written a book about birds. She has researched it very carefully, and has good evidence for each of the statements that she makes in the book. Let P be the conjunction of these statements. On evidential grounds, it seems that Sita ought to believe P. Yet, Sita is also rightly aware of her own fallibility. Since it is a very long book, she has excellent reason to think that at least one of the statements in it is false. Indeed, if she has very good evidence of her own fallibility, Sita arguably *ought* to think this; she ought to think that $\sim P$. In such a context, acceptance of (Do+$_{EXP}$) entails that Sita ought to believe everything.

It might be objected that this is not the correct account of the Preface Paradox. Perhaps it will be argued that though Sita ought to believe each of the statements in the book, she ought not to believe their conjunction. This is certainly one prominent response to the paradox (cf. Kyburg 1961). However, the question we are considering here does not concern

the best way to resolve the Preface Paradox, but the question of whether (Do+$_{EXP}$) captures the normative commitments one must have in order to accept EXP, with full grasp the concept of logical validity. Moreover, there are logicians who are fully competent with the concept of logical validity, and who accept not only EXP but also Agglomeration ($P, Q \vDash P \wedge Q$). If grasp of the concept of logical validity gives rise to a distributed normative commitment such as (Do+), anyone who grasps the concept of validity and accepts Agglomeration, is committed to the following:

> **(Do+$_{CI}$)** ($P, Q \vDash P \wedge Q$) → If S ought to believe P, and S ought to believe Q, then S ought to believe $P \wedge Q$.

From (Do+$_{CI}$), it follows that anyone who accepts Agglomeration and who grasps the concept of logical validity must judge that Sita ought to believe the conjunction of all the statements in her book, given that she ought to believe each one individually. Thus, someone who accepts both EXP and Agglomeration is committed to saying that Sita ought to believe anything whatsoever, given that she ought to believe both the conjunction of statements in her book, and that at least one of them is false. Yet, this normative claim can be sensibly denied; so (Do+) is not conceptually necessary.

Once again, the same line of reasoning holds for all of the other distributed principles. Consider, for instance, the principle that states that if you have reason to believe the premises of a valid argument, you have reason to accept the conclusion, which Steinberger suggests may help with the preface paradox (Steinberger 2019, 25):

> **(Dr+$_{CI}$)** ($P, Q \vDash P \wedge Q$) → If S has reason to believe both P and Q, then S has reason to believe $P \wedge Q$.

However, while this seems to be plausible as a normative consequence of Agglomeration, even in the face of the preface paradox, it does not obviously capture the analytic consequences of accepting EXP:

> **(Dr+$_{EXP}$)** ($P \wedge \sim P \vDash Q$) → If S has reason to believe P, and reason to believe $\sim P$, then S has reason to believe Q.

A classical logician who accepts EXP can coherently do so while quite sensibly rejecting the normative consequences as

postulated by (Dr+). If one has a mixed bag of evidence, some of which supports P, and some of which supports $\sim P$, one arguably has reason to believe P, and reason to believe $\sim P$, yet no reason to believe Q, for arbitrary Q. Similarly, a classical logician can coherently accept the validity of EXP while denying that if one is permitted to believe P, and permitted to believe $\sim P$, then one is permitted to believe Q, or that it is good to believe Q, or that it would be virtuous to believe Q, and so forth.

3.4 Credence

The foregoing principles involved full belief. But it may be that the solution to the foregoing difficulties lies in formulating the normative principles in terms of degrees of belief, or credences. For instance, Field's view (at least in one of its formulations) is that the normative commitments that come along with judging an argument to be valid involves the commitment to a policy constraining on one's degrees of belief as follows:

> (VP_a): To regard the argument from P_1, ..., P_n to Q as valid is to accept a constraint on degrees of belief: one that prohibits having degrees of belief where $Cr(Q)$ is less than $\Sigma\, Cr(P_i) - n + 1$; i.e., where $Dis(Q) > \Sigma_i\, Dis(P_i)$).

Here $Dis(P) = 1 - Cr(P)$, and can be written as "your disbelief in P." Field's principle, simply put, says that if you regard an argument as valid, you should not be less certain of the conclusion than you are of the premises taken together. Note that Field's principle does not contain any deontic operators, and does not make it clear whether the implicit deontic operators should be assumed to take wide scope, narrow scope, or to be distributed over the conditional. Let us suppose that he endorses the distributed, ought principle (Do+), which when stated in Field's terms can be understood as follows:

> **(Do+$_{\text{FIELD}}$)** ($P_1, \ldots, P_n \vDash C$) $\rightarrow$ if $\Sigma_i Dis(P_i)$ ought to be n, $Dis(C)$ ought to be $\leq n$.

In other words, if someone who is competent with the concept of logical validity judges that an argument is valid, she must judge that one's disbelief in the conclusion ought not to

exceed the disbelief one ought to have in the premises. Does framing the principle in terms of credence rather than full belief help to resolve the difficulties posed by the Preface Paradox?

It might seem to. After all, Sita's evidence for any one of the statements in her book, though good, falls short of warranting certainty. And when these statements are conjoined, the uncertainties add up, to the point where Sita's rational credence in the conjunction may wind up being rather low. If the book is long, and contains many statements, then the credence Sita ought to have in the conjunction may be low enough not to count as full belief. In this context, it is not the case that Sita ought to believe the conjunction of statements in her book, and hence, even granting assumptions about human fallibility, it is not the case that Sita ought to have contradictory beliefs.

However, this response to the puzzle, though plausible, is not immune to counterexamples. Imagine that instead of writing a book about birds, Sita chose to write a book of mathematics. As it happens, every statement in her book is a necessary truth, so the credence she ought to have in each statement in her book is 1. Yet, she has excellent evidence of her own fallibility—though an accomplished mathematician, she has still caught herself making mistakes from time to time—so she has reason to believe that at least one of the statements in her book is false. In this case, the lowest credence that Sita is permitted to have in the conjunction of all the statements in her book is 1, and this must qualify as full belief. If this is in principle possible, then it is at least in principle possible to construct a case in which Sita ought to believe both P and $\sim P$. This gives us good reason to deny (Do+$_{\text{FIELD}}$). As in previous cases, this point generalizes to distributed principles involving alternative normative operators.

4. Concluding remarks

I have considered several proposals regarding the normative consequences of logical statements or judgments. Yet, none of those I have considered have a plausible claim to be analytic, since it seems possible for someone who is competent with the concept of logical validity to judge that an argument form

is valid, while rejecting the normative consequences that are purported to follow from accepting this. It is possible that there are alternatives that I have not considered. I cannot claim to have been exhaustive. However, given the range of principles I have considered, we seem to have good reason to think that NL is false, and that logical statements and judgments do not have normative consequences analytically.

One potential response to this line of objection to NL is to point out that it implicitly assumes that the normative consequences of logical statements or judgments must be systematic across all logical principles that one might take to be valid. Justification for this assumption derives from the fact that the normative consequences of logical judgments plausibly derive from the logical concepts they contain, such as the concept of logical validity or entailment. If that is so, then one should expect that the normative consequences of validity judgments remain constant, whether one thinks that EXP or Agglomeration is valid. However, a logical pluralist might be inclined to resist this assumption, and argue that the normative consequences of validity judgments vary from person to person, and that the contents or truth values of validity statements vary from context to context. Such a response would make communication and disagreement about logic well-nigh impossible, since it would imply that both the descriptive content and the normative content of logical statements would vary, leaving no shared language in which to communicate (Hattiangadi 2018b). Thus, the response comes at a significant cost. On balance, then, I conclude that there seems to be good reason to reject the view that logic is normative.

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