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Logical Mistakes, Logical Aliens, and the Laws of Kant's Pure General Logic

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Abstract

There are two ways interpreters have tended to understand the nature of the laws of Kant's pure general logic. On the first, these laws are unconditional norms for how we ought to think, and will govern anything that counts as thinking. On the second, these laws are criteria for being a thought, and violating them makes a putative thought not a thought. These traditions are in tension insofar as the first depends on the possibility of thoughts that violate these laws, and the second makes violation impossible. In this essay I develop an interpretation of Kant's pure general logic that overcomes this tension. It both accounts for the possibility of logical mistakes, as the first tradition does, while still ruling out logical aliens as an intelligible possibility, as the second tradition does.

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1   Introduction

Since at least Frege, it has been common to contrast normative and descriptive rules or laws.[1] Normative laws say how things ought to be. Moral laws are paradigmatic examples: they dictate how we *ought* to act. And even if we fail to act this way, they still govern us. Descriptive laws say how things are. Physical laws are paradigmatic examples: they dictate how physical things *are*. And if something fails to accord with them, then it is not a physical thing.

This distinction has become pervasive, and a form of it has structured the discussion over the nature of Kant's pure general logic. Interpreters like John MacFarlane (2002), Béatrice Longuenesse (2005, ch. 4), Lanier Anderson (2005), Robert Hanna (2006), and Nick Stang (2014) have defended normativist readings, where logic's laws are unconditional norms for how we ought to think, and will govern anything that counts as thinking. Hilary Putnam (1994), James Conant (1992), Clinton Tolley (2006), and Melissa Merritt (2015), have defended descriptivist—or, more properly, 'criterialist'[2]—readings, where logic's laws are criteria for being a thought, the violation of which makes a putative thought not a thought. My own reading tries to bridge the divide.[3] I argue that for Kant, while normitivists are right that the norms of pure general logic must govern both illogical and logical exercises of the understanding, criterialists are right about the peculiar necessity of logic's laws.

Before I turn to Kant, however, it is noteworthy that this interpretation may have implications for our contemporary philosophy of logic. In it there is a discussion that revolves around the very

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[1] (Frege, 1893, p. xv) & (Frege, 1918, p. 58). Of course, this distinction is prefigured in many places, one of which is Kant (e.g., A547/B575), and as Anderson (2005) nicely argues, a version of it framed the anti-psychologism debates of Frege's day. (A key for my abbreviations of Kant's works can be found at the end of the essay.)

[2] 'Criterialist' because this is the best of a few bad options. As we will see, the term 'descriptivist' is inapt for describing this tradition, because of how the laws of logic are unlike the laws of physics. And although this kind of interpretation often goes under the name 'constitutivist,' that name is also no good, since it is important to the normativist interpretation that the laws of logic are 'constitutive norms' for thought, and so could equally apply to that reading. (For example, Leech is a clear case of a 'normativist' on my understanding of the term, but she calls her own view 'constitutive-normative' (Leech, 2015).)

[3] Other interpreters who attempt this are Rebecca Millsop (2010), Huaping Lu-Adler (2016), and Matthew Boyle (2017). I will discuss some of the substantive differences between their views and mine in the notes below.

same tension we find in Kant.[4] In this discussion, many of the normativist participants take the criterialist position to be a non-starter because they maintain it cannot accommodate logical error.[5] I think this is too quick. And in dismissing the criterialist position this way, these normativists miss how the unconditional normativity of logic they identify is grounded in the criterialist insight about the peculiar nature of logic's necessity. Or at least so I will argue for Kant.

Nonetheless, the kind of resolution to the tension over illogical thought that I will be proposing for Kant will not work for a contemporary conception of logic—at least as it stands currently— where logic is the study of entailment relations between sentences or propositions. Logic, according to Kant, is the science of the faculty for thinking (and this is neither a part of empirical psychology, as he maintains Locke held, nor of rational psychology, as he maintains Descartes held). In Frege's wake, however, we now banish any discussion of faculties from logic, and we no longer make room for the kind of non-psychological study of the faculty for thinking that Kant defended. Since my resolution of the tension for Kant will depend on how his logic is a non-psychological study of the faculty for thinking, this resolution seems closed off to us today. If, however, we were to reintroduce a non-psychological conception of the faculty of reason into our discussions of rationality and logic, then, although I will not pursue this here, The resolution available to Kant could be of use in these burgeoning discussions.[6]

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[4]Participants in the contemporary discussion have sometimes been strongly influenced by Kant in both directions: for example, Jessica Leech (2015) defends a normativist view, while Manley Thompson (1981) defends a criterialist view. Nonetheless, there are also contemporary normativists—e.g., Hartry Field (2015)—and criterialists—e.g., Charles Travis (2014)—that are not Kant scholars.

[5]See, for example, Leech (2015, p. 3) or MacFarlane (2000, p. 54). Wittgenstein (1921, §5.473) can seem to bite this bullet; see Conant (1992, p. 158) for discussion.

[6]There is also a similar discussion over whether Frege's logic is normative or criterial. Of course, for the same reason that my Kantian resolution cannot be easily deployed in the contemporary setting, it cannot be applied to Frege, and Cerbone (2000) argues that for Frege the tension is irresolvable. For a recent overview of the discussion in the Frege literature, see Mezzadri (2015). Mezzadri 'reconciles' the two traditions by presenting a 'constitutive-normative' reading like Leech's or MacFarlane's. It seems to me, however, that Mezzardi does not properly recognize the motivation behind criterialist interpretations like those of Ricketts (1986) and Conant (1992). This is because he does not examine why Frege's context principle—that only in the context of a sentence does a word have meaning— commits him to the view that, as Weiner puts it, understanding the content of a "judgment already includes some sort of correct understanding of the logical laws" Weiner (1990, p. 75). To examine this discussion in detail would, of course, be a different essay.

2 The insights and the problem

We will want to preserve insights at the core of both the normativist and criterialist traditions, while resolving the tension over the possibility of illogical thought. Normitivists allow such thought to preserve the possibility of logical mistakes. Criterialists deny the possibility of such thought to exclude the intelligibility of logical aliens. Kant manages to get the right verdict on both kinds of case. Our task is to see how, and in this section I will introduce this task.[7]

Between normativist and criterialist interpreters there are points of broad agreement. For example, everyone holds that one of Kant's central, abiding innovations is distinguishing pure general logic from both the empirical psychological investigation of the laws governing the operations of particularly human thinking, and from metaphysical inquiry into the necessary nature of reality.[8] Further, everyone maintains that Kant does this in part through logic's 'generality' and 'purity.' Logic is 'general' because it studies "the absolutely necessary rules of thinking," and thus contrasts with particular logics that study the rules for correctly thinking about a certain kind of object.[9] It is 'pure' because it abstracts "from all empirical conditions" under which we think, which contrasts with applied logic: the study of concrete psychological rules governing how human beings actually do think.[10] So both traditions agree that pure general logic studies the necessary laws of thinking, essential to any thought whatsoever—no matter what it is *about*, or the specific nature of the *thinking subject*.[11]

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[7]Boyle (2017, §2) argues that our tendency to read Kant in normativist or criterialist terms belies the distance between our concerns and Kant's. There is something to this, because Kant's pure general logic is the science of the form of the understanding, a faculty, while the Fregean normative/descriptive distinction is bound up with his rejection of faculties in logic. Nonetheless, in Kant's explanations of faculties he will often compare them with organs (A833/B861), and thus, like sciences that study the way organs function (e.g., cardiology), logic will have both normative and descriptive elements (as Boyle's ensuing discussion makes clear). For this reason, sussing out exactly how these elements can co-exist within Kant's faculty-based conception of logic is still a worthwhile ambition, if we want to understand the relationship between Kant's conception of logic and Frege's (or our own).

[8](cf. Bvii)

[9](A52/B76)

[10](A53/B77; *JL*, 9:14)

[11]Students of Kant will notice that I did not discuss the third of Kant's contrasts: between pure general and transcendental logic (A55/B79*ff*). Of course, interpreters also agree that this contrast is important. I will only be touching on it in what follows. My focus will be on illuminating the nature of pure general logic through an examination of the function of the understanding. Because transcendental logic is also logic, it too concerns rules of the understanding (A52/B76). But unlike pure general logic, it does not abstract away from the relation cognitions stand in to their objects, but contains "the rules of the pure thinking of an object" (A55/B80). For this reason, there is a sense in which pure general, but not transcendental, logic will abstract away from the material of sensibility. And while many of the considerations I am presenting will apply *mutatis mutandis* to transcendental logic, its receptive

But the insights at the core of normativism and criterialism, and the way they divide pure general logic from both psychology and metaphysics, are quite different. On the normativist side, take MacFarlane's reading. He believes Kant's claim that logic studies "the absolutely necessary rules of thinking, without which no use of the understanding takes place,"[12] amounts to the claim that pure general logic studies "constitutive norms for thought *as such*."[13] To be a 'constitutive norm,' according to MacFarlane, is to govern an object in virtue of the kind of thing that it is. For example, merely because you are thinking about a physical thing, the content of your thought will be assessable in light of the laws of physics. In this sense, "the laws of physics provide constitutive norms for the activity of thinking about the physical world."[14] And "only by opting out of that activity altogether—as one does when one is spinning a fantasy tale, for example, or talking about an alternative possible universe—can one evade the force of these norms."[15] Similarly, it is only by opting out of the activity of thinking and judging altogether, according to these interpreters, that one can evade the force of logic's laws.

This conception of pure general logic then allows MacFarlane to divide it from both empirical psychology and metaphysics. For, human psychology studies laws of "the understanding under certain circumstances" or conditions,[16] while the laws of pure general logic are "*unconditionally binding* norms for thought."[17] And metaphysical inquiry into the structure of reality happens in large part in transcendental logic, which "supplies norms for 'the pure thinking *of an object*' (A55/B80, emphasis [MacFarlane]), not norms for thought *as such*,"[18] as pure general logic does.

On the criterialist side, take Conant's reading. Conant too wants to explain the special status

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dimension adds formidable complexity in the details. Thus, it is a topic I will save for another occasion.

[12] (A52/B76)

[13] MacFarlane (2002, p. 35; 43)

[14] MacFarlane (2002, p. 37). This is MacFarlane's example, which he is, of course, borrowing from Frege. It is a bit awkward for two reasons. First, the laws of physics are primarily descriptive of the natural world, and it is only secondarily that they provide constitutive norms for *thinking* about physical objects. Second, *prima facie*, there is an ambiguity in Frege's discussion of these norms that MacFarlane preserves: Frege could be referring to the actual laws of physics, in which case they would be normative for getting things right, or he could be referring to our current best conception of these laws, in which case they would be normative for the justification of our physical beliefs (MacFarlane, 2002, fn. 19). This ambiguity does not substantively effect the points I will be making.

[15] MacFarlane (2002, p. 37)

[16] (A53/B77)

[17] MacFarlane (2002, p. 43)

[18] MacFarlane (2002, p. 48)

of logic's principles by appealing to how they are "constitutive of the possibility of thought,"[19] although he understands this constitutive necessity quite differently. According to Conant, "Kant held that illogical thought is not, properly speaking, thought at all."[20] Conant conceives of Kantian logical principles not as constitutive norms, but as constitutive conditions, the satisfaction of which is minimally required for something to be a thought at all. Nonetheless, these logical principles are not inviolable in the ordinary sense that, e.g., the laws of physics are inviolable with respect to physical things, since thinking contrary to them is not an intelligible possibility, but a mere illusion of thought.[21]

We can clarify this last point by looking at why, on this reading, pure general logic is distinct from both empirical psychology and metaphysics. The laws of pure general logic neither describe the contingent psychology of actual human thinkers, nor some Platonic realm of truths that all thought must respect. If they described either of these, then they would be, as Putnam puts it, "descriptive of some domain of actual and possible entities."[22] For this reason, thinking their opposite would be intelligible: there would be some fact that they claim obtains, which we can conceive of being otherwise. But this is not so. Pure general logic is not a substantive, descriptive body of knowledge. Rather, as we will see, it is the science of the "mere form of thinking."[23] It is an articulation of the laws of thought, no matter what the thought is about. And so, unlike the laws of physics, there is nothing—no coherent possibility—that these laws rule out, only confusions.[24]

There is something profoundly right about both of these insights as interpretations of Kant,[25] and in developing ours we should want to preserve both. Nonetheless, these traditions are in tension

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[19]Conant (1992, p. 133)

[20]Conant (1992, p. 127; 137)

[21]Conant (1992, p. 133-134)

[22](Putnam, 1994, p. 247)

[23](A54/B79)

[24]Conant is influenced here by Thomas Ricketts (1985), who argues convincingly that there is a tension in Frege's philosophy over whether the laws of logic are descriptive in an ordinary sense, or descriptive in the special sense that they codify inference rules which it would be nonsensical to deny. Putnam characterizes the former view as an "ontological conception of logic," where logic studies the most general laws of nature, quantifying "over 'all objects'— and all concepts as well," while he characterizes the latter view as a formal conception of logic, where "it is a doctrine of *the form of coherent thought*" (Putnam, 1994, p. 247). Ricketts argues that one of Wittgenstein's main objectives in the *Tractatus* is to criticize the former strand in Frege, and develop a view that is thorough-going with regard to the latter. (N.B. Being a 'criterialist' does not entail endorsing general criteria for the logicality of a law, something I think Ricketts' Frege would want to resist.)

[25]I will be presenting some evidence for each below. I do not mean to downplay the clear Fregean flavor of either interpretation, but in what follows I hope to provide their properly Kantian context.

over the possibility of illogical thought: normativists allow it, criterialists do not. This tension is related to a distinction between two kinds of cases of such 'thought': logical mistakes and logically alien thought. Logical mistakes are when we, e.g., inadvertently draw an invalid conclusion or do not recognize a contradiction in our thinking. They are local violations of logical law due to inattention that do not threaten the thinker's commitment to logical laws. And the normativist holds we bungle our way into making such missteps from time to time. In contrast, logical aliens, as Frege puts it, are beings "whose laws of thought directly contradict our own."[26] These beings are not merely guilty of a logical misstep, but reject the very laws that we take to govern rational thought. This rejection would be global. And it is this notion of logically alien thought that criterialists maintain is confused. It is not a genuine possibility, but at most the illusion of one.

It can seem, however, that while normativists can accommodate the possibility of logical mistakes, they cannot properly reject the intelligibility of logical aliens; and while criterialists correctly rule out the intelligibility of logical aliens, they cannot accommodate everyday logical mistakes.[27] This is tied to how the proponents of each would critique the other. First, the normativist critique of criterialism. It can seem that logic's laws must be violable to be constitutive norms for how we ought to think—that for a normative ought, *ought to ϕ* implies *could fail to ϕ*.[28] But on the criterialist reading, illogical thought is impossible: a putative thought that violates the laws of logic is not a thought. So the criterialist, it seems, cannot accommodate the normativity of Kant's logic. Second, the criterialist critique of normativism. It can seem that to admit illogical 'thought' is thought is to take the negation of a logical truth to be intelligible. For, an illogical thought violates a logical law, and so if we can grasp that thought, then we can grasp the negated law. But as Conant puts it, "we are simply unable to make *sense* of [the negation of a logical law] in a way

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[26](Frege, 1893, p. xvi)

[27]I am grateful to an anonymous referee at this journal for drawing my attention to this tradeoff.

[28]Kant will make an analogous point about moral laws, claiming that for a law to be an imperative, it must be possible for the thing governed to fail to accord with it (*GMS*, 4:414), and he will often draw comparisons between pure morality and pure general logic (e.g., A54/B79). For my part, I would like to set these comparisons to one side, since properly unpacking the exact senses in which pure morals and pure logic are and are not analogous would be an essay of its own. This is because of the different relationships that morality and logic stand in to divine beings. The moral law, and thus all of morality, will apply equally to all rational beings, including finite perfect holy wills and even the infinite being, as the supreme intelligence (*KpV*, 5:32). Logic, however, studies the formal rules of thinking, thinking is discursive cognition (A131/B170), but God intuits and does not think (*VT*, 8:400n). For this reason, it is even less clear what relationship the laws of logic stand in to God's cognition, or some holy thinker with a non-sensible form of intuition, than is the relationship between these beings and the moral law.

which allows the question of [its] truth or falsity to arise in the first place." [29] So the normativist, it seems, cannot properly rule out the intelligibility of a negated logical law. Thus, if I am correct that Kant gets the right verdict on both cases, then his view will have to be able to stop the slide from allowing mistakes to allowing the intelligibility of aliens, or from excluding the intelligibility of aliens to excluding mistakes. [30]

Am I right, however, that these *are* the correct verdicts? Both can seem controversial. The hero of Conant's account, Wittgenstein, claims that "in a certain sense we cannot make mistakes in logic," while MacFarlane seems to claim we can conceive of logical aliens, but their illogical thoughts will be incorrect. [31] A lot, though, hinges on exactly how we understand the cases, and to a large extent, I think, the disagreement is merely apparent. For Wittgenstein, the sense in which logical mistakes are impossible presupposes our language has a perfectly perspicuous logical structure and excludes from logic any role for the faculties of actual thinkers. Under these assumptions, excluding mistakes isn't clearly problematic. Wittgenstein would claim the normativist's innocuous 'logical mistakes' are cases where "we have given no meaning to some of" the constituent parts of a sentence. [32] And he is happy to allow that this happens.

In the case of logical aliens, the motivation behind rejecting their intelligibility is less evident. It will help to keep two aspects of the case distinct. On the one hand, we are supposed to imagine being like Alice at the mad tea party. We encounter beings whose behavior resembles that of reasoners in some ways, but it is as though they are following different logical laws, ones that, say, permit affirming the consequent, tonk introduction, [33] or judging contradictions. On the other hand, we are supposed to not just imagine encountering beings that *behave* this way, but to conceive of them as *reasoning* or *thinking* according to contrary laws. So long as MacFarlane is only thinking

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[29] (Conant, 1992, p. 128). Or, as Putnam puts it, "the negation of a theorem of logic violates the conditions for being a thinkable thought or judgment" (Putnam, 1994, p. 257).

[30] Influenced by the discussion of error in (Lavin, 2004), Tolley (2006), Millsop (2010), and Lu-Adler (2016) have also emphasized the former part of the tension. No one I know of thematizes the latter part of the tension, although Conant (1992, p. 158) comes close, and Wittgenstein is surely aware of it with his claims that there are no mistakes in logic and that there are no primitive propositions of logic, but all tautologies are of "equal rank" (Wittgenstein, 1921, §5.473 & §6.127). Although she does not describe her project this way, one aim Leech has might fairly be described as showing how the normativist reading can rule out the intelligibility of logical aliens.

[31] (Wittgenstein, 1921, §5.473), Conant (1992, p. 158) and MacFarlane (2000, p. 54n)

[32] (Wittgenstein, 1921, §5.4733)

[33] Tonk is a connective defined by licensing: (1) A ⊢ A-*tonk*-B, and (2) A-*tonk*-B ⊢ B. See (Prior, 1960).

about the case in the first way, I can agree with him. I can imagine beings who behave this way, who seem to be making judgements some of the time, although these are mistaken (or correct only *per accidens*), while at other times these beings strike me as confused, even though they treat their confusions as no different than their judgments. I can even, perhaps, imagine beings like this who seem thoroughly confused. It is when we add in the second aspect of the case—when I am supposed to conceive of them not only as *behaving* as though they were subject to different laws, but also as *thinking* according to such laws—that I think it becomes unintelligible, and I will argue that it is this that Kant rejects.[34]

Since Frege, it has become orthodoxy to view logic as the study of entailment relations between sentences or propositions, rather than as the study of the faculty of thinking. Influenced by this, both MacFarlane and Conant do not dwell on Kant's definition of logic as "the science of the rules of the understanding in general."[35] I think this definition, with its faculty-oriented conception of logic, is the key to our task.[36] Specifically, we will see that, for Kant, the understanding is fallible. When its exercises violate its own laws, these are logical mistakes. These mistakes do not indicate an alternative way thoughts could have been, but are confusions. And the attempt to conceive of a being with an understanding that operates according to different laws—a logical alien—is self-undermining.

In the next section I will develop a reading of Kant on logical mistakes where both logical and illogical exercises of the understanding are subject to the norms of logic. In the section after, I will argue that the unconditional normativity of logic (that MacFarlane identified) stems from the peculiar nature of logic's necessity (that Conant identified). And in the final main section, I will turn to some of Kant's texts to reconstruct why he would have rejected logical aliens.

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[34]We might sum this up by noting that at the first stage we do not have logical aliens proper, only logical nitwits. These are beings governed by the same laws as we are, but who are very bad—even maximally bad—at following them. I have been convinced that we should allow maximally bad kind members and reject normative thresholds that threaten kind membership by Kathryn Lindeman (2017). I am grateful to the editor for the distinction between nitwits and aliens.

[35](A52/B76)

[36]Some interpreters who would agree with me here are Longuenesse (2005, ch. 4), Stang (2014), Merritt (2015), and Boyle (2017). Of these, Boyle's treatment of the relationship between the understanding and thinking stands out as especially consonant with my own. Boyle stresses the analogy between a substance that modifies itself through acting, and the understanding's own self-modification in thinking. My own discussion, instead of focusing on the nature of the thinking subject, will focus on the acts of this thinking power and its function, as a cognitive faculty.

3 Logical mistakes & the function of the understanding

According to Kant, the law of non-contradiction is the fundamental law of pure general logic.[37] Given this, there are many passages that seem to support either the possibility or impossibility of thinking a logical contradiction. For example, he will speak of contradictory cognitions as though they are perfectly intelligible, as when he says "a cognition is false if it contradicts itself,"[38] while also often denying the possibility of contradictory thoughts or cognitions, as when he says, "I can **think** whatever I like, as long as I do not contradict myself, i.e., as long as my concept is a possible thought."[39] Kant himself, however, does not seem very exercised by the tension. He sometimes even seems to affirm and deny the possibility of illogical thoughts or cognitions in a single breath.[40]

In this section, I develop an interpretation of Kant on logical mistakes that explains his seeming nonchalance over affirming and denying the possibility of illogical thought. Roughly put, my strategy is to distinguish two levels: exercises of the understanding and genuine thoughts. Logical mistakes are exercises of the understanding that are at odds with logic's laws. Normativists are right that logic is normative for exercises of the understanding, regardless of whether the exercise accords with logic's laws or not. Normativists are wrong, however, insofar as they treat all exercises as genuine thoughts. Criterialists are right about logic's relation to genuine thoughts: illogical thoughts are not genuine thoughts at all. Still, criterialists are wrong when they say that a putative

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[37](cf. A151-153/B190-192; A59/B84)

[38](*WL*, 24:826). In addition to passages about cognitions in general, he also seems to affirm specific types of illogical cognitions: First, he discusses fallacious inferences that violate logic's laws, where we are subject to a "logical illusion" because these imitate "the form of reason" (A296/B353; cf. A61/B85-86; *WL*, 24:828). Second, in dialectic Kant is concerned with warding off the introduction of contradictions into our system of cognition or knowledge (e.g., Bxxxviii; *Prol*, 4:340-341; *Eberhard*, 8:194), so seems to maintain that we can make contradicting judgments. Third, Kant discusses concepts that contradict themselves, like "bright darkness," whose object is a *nihil negativum* (e.g. A291/B348; *MM*, 29:792).

[39](Bxxvi, note; cf. Bxxvii; A155/B195; *Eberhard*, 8:195). Specifically, he will claim that contradictory concepts and judgments "are nothing," (A150/B189; cf. A291/B348) or that "contradiction entirely annihilates and cancels them" (A151/B190-B191). He will even go on to claim that the principle of contradiction is inviolable (A152/B191), or that if the laws governing a power are essential (as he seems to think the "general and necessary rules of the understanding" that logic studies are (A59/B84)), "then the power cannot deviate from them" (*WL*, 24:824).

[40]I have in mind two kinds of passages. First, there are those where he uses the notions of a contradictory concept, judgment, or cognition, to pick out—and thereby affirm the possibility of—those very representations he then claims are impossible. For example, he says contradictory *concepts* and *judgments* "are nothing" (A150/B189; cf. A291/B348; *MM*, 29:792), or agreement of a *cognition* with itself "makes a cognition possible as cognition" (*WL*, 24:823). Second, his claim that the principle of contradiction is "inviolable" seems to suggest contradictory thoughts are impossible, but when he claims this he also says that "we will, to be sure, always be careful not to act contrary to this" (A152/B191), which seems to suggest they are possible.

thought that violates the laws of logic is not even an exercise of the understanding.

I will introduce my interpretation by contrasting it with some criterialist ones (and return to the normativist contrast at the end of the section). Tolley (2006), a criterialist, raises the tension between the normativist and criterialist interpretations. Although he recognizes that Kant often speaks of pure general logic in normative terms, he downplays these discussions by claiming that they only appear in the unpublished logical works.[41] This is misleading, however, because in his published work, Kant consistently refers to pure general logic as a canon.[42] A canon is "the sum total of the *a priori* principles of the **correct** use of certain cognitive faculties in general,"[43] and pure general logic is the canon of the understanding in regards to what is formal in its use. Merritt, another criterialist, recognizes the importance of Kant's discussions of logic as a canon,[44] but argues that a canon is normative even on the criterialist reading, because just as someone who violates the rules of chess is not making a chess move, someone who violates the rules of logic is not, say, inferring at all. Nonetheless, according to Merritt, such rules regulate practice, and are thus normative "by ruling things out of bounds, as non-thought and non-chess."[45]

I do not think this kind of simple resolution can work. The problem is that on Merritt's view, if a candidate representation violates the laws of logic, then it is not a thought. If it is not a thought, then it is not governed by thought's laws, and thus these laws cannot dictate how it ought to be. For Merritt, like for Tolley, "that which fails to accord with logical law simply loses its identity as an exercise of the faculty governed by this law."[46] If this were right, however, then the laws of logic do not govern such representations, and so there is no longer a sense in which they *should* accord with these laws. After all, there is no normative valence when I judge, for example, that an associative transition from the thought of Berlin to the thought of lindens is not an inference, or that the juxtaposition of '*Berlin, lindens*' is not a judgment. My associations and juxtapositions are not *worse* because they are not inferences or judgments. They would only be worse if they were

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[41]Tolley (2006, p. 392)

[42](e.g., A53/B77)

[43](A796/B824, my emphasis)

[44]Merritt (2015, p. 482)

[45]Merritt (2015, p. 483)

[46]Tolley (2006, p. 385)

failed judgments or inferences—i.e., failed exercises of the understanding.[47]

Recognizing this, however, suggests a clear path forward. Thoughts, for Kant, are exercises of a fallible capacity or faculty for thinking, the understanding. With fallible capacities, Kant will often use the term for its exercises in both a wide sense that includes failed exercises, and in a narrow sense that only includes successful ones. For example, a cognitive capacity (*Erkenntnisvermögen*) is a capacity for cognition of objects. Nonetheless, sometimes Kant will speak of 'false cognition' (*falsche Erkenntnis*), which fails as cognition of an object.[48] Similarly, there can be exercises of the understanding, merely as a faculty for thinking, that fail to accord with its laws. These will be 'thoughts' insofar as they are exercises of this faculty. But 'thought' in a stricter sense will only refer to exercises of this capacity that are in agreement with its laws. We will want to understand these two senses of 'thought' further, but preliminarily, we can see why distinguishing them looks promising: on the one hand, the laws of logic will be normative, because every exercise of the faculty ought to accord with its laws, although some of them may not. On the other hand, the laws of logic will be criterial, because any exercise that does not accord with these laws will be a mere confusion; it will not be a logically successful thought.

Before turning to develop this suggestion, responding to an objection will clarify my disagreement with the criterialist. On Merritt's view of chess, presumably the class of relevant non-chess-moves will still count as attempts to move a piece in a way that will be accepted as a chess move. These kinds of piece movements will be evaluable by the rules of chess. So, she will be a disjunctivist about chess piece movements: some will count as moves, and some will be failed moves, because they violate the rules. Analogously for thoughts, Merritt might try to appeal to a relevant class of non-thoughts, which still are subject to the norms of thoughts, but which fail to be thoughts. Spelling this out, however, is non-trivial, and I suspect that any way of doing this correctly will collapse into my view. The reason is that the criterialist must find a genus which will include the relevant non-thoughts and thoughts, such that both are subject to the same norms, because they belong to this genus. Kant gets this genus through appealing to exercises of the understanding. These then divide into the logically successful and the logically unsuccessful. So long as the cri-

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[47]See here also the related argument that Leech develops against criterialist views in general (Leech, 2015, §2.1).
[48](cf. e.g., A58/B83; A376; A709/B737; *WL*, 24:826; 24:832; *DW-L*, 719-20, 724)

terialist appeals to *exercises of the understanding* in order to explain how the laws of logic are normative for the relevant non-thoughts, their view will be a version of my view. This is because while they might still reserve the use of the word 'thought' for the logically successful species of this wider genus, this linguistic legislation does not make a philosophically substantive difference to the underlying view.

Now, to spell out my suggestion about the two senses of 'thought,' we need to understand the *function* of the understanding, and the exact sense in which illogical cognitions are its failed exercises. According to Kant, there are two sources of our knowledge of objects, "two stems of human cognition, [...] sensibility and understanding."[49] The function of sensibility is to "give" objects to us, while through the understanding "they are thought,"[50] and "these two faculties or capacities cannot exchange their functions."[51] Still, although the representations of sensibility (intuitions) are in a sense cognitions, Kant will also often refer to the *understanding* as the faculty for cognition, or the faculty for cognition *properly speaking*, where he is drawing a contrast with sensibility.[52] Kant will explain cognition (*Erkentnnis*) in this stricter sense as "a whole of compared and connected representations."[53] What we will see is that it is this function of the understanding in comparing and connecting representations through thinking which requires obeying logic's laws, and so only thoughts in the narrow sense will be whole cognitions.

The understanding compares and connects representations through combining or synthesizing.[54] We see this in each of its characteristic activities: conceiving, judging, and inferring. On this picture, intuitions are specific to the time, place, and thing that they represent. And because of

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[49](A15/B30; cf. A835/B863)

[50](A15/B30; *JL*, 9:36; A294/B351n)

[51](A51/B75). In all of these passages Kant has in mind the the understanding in its "broad designation," which incorporates all of the higher faculties of cognition: "understanding, the power of judgment, and reason" (A130-131/B169; cf. *PölL*, 24:505). In general, we will be examining the understanding or reason in this broad designation, and when I use the terms this is what I will have in mind.

Relatedly, there are uses of these faculties and their representations that I will not be addressing here—as, say, in the production of aesthetic pleasure through the free play of the understanding and imagination (cf. *KU*, 5:217), or the role of concepts in the syntheses of the productive imagination (cf. A141/B181). My focus is solely on the role of these faculties and representations in thinking and cognizing—forming new whole concepts, judgments, and inferences—in the strict sense studied in pure general logic, and the way that these exercises of the understanding can go wrong.

[52](e.g., A50/B74; A78/B103; B137)

[53](A97). Which is, of course, not to deny that intuitions *can be* run through, compared, and connected, it is just that they need not be. After all, they are the material for thoughts.

[54](cf. B129-130)

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this specificity, they are singular.[55] Concepts, however, are general representations, or features, that can be found in many other possible representations, as what is common to all of them.[56] In this way, concepts will indicate common features that unify or combine these representations (esp. intuitions). Judgments, in turn, unify or combine concepts. They connect concepts together into truths or falsehoods, and when we judge that these obtain, we thereby develop the concepts involved. For example, when I judge *bodies are heavy*, I develop my concept *body* by now including *heaviness* as another feature within it. Finally, inferences combine judgements. Paradigmatically, for Kant, these will be syllogisms where two judgements share a middle term, a concept. Through this middle term, one infers a conclusion, a third judgment, which further develops the concepts of the first and second judgments.

In thinking—conceiving, judging, and inferring—Kant takes the understanding to be comparing and connecting representations, combining and ordering them into new wholes. For this reason, in every thought, we can distinguish a matter and a form. The matter are the representations that the thought compares and connects together, and the form is the way that these representations are connected. It is the form of thinking that pure general logic studies. For example, logic will study inference forms, like 'all As are B, all Bs are C, therefore all As are C.' These abstract away from specific judgments and designate a structural relationship that judgments may instantiate, in order to form an inference. Or again, logic will study judgement forms like 'not all As are B,' which abstract away from specific concepts and designate a way concepts can be combined into judgments. Or it will even study the form of concepts, generality (*Allgemeinheit*), with respect to how concepts unify representations, while abstracting away from these specific representations. We can think of these formal rules on analogy with grammar: "Just as grammar is for passing judgment on language as to form," logic is for passing judgment on thoughts as to form.[57] And just as when we combine words in a way that violates the rules of grammar, we arrive at linguistic

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[55]It is a notoriously difficult and contentious question whether or not the constitution of intuitions, in themselves, also involves some kind of 'synthesis,' that can ultimately be traced back to the understanding through the imagination. I will not be taking a stand on this topic here.

[56](B40). Of course, there can be concepts that will only apply to one thing (e.g., the concept of the most real being, *ens realissimum* (A576/B604)). Still, in its *form* such a representation will be general, because it picks out the thing via a rule or feature, and rules or features can be common to many (cf. e.g., *JL*, 9:91).

[57](*WL*, 24:792; cf. *WL*, 24:790-792; *DW-L*, 24:693-695; *BusL*, 24:609; *JL*, 9:11-13; *En-F*, 29:31; R1579, 16:19)

nonsense, when we compare and connect representations in a way that violates the rules of logic, we arrive at cognitions that are not in agreement with themselves.[58]

Another way Kant will often get at the function of the understanding is by speaking of concepts uniting representations into "one consciousness" or a "unity of consciousness," and of judgements as representing the relationship of various concepts to "one consciousness."[59] This does not happen when the 'concept' or 'judgment' is contradictory. That is, if two cognitions are contradictory, and so thinking them together violates the laws of logic, then my consciousness cannot be unified in thinking both of them. Take two opposing (*entgegengesetzte*) predicates like *brightness* and *darkness*. I can think of *brightness* and I can think of *darkness*, but when I put (*setze*) these together, *bright darkness*, "I think nothing at all."[60] Their opposition prevents their combination. They cannot form "one consciousness," or one whole of compared and connected representations. This is because their combination lacks "the logical form of a concept (of thinking) in general,"[61] i.e., unity of consciousness.

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[58](*JL*, 9:51). In explaining this kind of point Tolley contrasts Kant's kind of view with a more contemporary conception of logic that distinguishes "formation rules and rules of inference," where the former are rules for constructing well-formed formulas and the latter are rules for valid inference (Tolley, 2006, p. 390). He argues Kant does not draw this kind of distinction, but that insofar as the analogy with one or the other is apt, the laws of Kant's pure general logic are more like modern formation rules. In response, Lu-Adler claims Kant did draw such a distinction between "structural rules," and "veridical rules"' (Lu-Adler, 2016, p. 4-5), and that although Tolley is right about the criterial role of the structural (or formation) rules, the normativity of pure general logic stems from the veridical rules (which she takes to apply to more than just valid inferences). I agree with Tolley that in so far as the rules of pure general logic are analogous to either, they are more like modern formation rules, and I do not find evidence for distinguishing two kinds of rules within Kant's pure general logic.

Nonetheless, I do think there is something to Lu-Adler's distinction, insofar as the laws of pure general logic are normative for Kant in two ways. First, there is their normativity for the agreement of representations with one another merely in thought. Second, there is their normativity for truth or for agreement with an object. In this essay, only the first kind of normativity is at issue. The second would be relevant as well if we were examining how exactly pure general logic bears on representing objects that must be given through sensibility, and the way that this logic contrasts with transcendental logic. In OMITTED FOR BLIND REVIEW I argue that distinguishing these two kinds of normativity blocks the argument of (MacFarlane, 2002).

In general, however, I am wary of thinking of the laws of pure general logic on analogy with contemporary formation rules. The reason is that when Kant discusses thinking, there are two ways he will present the activity, and the analogy is at best apt only for the first of these. On this, thoughts are products of the understanding: they are representations that are produced through the activity of combining matter in a certain way, and these products can then go on to figure as the material of other such processes. Insofar as the laws of pure general logic can be rules for the form of these products, they can be conceived of as something like contemporary formation rules. Thinking for Kant, however, is always an act of the understanding, and in the first instance the laws of pure general logic are laws governing these acts. In this respect, they are not rules for whether thoughts as products are well-formed, but for the activity of thinking itself, although in a derivative sense they will also be normative for these products.

[59](i.e., *einem Bewußtsein/Einheit des Bewußtseins*. Cf. e.g., B114; A103-104; B133-134n; *PölL*, 24:577u; *JL*, 9:101)

[60](*MM*, 29:792; R3720, 17:267)

[61](A239/B298)

This is the key to how Kant did and did not think illogical thought was possible. Usually illogical exercises of the understanding arise through a kind of "logical illusion" where, e.g., a dialectical inference imitates "the form of reason,"[62] and tricks the inferrer into thinking it follows a legitimate inference rule: as, for example, if one were to believe someone when she says, "All Moors are men. The respondent is a man. Therefore, he is a Moor."[63] In this case, "attentiveness to the logical rule" is all that is required to fix the illusion. This suggests that in general, just as all that is required to remedy a grammatical mistake is the recognition that one has violated the relevant rule, all that is required to remedy a logical error is attention to the appropriate rule. So, for example, all that would then be required to fix the mistake of thinking contradictory predicates in the same subject would be attention to the "principle of determinability," according to which only one of two opposing predicates can be added to any concept.[64]

Nonetheless, insofar as I am not conscious of the mistake, there would seem to be a sense in which I could form a contradictory cognition. I could, e.g., judge that a composite substance must consist of simple parts, and also judge that it must not consist of simple parts, so long as I was not simultaneously aware of the contradiction in judging both.[65] In this case, although I take myself to have a whole of compared and connected representations in my concept of a composite substance, I am mistaken. I have exercised my understanding in attempting to combine the predicates, but since these have the *form A* and *non-A*, they cannot be united into one consciousness. I am confused. I think I've done something that I haven't.[66] And it is symptomatic of my confusion that as soon as I become conscious of the contradiction (together with the principle of determinability), that my 'concept' of a composite substance falls apart: I recognize that I have tried to combine two

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[62](A296/B353)

[63](*WL*, 24:828)

[64](A571/B599)

[65](cf. A434/B462, A435/B463). Another kind of example is if I inadvertently combine contradictory concepts, because this contradiction is hidden. Take *square-circle*. The concepts combined here do not have the surface form *A* and *non-A*. So it may not be evident to me that *square-circle* is contradictory. But once I analyze these concepts and spell out their content, I will see they will include features that have this form: *round* and *non-round*, or *cornered* and *non-cornered* (*Prol*, 4:341). And so *square-circle* will fall apart.

[66]My use of 'confused' here is related to Kant's but different. I'm claiming the thinking subject is confused, but confusion in Kant's technical sense applies to thoughts (esp. concepts), not thinkers. Still, for Kant, a concept is confused when it contains parts that one is not aware of (distinctly), and so its parts are not well ordered (cf. e.g., *JL*, 9:34-35). In my sense, confusion arises when thinkers have one of these confused 'concepts,' but the parts are logically opposed.

predicates that are opposed.[67]

At this point it might sound like I intend to endorse a solution of the sort that Tolley attempts. Tolley posits "second-order" judgments about failed putative thoughts. On these, the failed putative thoughts are judged to be thoughts. And the laws of logic get their normative grip on the putative thoughts through the falsity of the second-order judgments about them.[68] For example, on this view, in the above case when I putatively judge that composite substances both must, and must not, consist of simple parts, I do not actually judge. Still, I do make a false second-order judgment that this putative judgment is a judgement. And it is because I think I've made a judgement when I haven't that the laws of logic are normative.

Tolley's view, then, seems to be a disjunctivist view of the sort I discussed above: the relevant genus is 'putative thought that I judge to be a thought,' while the species are 'thoughts' and 'failed putative thoughts.' So does it collapse into the kind of view I am defending? I don't think so, because Tolley does not take failed putative thoughts to be exercises of the understanding. And for this reason, his view misconstrues the normativity of Kant's logic. The laws of Kant's logic are normative for thinking because they are codifications of the rules by which the faculty for thinking (fallibly) functions, not because we might mistakenly take a representation that is not a product of the (infallible) faculty they govern to be one. And although it is true that I might take myself to have formed a judgment or concept when I haven't, the normativity of logic's laws

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[67]N.B. Here the psychological and the logical (in Kant's sense) should be kept carefully distinct. Applied logic, a branch of psychology, will treat the topic of "attention, its hindrance and consequences" (A54/B79). Thus, if I am right, Kant is committed to the psychological claim that attention to a contradiction in one's thinking (together with awareness of the principle of determinability) will cause the recognition that in thinking them together one has not successfully thought anything at all. Kant would explain this psychological fact, however, with the logical point about the opposition of contradictory predicates: that they cannot be combined in one genuine concept, i.e. form a unity of consciousness. To mistakenly think one has so combined them, one must be confused, one must have fallen prey to a kind of illusion. And while the nature of illusion in general—that it involves mistaking subjective grounds of belief for objective ones—is a matter for pure general logic, specific kinds of illusion, and how they have their sources in prejudice, are topics for applied logic (cf. e.g., *JL*, 9:76, *DW-L*, 24:737*ff*).

Many interpreters have been pulled towards claiming applied logic is normative, while pure general logic is criterial. (E.g., Tolley (2006, §X), Merritt (2015), Millsop (2010), and Lu-Adler (2016).) There are two main problems with this strategy, and ultimately none of these interpreters rest content with this kind of account. First, this reading sits uncomfortably with Kant's usual presentation of applied logic as a descriptive science, studying the natural causal laws of human psychology, while pure general logic is a canon for how any thinking being ought to think (*PölL*, 24:507; cf. *JL*, 9:14, A53/B77). Still, in at least one place Kant will claim that applied logic has a normative part (*JL*, 9:18). Second, more seriously, however things might be with applied logic, Kant's claims about the normativity of logic clearly concern pure general logic, and so no strict criterialist account of it will do.

[68]Tolley (2006, p. 391)

do not require actually making this reflective judgment. Rather, it is essential to thoughts (as exercises of the understanding) that they are better or worse, as the kind of things that they are, insofar as they accord with these laws or fail to. This is so regardless of whatever further reflective judgments I go on to make. And although Tolley might recover some kind of normative assessment of failed putative thoughts through his 'second-order' thoughts, this is too far removed from the normativity in question. Logic's laws are not normative for first-order putative thoughts via second-order judgments about them, nor (in the first instance) for second-order judgments about first-order putative thoughts. Rather, its laws are simply normative for thoughts, as exercises of the understanding.[69]

I opened this section by contrasting my interpretation with criterialist ones, insofar as these maintain that which fails to accord with logic loses its identity as an exercise of the understanding. Let me close it by contrasting it with normativist ones. In doing so, however, I don't mean to be

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[69]This is not, however, to deny that *consciousness* is both a "representation of our representation" (*DW-L*, 24:701; cf. *JL*, 9:33; *PölL*, 24:510; R1678, R1679, 16:79-80) and an essential condition for logic (*DW-L* 24:718; *WL* 24:805; *JL*, 9:33, 9:34; *PölL*, 24:510; *BusL*, 24:616, 617, 635; R1690, 16:84; R1700, 16:87; R1702, 16:88). I presume it is passages like these that Tolley has in mind with his distinction between first and second-order judgments. Nonetheless, consciousness is less a second-order thought about a putative first-order thought than it is a reflexive component of one and the same exercise of the understanding—the *Reflexionsvermögen* (*Anth*, 7:166; R1689, 16:84; R1678, R1679, 16:79-80. Cf. *MM*, 29:878; *WL* 24:805; *BlomL*, 24:239). This reflexive character is essential to exercises of the understanding, and one component of it is evident in the implicit grasp that thinkers must have of how a thought— i.e., concept, judgement, or inference—can combine with other thoughts, according to logic's laws. The normativity of logic stems from this implicit consciousness of logical form, present in any thought. But this normativity does not depend on one explicitly evaluating (in a second-order judgment) the logicality of one's exercises of the understanding, only on one's potentially doing so.

Now, on Tolley's account, if one has a failed putative thought, then it is not even an exercise of the understanding, in contrast to the second-order judgment about it. Since they are not exercises of the same faculty, on this account there are two things—a putative thought, and a second-order thought about it—but for Kant there is only one thing—an exercise of the understanding—whose logical form is more or less distinct. Further, since the putative thought is not even an exercise of the understanding, the second-order judgment will not merely explicate its putative logical form as such an exercise, which is how Kant conceives of consciousness (*PölL*, 24:510; *BusL*, 24:616, 635; *MM*, 29:87). And so on Tolley's view, putative first-order thoughts would not contain the kind of (obscure) reflexive consciousness of their own logical form that makes logic's laws normative for them. For this reason, the root of my complaint about Tolley's view is not so much the anachronistic appeal to orders, as it is the claim that illogical thoughts are not even exercises of the understanding.

Indeed, I think we can see something like Tolley's distinction between 'orders' is required to make sense of Kant's claim that a cognition which does "not contradict itself" is "in complete accord with logical form" (A59/B84). Suppose I mistakenly judge 'the respondent is a Moor,' because 'all Moors are men' and 'the respondent is a man.' Here, although the inference is certainly not in complete accord with logical form, it is not obvious where the contradiction is, since it is not in the judgment: 'the respondent is a Moor.' Still, we can find it if we draw a distinction between 'orders:' between the logical form that I take the inference to have—the 'second-order' component—and the form that it actually has—a 'first-order' component. (I examine Tolley's proposal in more detail in OMITTED FOR BLIND REVIEW.)

rattling my saber. There is a sense in which I hope both normativists and criterialists will count me as one of their own—after all, I hope to preserve core insights from each. Nonetheless, against normativists, I am claiming that when we have a contradictory cognition, there is no genuine thought for Kant, because this is not a coherent way in which the understanding can compare and connect representations. This is because in such a case there is no unity of consciousness. The various compared representations are opposed, and not merely in what they are about, but in their form (e.g., *mortal* and *non-mortal*). I can only take these predicates to fit together into one cognition if I am confused—if I have fallen prey to a logical illusion. And in this sense, although I have exercised my understanding, I have not done it successfully: I have not coherently thought these predicates together in a single concept.

4 Chess and the absolutely necessary laws of thought

Having seen how Kant preserves the normativist insight, despite illogical exercises of the understanding not being whole cognitions, I would like to turn to several analogies and disanalogies between logic and chess. The comparison between chess and logic is apt because, as MacFarlane stresses, the rules of logic and chess are both constitutive norms. But there is an important difference. While we can conceive of an illegitimate chess move being legitimate, we cannot conceive of an illogical exercise of the understanding forming a whole cognition. For this reason, the norms of chess are contingent, while those of logic are absolutely necessary. And so we will see that the unconditional normativity of logic is grounded in the criterialist insight that there is no intelligible alternate way coherent thought could have been.

First, the normative analogy. MacFarlane develops the analogy between the rules of chess and the rules of logic through the way the laws of physics provide constitutive norms for thought about the physical world. He argues that someone engaged in the game of thinking about the physical world "*ought not* make judgements that are incompatible" with the laws of physics in the same way as someone playing chess ought not violate the rules of chess.[70] In both cases, the rules provide constitutive norms because both the thinker and the player are assessable in light of the norms,

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[70]MacFarlane (2002, p. 36)

in virtue of the activity they are engaged in. Similarly, MacFarlane thinks that anyone who is thinking (or really judging) is essentially assessable by the norms of pure general logic.[71] And this is because the laws of logic have a similar standing in relation to thought as the rules of chess or the laws of physics have in relation to playing chess or thinking about the physical world. In all three cases, anyone engaged in the activity is subject to the norms. And just as in the other two cases, violating the laws of logic does not make it so that one is no longer thinking, in the sense of not exercising the understanding; rather, we can only make sense of the "bungler" who has made a logical mistake, or the "sophist" who is trying to trick others into doing so,[72] if logical errors count as such exercises. This is because it is only if these still count as exercises of the understanding that we can point them out as defective *as the kinds of thing they are* (and not merely as bad, but as illegitimate and impermissible).[73]

Still, while both chess and thinking are constitutively governed by their rules, the rules of chess are contingent, but the rules of thought are not. In chess we might make our own house rules. It would be perfectly coherent to end the game when the queen is captured instead of the king. Similarly, we could investigate the history of chess, and the variations in the rules over the centuries, while still recognizing it as the same evolving game. Neither of these is possible with logic: the laws of thinking are always the same laws (even if it is possible to make mistakes about what these are).[74]

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[71]We can see Kant's commitment to this, for example, in his claim that "general logic analyzes the entire formal business of the understanding and reason into its elements, and presents these as principles of all logical assessment of our cognition" (A60/B85).

[72](A298/B254)

[73]In her discussion of chess Merritt, a criterialist, claims that when someone violates the rules of chess he "has, in effect, suspended play: he is doing *something else* with the pieces" (Merritt, 2015, §2). I think this characterization is misleading. Someone who moves her pawn forward three places off its line instead of one or two, has either inadvertently made a mistake (through carelessness or ignorance) or is trying to cheat. Her opponent should not accept the move as legitimate. But if the illegal move is unchallenged, it remains a part of the game, and is in that sense a move. They are still playing chess, and it is perfectly intelligible that the game go on from there. The cheater even hopes that it will. (Here I am siding with MacFarlane (2002, p. 37), who claims "one can make an illegal move and still count as playing chess.")

[74]This difference is related, I think, to how we learn the rules, and how we engage in the activities. You learn to play chess through learning the rules. In thinking, however, you find yourself 'playing,' and it is only afterwards that you might articulate the rules you are 'playing by.' (Note, however, that this will also hold for the contingent rules of empirical psychology, so not all rules that are discovered like this are necessary.) On this point, compare Kant's discussions of the natural rules of thinking that govern even the common understanding (*logica naturalis*) and the presentation of these as an abstract body of doctrine (*logica artificialis*) (*WL*, 24:791, 798; *DW-L*, 24:696-698; *PhiL*, 24:317; *JL* 9:17, 93; R1628 16:44; R1579, 16:18-19).

This last point is related to another disanalogy over when we hold people responsible for violating the rules. I

This unconditional, or absolute, normativity of logic is at the heart of MacFarlane and Leech's readings, although neither develops it through the contrast with chess. According to MacFarlane:

> We can correctly think about what the world would be like if the laws of physics were different, but not about what it would be like if the laws of logic were different. This is the sense in which the norms for thought as such are necessary: it is impossible to think at all, even counterfactually, without being constrained by them.[75]

That is, we might imagine a world where the gravitational force is half as strong, just as how in chess we might play by different house rules. In imagining this case, the new law and its corollaries would govern the truth or falsity of our claims. This is not so with the laws of thought: we cannot coherently posit a world where the laws of thought are different. Jessica Leech puts this point in terms of rational indubitability: the laws of logic are unconditional in the sense that any rational attempt to doubt them is self-undermining. This is because one has to rely on these very principles in attempting to doubt them.[76] In this way, according to both, anything that counts as thinking will be assessable by the norms of logic, and these norms are unconditional insofar as they cannot be otherwise, because any attempt to think of them as otherwise will be self-undermining.

Consider too another difference between chess or physics, and logic. In chess, if I move a piece to a square that it cannot move to, then I have done something I'm not permitted to do. I have made a kind of move that the rules do not allow. Similarly, if I believe something about the physical world that violates the laws of physics, then I have made a judgment that is false. I have taken the physical world to be a way that is ruled out by its laws. In both of these cases there is something that is ruled out: some way the piece could have moved, or some way that the world could have been. This is not so with logic. If I violate the laws of logic, I have done something that is not

will hold you accountable for not seeing that you have violated logical laws, even if you've never been taught them explicitly, while I would be wrong to do this with chess. This is because any thinker has access to the laws of logic through the activity of thinking, while chess players do not have access to the laws of chess merely by playing.

In these respects I seem to be reading the normativity of Kant's logic very differently than Lu-Adler, who claims logical rules can serve as norms "only insofar as they have been demonstrated in pure logic" (Lu-Adler, 2016, p. 21; cf. §2.4; p. 8). Although Kant does deny that 'natural logic' is properly speaking logic, because it is not an abstract body of doctrine, this does not mean the laws of logic are normative for thought only after they have been worked out—quite the contrary. It is because people "in the first instance act according to rules of which they are not conscious" that the abstract science of 'artificial logic' is possible (R1579, 16:18).

[75]MacFarlane (2000, p. 55)

[76]Leech (2015, §3.1). Leech follows Hanna in construing the logocentric predicament narrowly as one of justification, and rightly argues that the related issue of conceivability is more fundamental. Ricketts (1985, esp. p. 11-12) gives another take, where the logocentric predicament encompasses conceivability. I discuss logocentrism briefly below.

permitted. Nonetheless, unlike the rules of chess, which distinguish the permissible chess moves from the impermissible ones, or the rules of physics, which distinguish possible states of the world from impossible ones, there is not some possible coherent thought that the laws of logic rule out. There is no intelligible way that thought could have worked, other than the way that it does. It is this peculiar aspect of logical laws that the criterialist is after with the claim that its laws are inviolable: when an exercise of the understanding fails to accord with them, it is a confusion, not some alternative coherent way thought could have been.

Now, the normative unconditionality of logic stems from the fact that illogical exercises of the understanding could never be whole cognitions. According to the criterialist insight, the laws of logic are not like the laws of physics, psychology, or metaphysics: there is not some fact they claim obtains, and there is no intelligible possibility that they rule out. Rather, they study the form of thinking—criteria on forming whole cognitions (no matter whether or not these agree with their material or object). And logic's laws are unconditionally normatively binding *because* any exercise of the understanding that does not follow these laws is a confusion. That is, it is impossible to think at all without being assessable by these norms *because* illogical exercises do not indicate some way that these exercises could have turned out logical instead of illogical. And so it is because of the way violations of the laws of logic are not like illegitimate chess moves or physical judgements that contravene physical law, but are confusions, that the laws of logic are necessary norms, while the rules of chess are contingent.

We can see that Kant would endorse this argument if we reflect on his discussions of truth and on how illogical cognition self-destructs. According to Kant, truth "is the agreement of a cognition with its object."[77] And logic, as the study of the form of cognition or thinking, "must present criteria of truth."[78] Agreement with these will not be sufficient "to constitute the material (objective) truth of the cognition," but will be a necessary "negative touchstone of truth," the violation of which makes the agreement of a cognition with its object impossible.[79] Now, the *reason why* agreement with the laws of logic is a necessary condition on truth, according to Kant,

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[77] (A58/B82)

[78] (A59/B84)

[79] (A60/B84-85)

is that when a cognition contradicts the rules of logic, it contradicts "the general rules of thinking and thus contradicts," and even "annihilates," itself.[80] In this respect, it is because cognition (i.e., unity of consciousness) is annihilated by contradicting the rules of logic that no contradictory cognition can be true, no matter how things stand with its object. We even find Kant claiming that since logic studies "the general and necessary rules of the understanding," agreement with which is required for a cognition's agreement with itself—i.e. for not annihilating itself—it presents universal and necessary "principles of all logical assessment of our cognition."[81] Thus Kant takes the unconditional normativity of logic to stem from the way exercises of the understanding that violate logic's laws "are nothing."[82]

5 Logical aliens, logocentrism, and the logical skeptic

Still, one might wonder, *how* absolute is this absolute necessity? Sure, maybe the laws of logic provide essential, general, and necessary laws for our understanding and thinking, but that doesn't rule out the possibility of another kind of being, whose understanding is constituted differently, so that it thinks according to different laws. If Kant cannot rule out such a being—a logical alien— then it seems, to paraphrase remarks he makes about the categories, the laws of logic "would lack the **necessity** that is essential to" them.[83] Their necessity would be merely subjective, holding for me (and my kind) but extending no further, and I would only be able to say "that I am so constituted that I cannot think" contrary to these laws, which "is precisely what the skeptic wishes most."[84]

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[80](A59/B84; A151/B191. Cf. *WL*, 24:823). One might think here of the difference between the following two cases. First, suppose you intend to walk to the movies, but when you go to leave you find the front door locked, and that you have misplaced your keys. You can't leave, and by the time you find them, you've missed the movie. Second, suppose on the way there you are waylaid. And so you miss the movie. In the first case, you never manage to start walking to the movies. In the second, you never arrive. Arguably, since in both you form the intention to walk to the movies, both presuppose you have the capacity to do this. Now, analogous to the second case, in exercising the understanding, one can form a thought that is false (that is, it does not manage to agree with its object). It leaves the house, as it were, but it never arrives at its goal. And, analogous to the second case, in exercising the understanding, one can fail at forming a whole cognition at all. It does not leave the house. The prospect of material truth or falsity never has a chance to arise.

[81](A59/B84; A60/B84; cf. R1620, 16:40-41; R1628, 16:44-46).

[82](A150/B189)

[83](B168)

[84](B168)

In this final section, I will develop an argument from Kant's texts that show he would rule out the possibility of logical aliens from the perspective of reason, the only possible perspective rational beings have. This argument begins from the unintelligibility of logical aliens, and argues to this impossibility. Kant's argument for their unintelligibility will be roughly the following: It is through thinking that I make sense of things. Thought is, as it were, their measure. And this is also true for thought itself (whether my own or others). Thus, it is only through *thinking* that I could make out the possibility of the laws of thinking being otherwise. But because my thinking is subject to these laws, so is this thought about their being otherwise. And since, *ex hypothesi*, their laws of thought contradict my own, the possibility of logical aliens is unintelligible. To bring out the exact force of this argument, I will then compare the case of logical aliens to the case of beings with other forms of sensibility, and the case of the skeptic, who attempts to reject logical laws.

After an initial look at Kant's texts, however, rather than rejecting the possibility of logical aliens, one might be forgiven for concluding that he embraces it. Consider the following:

> But for the peculiarity of our understanding, that it is able to bring about the unity of apperception *a priori* only by means of the categories and only through precisely this kind and number of them, a further ground may be offered just as little as one can be offered for why we have precisely these and no other functions for judgment or for why space and time are the sole forms of our possible intuition.[85]

> Even were they possible, we could still not conceive of and make comprehensible other forms of intuition (than space and time) or other forms of understanding (than the discursive form of thinking, or that of cognition through concepts).[86]

If we examine these and other passages more closely, however, this initial impression is not borne out.[87] While there is a significant sense in which Kant thinks we must remain agnostic about the possibility of beings with forms of sensible intuition, other than space and time, the same does not hold of thinking beings whose intellect is governed by other logical laws. He considers the possibility both of intellectual non-discursive beings that do not think but intuit, like God, and of discursive beings with forms of sensible intuition other than ours,[88] but he never explicitly considers the case of a discursive understanding who thinks according to other logical laws.

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[85] (B145-B146)
[86] (A230/B283)
[87] (Cf. also e.g., A42/B59; B72; B138-B139; B148; A252; A254/B309-A255/B310; A286/B342-A288/B344)
[88] (cf. esp. B139)

It might have been texts and considerations such as these that led Putnam to claim "the whole point of the Kantian line is that logical necessity neither requires nor can intelligibly possess any 'explanation.'"[89] The unconditional necessity of the understanding's laws is simply the bedrock where our spade turns. Putnam is on to something. Still, there is more to say about why and how Kant thought such an explanation of logical necessity is impossible. For one, while Kant says something like this is true of the functions for judgment, he elaborates these functions from the act of judgment, as the fundamental act of the understanding, and is convinced that we can be certain this elaboration is complete and entire.[90] Surely there is something to be gleaned for our topic from investigating what *a priori* justification Kant might have for this claim to completeness, aside from the apparent empirical fact that no one since Aristotle had discovered more of them.[91]

I am not, however, going to dig into that now. Rather, I want to focus on another passage from the end of the outset of the "Paralogisms," where I take Kant to rule out the possibility of logical aliens through a more general claim he makes about self-consciousness. But before we turn to this, in a more approachable passage later on, Kant says:

> it is obvious that if one wants to represent a thinking being, one must put oneself in its place, and thus substitute one's own subject for the object one wants to consider (which is not the case in any other species of investigation).[92]

Elaborating on this slightly, when I represent a thinking being, I take the being to differ from myself. Nonetheless, there will be other features of this being that I take it to share with me. And I take Kant to maintain it is in virtue of these features that I can represent other thinking beings. Among these shared features there will be those that I take us to both share merely in virtue of being self-conscious thinking subjects. And I will at least substitute these aspects of my own thinking subject, which I take to be necessary in any thinking subject, when I consider the other thinker.

The passage I want to focus on develops a similar thought. It begins as follows:

> Through this I, or He, or It (the thing), which thinks, nothing further is represented

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[89](Putnam, 1994, p. 248, 255)

[90](A69/B94; A64/B89)

[91](*JL*, 9:20; *DW-L*, 24:700).

[92](A353-A354)

than a transcendental subject of thoughts $= x$, which is recognized only through the thoughts that are its predicates, and about which, in abstraction, we can never have even the least concept; because of which we therefore turn in a constant circle, since we must always already avail ourselves of the representation of it at all times in order to judge anything about it; we cannot separate ourselves from this inconvenience, because the consciousness in itself is not even a representation distinguishing a particular object, but rather a form of representation in general, insofar as it is to be called a cognition; for of it alone can I say that through it I think anything.[93]

One of Kant's points here is that in order to make any judgment about the thinking subject, one must deploy that very subject. After all, I do all of my thinking through this subject, and so to think about it, I must rely on it. For this reason, any time I think about this thinking subject, I must always turn in a kind of circle.

A similar point holds of the understanding: whenever I think about it, I must deploy that faculty. That Kant saw this is clear from some of his descriptions of logic. Logic studies the understanding, with the understanding. Kant will thus describe it as "a self-cognition of the understanding and of reason, not as to their faculties in regard to objects, however, but merely as to form."[94] He will even claim that "in logic the question is only, *how will the understanding cognize itself*?"[95] In this sense, Kant was already aware of what Harry Sheffer would dub the 'logocentric' predicament: "*In order to give an account of logic, we must presuppose and employ logic.*"[96]

Similarly, our attempt to think about logical aliens presupposes and employs the laws that govern our thought. The laws of logic are the essential laws of thinking, governing any thinking whatsoever (both as constitutive *norms* for every exercise of the understanding, and as constitutive *criteria* on coherent thought). Our only means of making sense of the possibility that the laws of logic could be otherwise is thus an activity that is itself bound by the laws of logic. We would have to *think* about a possible coherent thought that violates our laws of coherent thought, while this thinking of ours is itself bound by our laws of coherence. For this reason we cannot make sense of the laws of logic being otherwise than they are.[97] To borrow Frege's vivid description, trying

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[93](A346/B404)

[94](*JL*, 9:14)

[95](*JL*, 9:14).

[96]Sheffer (1926, p. 228)

[97]Kant makes an argument with a parallel structure at the beginning of the *Critique of Practical Reason* (*KpV* 5:12; cf. 5:12-14; *Fort*, 20:275-276). There he argues that any attempt to show (synthetic) *a priori* judgements are impossible would be self undermining, because it would itself have to be a (synthetic) *a priori* judgment.

to make out such a possibility is "like trying to jump out of one's own skin."[98] It only leads to confusion.

Still, why hold that because *our* attempt to think about logical aliens ends in confusion, such beings are really impossible? Why not retreat to a weaker agnosticism over their possibility, like Kant does with discursive beings who have other forms of intuition? Returning to the main passage of the "Paralogisms," Kant continues:

> But right at the start it must seem strange that the condition under which I think in general, and which is therefore merely a property of my subject, is at the same time valid for everything that thinks, and that on an empirical seeming proposition we can presume to ground an apodictic and universal judgment, namely that everything that thinks is constructed as the claim of self-consciousness asserts of me. But the cause of this lies in the fact that we must necessarily ascribe to things *a priori* all the properties that constitute the conditions under which alone we think them. Now I cannot have the least representation of a thinking being through an external experience, but only through self-consciousness. Thus such objects are nothing further than the transference of this consciousness of mine to other things, which can be represented as thinking beings only in this way.[99]

The heart of Kant's argument here is, of course, his claim about necessarily ascribing to things *a priori* all the properties that are conditions of our thinking them. Specifically, for our concerns, I am supposed to ascribe to other thinking subjects the property of being governed by the same laws of thought as I am, since this is the only way that I can think of them. I imagine this 'Copernican move'—a kind of move so often at the crux of Kant's philosophy—will be controversial.[100]

The best way to see its justification is through examining why Kant does not go in for agnosticism about logical aliens in the way that he does for beings with other forms of sensibility. In both cases we cannot form any positive conception of such a being. So, like with the laws of logic, it might seem that our forms of sensibility constitute the conditions under which alone we can conceive of or imagine other sensible beings, and thus that, by parity of reasoning, we must ascribe to them *a priori* all the properties that accompany having space and time as forms of intuition.

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[98]Frege (1893, p. xvii). As Ricketts (1985) argues, early Wittgenstein sees this more clearly than Frege (Wittgenstein, 1921, cf. esp. 3.03-3.032). For a detailed description of each stage in the process of thinking through the impossibility of logical aliens, see Conant (1992). For some discussion of how the normativist dimension of this parallels contemporary schmagency worries, see Leech (2015, §6.2).

[99](A346/B404-A347/B405)

[100](cf., e.g., Bxvi-Bxviii, A92/B124-B125)

Yet, Kant does not do this. Rather, he holds we must remain agnostic about the possibility of such sensible beings, while we can exclude the possibility of logical aliens.

This difference is due to the different relation that the laws of logic and the forms of intuition stand in to our intellectual and receptive faculties. It is not included within the precise concept of a receptive faculty that its form must be spatial or temporal—although it is essential to ours—whereas it is included in the concept of reason or the understanding that it will be governed by logic's laws. A being's receptive faculty allows it to be affected by objects that it did not create. It is the means by which these objects are given to it to cognize. Objects are given to us spatio-temporally. It is impossible for us to say whether in some other kind of finite being they might be given in some other way. But if it were, we could not imagine it. Thus, although we cannot form a positive conception of a receptive faculty with another form of sensibility than our own—we cannot say anything positive about how such a receptive faculty would be—we can form a negative conception of it: such a receptivity would *not be* spatio-temporal. And because we can form this negative conception, we are not in a position to suppose that the conditions under which we are given objects are also conditions for every thinking being, even though space and time are the essential forms of our receptivity.

We cannot, however, form a corresponding negative concept of a logical alien, because it is essential to any concept of the understanding or reason that it is subject to logic's laws. As we saw, it is the essential function of the understanding to unite representations into whole cognitions—unities of consciousness. The laws of the understanding are the necessary conditions on doing this (whatever these turn out to be). The understanding of a logical alien would unite representations into whole cognitions according to laws that are different than those governing our understanding. But what kind of whole cognitions would these alien 'cognitions' be, exactly? This negative 'concept' is supposed to be the concept of a whole cognition that violates the necessary conditions on uniting representations into whole cognitions. But that is incoherent. So even a merely negative 'concept' of a logical alien is confused. And there is nothing intelligible to remain agnostic over. Thus, only thinking beings subject to logic's laws are really possible, and Kant's "transference" is justified.

At least, it is justified if reason is the measure of real possibility. In the *Prolegomena* and elsewhere, Kant is explicit that he is presuming reason as his foundation and first principle.[101] This presumption is not unmotivated: reason (or the understanding) is the intellectual faculty that any thinking presupposes. The perspective of reason is the only perspective. To try to reason about what lies outside of reason would, according to Kant, lead to "a mode of thinking in which reason moves against itself."[102]

Nonetheless, he thinks we see philosophers falling into this again and again in the history of philosophy. It starts with dogmatic philosophers attempting to extend the reach of their knowledge beyond its proper boundary—characteristically, beyond the bounds of possible experience, to things as they are in themselves. Then there is an inevitable and appropriate skeptical backlash, which moves against reason "with such violence that it never could have arisen except in complete despair as regards satisfaction of reason's most important aims."[103] And when such skepticism reaches its highest pitch, one cannot refute it, since this skeptic rejects reason and argumentation altogether. So Kant does not try. Rather, he aims at taking away the skeptic's motivation, by showing her that the fundamental questions of metaphysics that drove her to look beyond the bounds of reason can be given a satisfactory answer from within them.[104]

To briefly elaborate this, let me circle back around to yet another way that one might form a contradictory cognition, aside from the ones I mentioned in §3. Kant, remember, pointed out that all that is required to dispel a logical illusion is "attentiveness to the logical rule."[105] But this suggests that in addition to stumbling into an illogical cognition through inattention, there is a more radical way one might form such a cognition: if one rejected the logical rule for the case in question. If, for example, one could reject the principle of determinability, then one could maintain a contradiction, as a modern dialetheist would. There is evidence Kant thought rejecting logical rules like this was possible, at least in a sense.[106] Antinomies are where both sides of a

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[101](*Prol*, 4:274). In this respect, Kant is modeling his own project in metaphysics after pure general logic: both undertake an examination of the form of reason, and presuppose reason as their starting point (cf. e.g., *B*, 10:340).

[102](*Prol*, 4:274)

[103](*Prol*, 4:274)

[104]Engstrom (1994) develops this interpretation of Kant's response to skepticism in detail. I am also partially indebted to a remark in the penultimate paragraph of his essay for the interpretative strategy of this section.

[105](A296/B353)

[106]In at least one place he also seems to speak of maintaining a falsehood after one sees it (*DW-L*, 24:725).

proposition appear true due to reason itself.[107] After grappling with these for long enough, he seems to think one might surrender to "skeptical hopelessness" and decide to accept both sides of the contradiction as true.[108] This falsely-won peace would be "the death of healthy philosophy," and even a "**euthanasia** of pure reason."[109] So not a happy outcome.

Kant, however, maintains hope, even here at the bottom of the pit when the skeptic has rejected logic's laws, so long as she remembers her path in. After all, it is reason that brought the skeptic into the depths of despair, and it is reason that led the skeptic to reject its own fundamental laws. Thus, it is a healthy and natural philosophical drive that led to this dark place. And if the skeptic can see how to satisfy this drive in another way, before hardened misology sets in, there is a way out. It is this path that Kant is attempting to shine a light on.[110] For there is no genuine other side to the laws of logic. All that lies beyond those laws is confusion, nonsense, and failed exercises of the understanding.

6   Conclusion

In the foregoing we have seen how Kant would accommodate the possibility of logical mistakes and reject as unintelligible the possibility of logical aliens. We have also seen that the laws of pure general logic are unconditionally binding norms because illogical exercises of the understanding are mere confusions that do not correspond to some alternate way coherent thought could have been.

Let me close with a remark about how this discussion bears on contemporary work. Here I have prescinded from discussing the details of Kant's logical theory, focusing instead on the nature and status of logic's laws, whatever these turn out to be. Of course, this logical theory, its success,

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[107](cf. A421-422/B449-450)

[108](A407/B434)

[109](A407/B434; cf. *KpV*, 5:120)

[110]Kant, here, is only a latter-day guide in a long tradition tracing back at least to Plato. Plato, after all, reports that Socrates, on his death bed, similarly exhorted his companions to love wisdom and reject misology (*Phaedo*, 89d-91c). Plato, like Kant, traces philosophy and misology back to the same impulse. What corrupts this healthy impulse is that the misologue does not take responsibility for his own failures, and instead blames reason when he falls into difficulties he cannot extricate himself from (which is reminiscent of Wittgenstein's remark about how when we fall into nonsense we tend to blame the words in the proposition, although it is us that have failed to give them meaning (Wittgenstein, 1921, 5.4733)). Plato hopes that this diagnosis will act as a kind of prophylactic, because it will allow his friends to recognize the germs of misology and weed them out before they take root. This is not, of course, a refutation of the misologue, so much as encouragement not to start down that path.

and its completeness, is immensely important for Kant's philosophy, and in the wake of Frege, then Tarski, this theory has fallen onto hard times. How does this radical shift affect the considerations I have been presenting? Would we, for example, be logical aliens to Kant, accepting as we do different logical laws? And are the *a priori* considerations I have been offering thereby refuted with an empirical fact? No. Just as how developments in our theorizing about the physical world do not entail corresponding shifts in the laws of physics, developments in logical theorizing do not entail corresponding shifts in the laws of logic. On a Kantian conception of logic, how could they? The laws of logic are the absolutely necessary laws of thought. We can perhaps make our conception of these more precise, and even recognize that what we once would have taken to be coherent is actually confused, but none of this changes the laws themselves.

Still, since Kant there has been a vast shift in the way that we think about what 'logical laws' are. The contemporary logician does not treat logical laws as the absolutely necessary laws of thought, but as the (basic) theorems and inference rules of a given logical system or calculus. Although the gulf between this conception of logic and Kant's is large, this conception is not wholly unrelated to the traditional conception found in Kant. In recent years many philosophers of logic have made a 'normative turn,' and taken up the study of "bridge principles" connecting such (object-language) logical calculi with central norms of rationality.[111] For Kant, of course, there was no gap to be traversed between logic and its normativity, because the principles of logic were just articulations of the essential rules already governing our thinking. Presuming we follow Kant in thinking there are some such unconditional norms of thought, then I hope to have shown why we might also look to him for a compelling account of their unconditionality, and an explanation of the origin of its peculiar quality. Of course, I have not touched on the potential further difficulties that might face a reconciliation of logical normativism and criterialism today. Still, although such a reconciliation might appear absurd at first, through examining Kant, I hope to have conveyed why this is not so.

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[111]The seminal discussion comes in (MacFarlane, 2004); Steinberger (2017) gives a nice overview.

Note on Kant's texts

In citing the *Critique of Pure Reason* I use the standard A and B edition numbering. For other works I use the standard "volume:page number" of the Academy edition of Kant's works, as well as the following abbreviations for specific works:

KpV = Kritik der praktischen Vernunft
KU = Kritik der Urteilskraft
Eberhard = Über eine Entdeckung, nach der alle neue Kritik der reinen Vernunft durch eine ältere entbehrlich gemacht werden soll
Fort = Welches sind die wirklichen Fortschritte, die die Metaphysik seit Leibnitzens und Wolfs Zeiten in Deutschland gemacht hat?
GMS = Grundlegung zur Metaphysik der Sitten
B = Briefe
Anth = Anthropologie in pragmatischer Hinsicht
VT = Von einem neuerdings erhobenen vornehmen Ton in der Philosophie
En-F = Vorlesungen über Enzyklopädie (Friedländer)
MM = Metaphysik Mrongovius
JL = Jäsche Logik
DW-L = Dohna-Wundlacken Logik
WL = Wiener Logik
BusL = Busolt Logik
PölL = Pölitz Logik
PhiL = Philipi Logik
BlomL = Blomberg Logik
R = Reflexionen

Of course, we do not have a work on pure general logic that was authored and published by Kant, so we must rely on Kant's notes in the logic textbook he lectured from (Meier's *Auszug Aus der Vernunftlehre*), notes taken by Kant's students during his logic lectures, and the logic text prepared by Kant's student Jäsche (at Kant's request) for Kant's views on the subject. I will generally corroborate claims from the logical works with multiple sources. When available, I have usually stuck to the Cambridge edition translations of Kant's works, although some translations may be my own.

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