

TYKE NUNEZ

KANT ON CONSCIOUSNESS OF LOGICAL LAWS AND THE
FORMALITY OF LOGIC

August 2019 draft—please do not cite without permission

Word count: 3,418 body (+440 elsewhere)

Topic Areas: Kant, Kant's logic, Epistemology of logic

Abstract

What is the relationship between logic and the fundamental norms of rationality? I examine Kant's answer by proposing that he takes logic to systematically codify rules that already implicitly govern our thinking and reasoning. Kant calls this codification of the system of logical rules 'artificial logic,' while he calls the rules as they govern everyday thinking 'natural logic.' To investigate these notions I use his account of clear and distinct concepts, arguing that both the transition from natural to artificial logic and from clear to distinct concepts involves taking rules that govern our concrete abilities, and explicitly formulating these. Nonetheless, this analogy can only get us so far. Because pure general logic is a formal science, artificial logic is not properly a matter of making clear concepts distinct in the way that, say, pure natural science makes distinct the concept of a movable object.

THE FORMALITY OF KANT'S LOGIC AND OUR CONSCIOUSNESS OF LOGICAL LAWS

1. According to Kant, logic studies the most general, necessary rules of thinking. He holds that in thinking and reasoning, even if we have no explicit grasp of these necessary rules or laws, we seem to already imperfectly follow them. And although we may not now be able to put them into words, we can come to formulate these rules by reflecting on our own actions and the actions of others. This is often clear in the way he introduces the topic of logic, with his comparisons between logic and grammar. For example, the *Wiener Logik* begins:

Everything in the world happens according to rules[;] as we perceive this in the corporeal world, so do we find it even in the employment of our own powers, although we are not immediately conscious of the rules at all. We attain this employment through mere attempts, and from these very attempts, e.g., teaching someone to speak or to walk, we can derive the multitude of rules.¹

After introducing this general phenomenon—whereby we learn to obey rules gradually through making attempts and imitating others, and only later come to grasp these abstractly—he goes on to discuss the specific case of the rules of the understanding studied in logic:

Every man observes the rules before he can reduce them to formulas. Gradually, however, he attends to what he does. The complex of all these rules is called *logica naturalis*. The science that expounds these rules systematically [is called *logica*] *artificialis*.²

In this way, Kant observes that as with speaking or walking, in thinking we will not be explicitly conscious of its rules. Rather, it is only once we have become skilled in employing the understanding that we might expound these rules systematically, through attending to what we do.

It is Kant's description of this phenomenon of being guided in thinking by rules that one can only later formulate explicitly in logic, that I want to examine. Following a long scholastic tradition, Kant calls logical rules, as they govern our everyday thinking and reasoning, natural logic (*logica naturalis*), while he calls the systematic presentation of these rules within a scientific doctrine artificial logic (*logica artificialis*). According to Kant, a main way that we make a body

¹(*Log-W*, 24:790; see also *Log-D*, 24:693; *Log-Pö*, 24:502; *Log-Bu*, 24:608)

²(*Log-W*, 24:791; see also *Log-D*, 24:694, 696-698; *Log-Ph*, 24:314, 317; *JL*, 9:17; *Log-W*, 24:798; *Refl* 1628 & 1629, 16:44-50; *Refl* 1579, 16:18-19)

of cognition more systematic, and thereby more scientific, is by making its concepts distinct.³ The interpretive proposal that I would like to investigate here is the following: when we study the science of logic, we formulate distinctly the rules that already govern our everyday reasoning. Or, put in Kant’s terms, that in artificial logic we make distinct the rules of natural logic. But what is it to make rules distinct according to Kant? We will see that clear concepts guide action, and that in making them distinct we formulate the rules governing how we apply them. Similarly, we will see that for Kant the rules of natural logic guide thinking, and that in artificial logic we formulate these rules.⁴ Nonetheless, despite this commonality, we will also see that because logic is a formal science, its task cannot properly be characterized as making clear concepts distinct, and so my interpretive proposal will not stand without important qualification.

2. According to Kant the distinction between a clear and distinct representation is a matter of its “degree of consciousness.” The lowest of these grades of consciousness is obscurity. An obscure representation is one that either one does not know one has, or one is only aware of indirectly, through an inference.⁵ Consciousness or awareness (*Bewußtsein*) of a clear representation, however, does not require an inference, but is immediate. And with a distinct representation, one is not only aware that one has it, but is also aware of its parts. In this way, distinctness consists in clarity of the parts.⁶

Kant applies these grades—obscurity, clarity, and distinctness—to both intuitions and concepts. For example, looking through a telescope, one not only intuits the Milky Way, but also distinguishes some of the stars and solar systems that make it up. In this case, one’s intuition of the Milky Way

³Especially through definitions (*JL*, 9:59, 139-140; see also A727/B755-A732/B760).

⁴Two interpreters who have pointed to some of the same texts I do in support of viewing natural and artificial logic as continuous are Kurt Mosser (2008, p. 79) and Giorgio Tonelli (1994, p. 44). In contrast, Haoping Lu-Adler (2018, ch. 4, §3.3; 2016) has stressed the discontinuity and even difference in kind between the normativity of natural and artificial logic. The texts Lu-Adler focuses on are places where Kant seems to be thinking of natural logic as empirical, and artificial logic as *a priori*. There is something right to both interpretations. Natural logic, because it belongs to common understanding or reason, does not distinguish carefully between its empirical or pure parts. Properly speaking, however, the artificial science of logic only has a pure part (*G*, 4:387). So those rules of natural logic that are empirical will not have a place in it. Still, so long as one stays within the *a priori* branch of natural logic, artificial logic will represent systematically its same rules.

⁵(*Anth*, §5, 7:135; *Met-Mr*, 29:879)

⁶(*Log-W*, 24:844-848, 834; *Log-Pö* 24:571; *Log-D* 24:728-729; *JL*, 9:34; R2385, 16:338; *Log-Bu* 24:617). For a fuller treatment of the three degrees of consciousness than I will be giving here, see Grüne (2009, ch. 1.3), and for some treatment of how Kant’s appeal to these degrees is rooted in the tradition, see Wunderlich (2005).

is distinct because one's intuitions of its parts are clear. In the case of concepts, the parts are the other concepts that together constitute the concept in question. Suppose I have a number of things: a copper pot, a bronze statue, and an iron beam. Comparing these, I notice and become conscious of their common feature—their metalness. At this point my concept <metal> is clear: I am conscious of the metalness that all of these things share. With a clear concept like this, I can use it to go on and recognize more metals, and I manifest my clear consciousness of the concept—my awareness of it—in this concrete ability, this skill. I attain a higher degree of consciousness of a concept, however, if I am not just able to concretely deploy it in subsuming, but am also conscious of the other features in the concept: i.e., those features things must have, in virtue of which the concept will apply to them. In this case the concept is distinct.⁷ For example, my concept <metal> will be more distinct when I not only can recognize metal things, but within <metal>, I think of: (1) solidity, (2) opaqueness, and (3) conductivity.⁸ In this way, a concept is distinct not only when I can use it to pick out the things that fall under it, but also when I know *why* I use it to pick out those things and not others.⁹

3. This distinction between clear and distinct consciousness can shed light on Kant's distinction between natural and artificial logic. Our everyday natural reasoning, according to Kant, consists in forming concepts, making judgments, and drawing inferences. One aspect of this is recognizing and assessing concepts, judgments, and inferences, merely as the kinds of thoughts that they are—i.e., recognizing and assessing the logicity of both our own thoughts and the thoughts of others. For this reason, as we can assess whether something falls under a concept or not in virtue of having it, we can recognize and assess the logicity of concepts, judgments, and inferences in virtue of our natural powers of reasoning. Before we have made our concept of metal distinct, we may not be able

⁷(e.g., *JL*, 9:34; *Log-W*, 24:834, 844-848; *Log-Pö*, 24:571; R2385, 16:338)

⁸(see *Log-Bu*, 24:617; *JL*, 9:35).

⁹A sympathetic reader might wonder, am I really amplifying my cognition of *why* a concept applies or not by spelling out the rules by which I myself use it? In places Kant distinguishes the analytic process of making distinct a concept, from the synthetic process of making a distinct concept, by way of making distinct its object (e.g., *JL* 9:63-64; *Log-W* 24:845, 916; *Log-Ph*, 24:417). This distinction is critical for understanding the development of material sciences in which the topic of study is distinct from the cognitive faculty through which it is being studied, and within this context it is synthetic distinctness that properly develops the science since it is ampliative. In the case of logic, however, because it is the science of the form of thinking, the distinction between analytic and synthetic distinctness does not have a place. And for this reason, I abstract away from this detail in developing the analogy with logic.

to say why something isn't a metal, and similarly before we have articulated the rules governing our use of concepts, judgments, and inferences in artificial logic we may only, e.g., know that an inference is invalid, not why. Nonetheless, there are rules governing both our use of <metal> and our natural logical assessments of thoughts, and by reflecting on this use or assessment we can make *why* we do what we do clearer.

We can push this analogy further by noting that in both cases, the difference between the levels of awareness or consciousness in question is a matter of how we represent the rules governing our use of a thought. With the clarity or distinctness of concepts like <metal>, it is the consciousness of their specific content or meaning (*Inhalt*) that is in question. This content (e.g., <solidity>, <opaqueness>, <conductivity>, etc.) is contained in such concepts (e.g., <metal>) and makes them the concepts they are. Since a concept will contain other concepts, and these also indicate abilities we have for classifying things, the content of the concept will determine the rules for how it gets used. For example, we can use <solidity> and <opaqueness> to pick out solid or opaque things. And since <metal> contains <solidity> and <opaqueness>, the rules governing picking out solid and opaque things will also govern picking out metal things, because metals are a sub-class of things that are solid and opaque.

With the rules of natural logic, however, it is the consciousness of the generic rules governing all thoughts that is in question. These rules are independent of the specific content of any given thought and instead dictate how any representation of the same kind can combine with other representations. For example, take the concept <metal>. In having this concept, not only can I manifest my possession of it through picking out metal things, but also merely because it is a concept, I can use it in judgments. So, say, if I also have the concept <heavy>, I can judge 'this metal is heavy.' This generic ability to use the concept in judgments does not depend on its specific content, but holds of every concept equally. Further, in turn, I can also use this judgment in inferences. So, for example, if I also know that heavy things fall, then I can infer 'this metal will fall.' In this way, although some of the abilities I have when I possess a concept depend on the specific content of that concept, others depend only on its being a concept. These latter generic abilities come along with having any thought—concept, judgment, or inference—merely in virtue

of the kind of thought that it is. In reflecting on these generic abilities, I come to formulate the rules governing their exercise. And this is how I develop the rules of natural logic governing my thinking into an artificial science, formulating these general rules and grasping their systematic interconnections. So just as we make a particular clear concept distinct by making explicit the specific rules governing its particular use, we make natural logic into artificial logic by making explicit the generic rules governing the use of all concepts, judgments and inferences.

4. At this point it might be tempting to pursue an interpretation on which artificial logic makes distinct something we represent merely clearly in natural logic. There are two options for this strategy. The first proposal maintains that in natural logic we have a clear enough consciousness of logic's laws for these to guide our thinking and reasoning, but we only make these laws distinct in artificial logic. Kant seems to claim something like this in an old note Adickes dates from the mid 1750s. In this Kant claims we have a "confused," so indistinct, representation of logic's laws that is good enough to guide our actions in thinking, but then we make these "distinct" in artificial logic.¹⁰ A major problem with this strategy, however, is that in later passages Kant repeatedly claims that before these laws are made explicit in an artificial science, we are often not conscious of them at all,¹¹ which suggests that we do not even have the kind of confused clear consciousness of them of the early note.

A second better option proposes that (1) we exhibit a clear consciousness of our *concepts* of <concept>, <judgment>, and <inference> in our natural assessments of thinking and reasoning, and that (2) the task of pure general logic is to make these clear concepts distinct. Although Kant never explicitly endorses this view, it might seem there is something to be said for it, given the nature of clear and distinct concepts. After all, in our everyday reasoning, we might seem to exhibit a clear consciousness of the concepts of <concept>, <judgment>, and <inference>, insofar as we naturally recognize our thoughts as concepts, judgments, or inferences, because we know how to use these cognitions in further thoughts, according to the rules of natural logic. That is, for example, we know how to use the *concept* <metal> or the *concept* <heavy> in further judgments

¹⁰(*Ref* 1562, 16:3-4). Thanks to OMITTED for pointing me to this passage.

¹¹(*Log-W*, 24:290-791; *Log-Bl*, 24:27; *JL*, 9:11). Thanks to OMITTED for pointing me to these passages.

and inferences. This seems analogous to how we have a clear concept of <metal> when we know how to recognize the difference between metals and other kinds of bodies. And just as how we make the concept of metal more distinct when we judge that ‘metals are opaque,’ one might be tempted to think that we make the concept of <concept> more distinct when we judge that ‘concepts can serve as predicates for possible judgments.’¹² In the one case we explicitly attend to the fact that we take metals to be opaque, while in the other we explicitly attend to the fact that we take concepts to serve as predicates. And so in each case we seem to make explicit the rules governing our use of <metal> or <concept> respectively.

This proposal also does a better job of making sense of the later texts. This is because although these clear concepts guide our use of thoughts, we are not conscious of the rules governing this use until we formulate these in an artificial logic. Although we have clear concepts of <concept>, <judgment> and <inference>, we are not conscious of the laws governing the use of these concepts. After all, if we were already conscious of these rules, then these concepts would already be distinct. Making these concepts distinct, on this proposal, is the task of artificial logic. So as later texts claim, we are not conscious of the laws of logic at all, even though they guide our thinking, until we formulate them in the artificial science of logic.

5. I think, however, that we should reject this proposed interpretation. In the first instance, for Kant cognition is material. It is cognition of an object. Its matter is the object the concept is about, while its form is “the way in which we cognize the object.”¹³ In material cognition the exercise of the understanding is conditioned by affection—e.g., sensation or feeling. The two main branches of material cognition are theoretical and practical, and Kant distinguishes such material cognition from merely formal cognition.¹⁴ This formal cognition abstracts away from all objects of cognition and studies only its form, “the formal rules of all thinking.”¹⁵ This formal cognition is pure general logic, which is a self-cognition of the understanding and reason.¹⁶

Our proposed interpretation, however, does not construe pure general logic as formal cognition,

¹²(A69/B94)

¹³(*JL*, 9:33)

¹⁴(Bix, *G*, 4:387; 20:195)

¹⁵(Bix)

¹⁶(*JL*, 9:14)

but as a special kind of material cognition of formality. This is because it treats the purported concepts of the kinds of thoughts as having both a form and a matter. Just like how the objects of <metal> are metals, or of <virtue> are virtuous actions, the purported concept <concept> would have concepts as its objects, its material. And since <concept> would be a concept, it would have the same form as any concept. So this form cannot explain whatever sense in which it could be said to be merely ‘formal.’ Rather, in so far as this proposal can account for the formal nature of our representation of concepts, this nature must stem from the special character of its material—from the fact that concepts are thoughts.

This, however, is not how Kant describes the topic of general logic. For example, he says,

General logic abstracts, as we have shown, from all content of cognition, i.e., from any relation of it to the object, and considers only the logical form in the relations of cognitions to one another, i.e., the form of thinking in general. (A55/B79)

Logic begins with a body of cognitions that are related to one another. It then studies the relations between these cognitions, but not their material relations—not the relations they stand in because of their objects. Rather, it studies the relations that these cognitions stand in because of the kinds of cognitions that they are—the relations they stand in merely as concepts, judgments, and inferences. These are their formal relations. They are the formal relations of material cognitions.

This is very different than the proposed interpretation. On the proposed interpretation, logic has its own special objects of study—the kinds of thoughts—and we have cognition of these, in the full blooded material sense of having concepts of them (<concept>, <judgment>, and <inference>). On the account given in this passage, however, our representations of the kinds of thoughts are merely representations of the forms of material cognition—the forms of concepts, judgments, and inferences. The matter of concepts, judgments, and inferences, of course, is whatever their objects are. And so logic does not have its own special objects of study that one can form concepts of and cognize materially; it is not its own ‘formal’ branch of *material* cognition. Rather, its formality is, as it were, deeper within it. It is formal cognition because it is cognition of form, abstracting from matter. It studies only the form of material cognitions, but is not itself material cognition. And so it is not in the business of making distinct a special kind of ‘formal’ material concept—the concepts of the kinds of thoughts—but is in the business of making clear the rules that govern

material cognition, merely in virtue of their form.

Still, even if forms of thinking are not to be treated as material concepts to be made distinct, we should not let this occlude the similarity between how we make these concepts distinct and the task of artificial logic. Kant will characterize the faculty for thinking as the faculty of rules because we use it to look for rules,¹⁷ and at the outset of most of his logic lectures he will point out that everything in the world proceeds according to rules, including the exercise of our own powers.¹⁸ Concepts are the rules that the understanding discovers as it examines the appearances given to it by sensibility. And logic consists in the rules governing the exercise of the understanding itself. With both, we first possess the rules concretely in a way that guides what we do—in how we treat either things or thoughts—and it is only later that we can come to formulate these rules. After we have done this we can analyze them to find component rules within them, or their systematic interconnections. And it is this that we do when we either make our clear concepts distinct or formulate the rules naturally governing our understanding systematically in artificial logic.

6. I have presented one part of Kant's account of our formal cognition of logical rules. Just as we can present systematically the implicit rules of grammar that we already find ourselves following and enforcing, we can also present the natural laws of logic that govern our thought systematically in an artificial logic. This process is a variation on the way that we come to a distinct understanding of concepts. In both cases, our clear consciousness of the rules in question guides our actions, and through reflecting on these we can formulate them explicitly. On this view, then, the science of logic studies, codifies, and systematizes rules that already govern our everyday thinking and reasoning. And the relationship between the most general norms of rationality governing this thinking and reasoning and logic is straightforward.

¹⁷(e.g., A126; *Log-W*, 790)

¹⁸(e.g., *Log-W*, 790; *Log-D*, 24:693; *Log-Pö*, 24:502; *Log-Bu*, 24:608)

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