

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

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Abstract

I examine how Kant understood the formality of pure general logic, which is what distinguishes it from other sciences. This formality is grounded in his conception of the understanding as the faculty for thinking, and as the faculty that contributes the form to cognition. Pure general logic is formal cognition or formal philosophy because it studies the laws of thinking that make thinking what it is, as thinking. I investigate how we should understand this task of pure general logic by proposing two plausible interpretations of it, one that is more, another that is less, Fregean. On the more Fregean proposal, pure general logic makes distinct the concepts <concept>, <judgment>, and <inference>, while on the less Fregean proposal it merely articulates the system of the laws that govern material cognitions in virtue of their form, or what they are as thoughts. Ultimately, I argue that the crux of the difference between these proposals comes down to how they understand Kant's conception of consciousness or awareness (*Bewußtsein*), which is "a representation that another representation is in me" (*JL*, 9:33). According to the more Fregean proposal this is a second-order representation. According to the less Fregean proposal consciousness is formal. It is the form of the original representation and is what makes the representation what it is. I argue that ultimately Kant's system of logic dissolves on the more Fregean interpretation, and that the less Fregean proposal is truer to Kant.

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§1 - Introduction

For Kant, logic is “the science of the rules of the understanding in general” (A52/B76). He conceives of it as “formal philosophy” (*GMM*, 4:378). Our topic will be what he means by this and why he takes the distinctive feature of his pure general logic to be its formality.¹ Although this sense may be a distant ancestor of our contemporary conception of the “formality” of logic or mathematics, we will see that it has more affinity with the ancient conception of something’s form as its essence, or as the answer to the question “what is it?” This is because, according to Kant, although thinking is the means by which we cognize any object, logic studies what thinking itself is. This ancient conception of “form” is quite distant from what we now mean when we claim that logic is “formal.”²

There are two reasons we should want a better understanding of Kant’s conception of the formality of pure general logic. First, modern Kant scholarship from Strawson (1966) and Bennet (1966) down to Allais (2015) and Stang (2016) is infused with a post-Fregean way of thinking about logic and logical categories, like that of ‘concept’ or ‘object’. Because Kant holds that logic is the most abstract philosophical science and the science from which all other more determinate philosophical sciences inherit their structure, coming to a more Kantian understanding of it should help us in understanding the core of his philosophical system.

Second, Kant scholarship aside, in Kant’s conception of formality we will find an explanation of the logical and why it is distinct from the non-logical.³ This explanation will be

¹ My reading of the formality of Kant’s logic will be at odds with MacFarlane’s negative reading (2002, 2000). According to MacFarlane, pure general logic is formal because it is *not* about, or abstracts away from, objects, where by ‘object’ he means something close to ‘object’ in Frege’s sense. As we will see, both readings of formality that I will contrast incorporate this negative conception of formality. Nonetheless, in calling logic formal Kant is not merely saying what logic does not study, but, as we will see, he is giving a positive characterization of logic that situates this science in relation to other material sciences in an overall system of knowledge. In this sense, the fundamental feature of logic, for Kant, will not be its universality or generality, as MacFarlane claims, but it’s formality, as MacFarlane denies, although the sense of ‘formality’ in question is not MacFarlane’s. My (2021) presents a detailed analysis of the way in which MacFarlane’s reading is misleading. In this connection, note also that Lu-Adler delineates three negative senses of ‘formality’ in Kant, one of which corresponds to MacFarlane’s (2018, p. 149). In my critical notice about her book, I discuss how these three negative conceptions of formality stem from the positive conception of formality that I develop here (2020, §3).

² Some contemporary discussions of logic’s formality: MacFarlane (2000), Novaes (2011, 2012, 2014).

³ Arguably, the best contemporary attempt to formulate a criterion of logicality remains Tarski’s 1966 lecture “what are logical notions” (1986). Tarski’s thought is that because logic is the most general of all disciplines, its notions should be preserved even when the objects of the base domain are swapped arbitrarily. See Novaes (2012) for a critical discussion of Tarski’s strategy of permutation invariance for demarcating logical constants.

more substantive than a mere appeal to universal validity or generality.⁴ In part because such an explanation is otherwise lacking, right now in the philosophy of logic, anti-exceptionalism, pluralism, and even nihilism about logical principles have become commonplace positions, at least if we take logic to be, as Kant did, something like the study of the laws of thinking.⁵ For those who think that because reason is, by its nature, universal in its scope, it should be governed by laws of thinking that we can all recognize and which govern all thinking, and that the study of these laws is the proper remit of logic, a Kantian explanation might offer an apposite response to these skeptical views. Here my aim is not to develop this kind of response within the contemporary discussion, but to understand Kant's quite radically different kind of position.

I will proceed by contrasting two proposals for how to interpret the task of pure general logic, one that is more Fregean, another that is less so. The distinction between these will turn out to depend on quite different conceptions of logic's formality. I will argue that although both interpretations are tempting, the less Fregean one is truer to Kant.⁶ Before I turn to these proposals, I will briefly examine what Kant means by claiming that logic is "formal cognition" in a way that should largely be agreed upon ground between the two proposals (§2). The distinction between the two proposals depends on how they each understand an analogy between making our consciousness of clear concepts distinct, and bringing the rules that govern our everyday thinking and reasoning to consciousness by articulating the laws of logic. In §3, I will introduce this analogy, along with the more Fregean proposal. According to this proposal the task of logic is to make the concepts of kinds of thoughts distinct. This will face the objection, however, that on it logic is not really formal cognition, but is material cognition of 'formality.' Presenting this objection will provide an occasion to introduce the less Fregean proposal, on which logic is not making distinct material

⁴ As Steinberger argues (2019, p. 17), so long as the logical monist only has this generality of logic to rely on—its universal validity for all objects—the monist and pluralist look to be on all fours. If the monist could provide an account of logical principles that distinguishes them not merely through their generality, then they may be able to break the stalemate. Kant provides this, although his logical setting is quite different.

⁵ Martin and Hjortland (2022) offer a nice representative presentation of the way that many contemporary anti-exceptionalists view the traditional features of logic that were thought to make it exceptional. They distinguish a number of varieties of anti-exceptionalism, as well as locate many of the contemporary exceptionalist and anti-exceptionalist views within this taxonomy. For an argument as to why we should be dissatisfied with their view of some of these traditionally "exceptionalist" features of logic—especially the way in which MacFarlane (2000, 2002) presents the relationship between logic's generality and formality in Kant—see, again, my (2021).

⁶ In developing the more Fregean interpretation, I will have in mind remarks from Huaping Lu-Adler and Clinton Tolley. I will discuss these in the notes below. Tolley has also graciously shared an unpublished manuscript where he fills out the relevant dimension of his interpretation. Although I go beyond what he does in it, I hope that my presentation of the Fregean interpretation is consistent with, and true to the spirit of, Tolley's draft.

concepts of kinds of thoughts, but is presenting the system of laws that govern material thoughts, in virtue of their form (§4). In §5, I reply to the objection on behalf of the more Fregean proposal. This will put us in a position to, in §6, turn to the crux of the distinction between the two proposals—how they each interpret the notion of consciousness—and why we should ultimately prefer the less Fregean proposal. Finally, in §7 I will spell out what Kant would take to be a major drawback not only of the more Fregean proposal, but of all of logic after Frege: that these logical systems are not closed and finished.

§2 – The task of logic as formal philosophy

In this section we will stay as neutral as possible between our interpretive proposals. Both begin from Kant’s claims that logic is the science of the rules of the understanding and reason and that we investigate these rules with these faculties. In support, both will cite his claim that logic is a kind of self-knowledge or “self-cognition of the understanding and of reason merely as to form,” where “the question is only, how will the understanding cognize itself?” (*JL*, 9:14).⁷ By the end of the essay we will have a better sense of how this characterization of logic is related to its status as “formal philosophy” or “formal cognition” (*GMM*, 4:378). In this section we will introduce Kant’s distinction between our thinking and intuiting capacities and his distinction between form and matter, before we develop a preliminary account of logic’s formality through examining the specific place that logic, as formal philosophy, occupies within Kant’s system of sciences.

The system of sciences, according to Kant, arises because of the differences between our faculties of cognition. Since Aristotle, and arguably Plato, a classic solution to the problem of the unity of the one and the many has been hylomorphism: distinguishing between a multitudinous material and a unifying form. Although this kind of solution has now fallen out of fashion, a solution of this kind regarding the diversity and unity of cognition or knowledge is at the core of Kant’s distinction between sensibility and understanding, which provide, respectively, the material and form of theoretical cognition.

Of course, Kant uses the concepts of form and matter in many contexts, with many senses. Indeed, he claims that matter and form “are two concepts that ground all other reflection, so inseparably are they bound up with every use of the understanding. The former signifies the determinable in general, the latter the determination” (A266/B322). For this

⁷ See also: *Log-W*, 24:790; *Log-D*, 24:693; *Log-Pö*, 24:502; *Log-Bu*, 24:608.

reason, we should be surprised neither when, reflecting on sensibility itself, Kant distinguishes its forms, space and time, from its material, sensation (A43/B60), nor when, considering acts of the intellect like judgments, he distinguishes the relating copula in the judgment as its form and the concepts related as its matter (A266/B322). Nonetheless, our focus will be on the specific sense in which the understanding provides the form or determining element of cognition, while sensibility provides its matter or determinable element (compare, e.g., B128, B137, B151-152, and Engstrom, 2006). What we will see is that logic is formal because it studies the unifying form of cognition, while abstracting as much as possible from its material.

Elaborating this contrast between understanding and sensibility, Kant separates two fundamental sources of cognition or knowledge in the mind, “the first of which is the reception of representations (the receptivity of impressions), the second the faculty for cognizing an object by means of these representations (spontaneity of concepts)” (A50/B74). The former faculty, sensibility, is the faculty for sensing and intuiting. The latter faculty, the “understanding in general,” is the faculty for thinking: for conceiving, judging, and inferring (A131/B169, A51/B75). Through sensibility “an object is **given** to us;” through the understanding “**it is thought** in relation to that representation” (A50/B74).⁸ Intuitions are “immediately related to the object” and “singular;” concepts are related to their objects mediately, “by means of a mark, which can be common to several things” and are general (A320/B376). Only from the unification of intuiting and thinking “can cognition arise” (A51/B76). The cognized object must both be given to us in intuition and be thought through a concept, which represents its relation to other objects. The understanding is the faculty of cognition properly speaking, because sensibility only provides the material of cognition, while the understanding goes through, takes up, and combines the manifold of intuition so that a cognition is made out of it (A77/B103).

How, then, should we understand the task of pure general logic? Preliminarily, Kant claims that unlike transcendental logic, which is concerned with the origin of representations, pure general logic “considers representations [...] merely in respect of the laws according to which the understanding brings them into relation to one another when it thinks, and therefore it deals only with the form of the understanding, which can be given to the representations wherever they may have originated” (A56/B80). For this reason, pure general logic treats,

⁸ Kant moves fairly freely between speaking of thinking and thoughts, or the activity and the representation that the activity produces, because both activity and product are ongoing exercises or acts of a faculty for thinking. I will also move freely between these. Compare my 2019 (esp. note 16) for further justification.

positively, the laws governing how the understanding brings any representations into relation to one another when it thinks, regardless of their origin. He goes on to 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/B84), where this analysis involves “dividing the mere form of cognition into concepts, judgments, and inferences, and thereby achieving formal rules for all use of the understanding” (A132/B171-A133/B172).⁹

If we are to understand pure general logic as analyzing the formal business of the understanding and reason, and thereby achieving formal laws governing how the understanding brings any representations into relation to one another when it thinks, in what sense is logic cognition? What kind of object of study is the understanding or thinking when it studies itself in logic?

There is a sensible dimension to thinking and thoughts. Kant, for example, glosses “the objects of my inner sense” as “(my thoughts)” (A371), and one way in which we might study thoughts is through the way they affect us in inner sense—the faculty for sensing ourselves and our inner states. Whether or not non-thoughts are also encountered in inner sense, in it we sense thoughts, and because this dimension of thoughts involves sensation, it is empirical (A20/B34; A50/B74). In places Kant allows for an empirical, “applied” branch of logic (A53-54/B77-78), where we study how and why actual thinking, encountered empirically, accords with, or fails to accord with, the laws of logic proper. In other places, however, he claims “logic can have no empirical part, that is, no part in which the universal and necessary laws of thinking would rest on grounds taken from experience; for in that case it would not be logic, that is, a canon for the understanding or for reason, which holds for all thinking and which must be demonstrated” (*GMM*, 4:378). Although these passages appear in tension, this is mitigated by the fact that Kant ultimately takes the applied branch of logic to be a part of empirical psychology and so not properly logic, although such a study has a place. On both of the interpretations we will develop, applied logic is not their topic, and both can agree that insofar as logic is pure, it abstracts away from the contingent empirical sensations of thoughts.

A priori intuition will also not aid us in our search for the object of study of logic. Although Kant identifies time as the *a priori* form of inner sense, or the form of the inner intuition of our self and our inner state (A33/B50), because it is the form of inner sense or

⁹ A more textually detailed discussion of these passages can be found in my Lu-Adler review (2020, §3).

intuition, it too will only concern the sensible dimension of thoughts. It will concern the *a priori* dimension of the way in which we are affected by thinking through receptivity, but it will not help us with the activity of thinking as it would be studied by the understanding alone, apart from sensibility.

We might wonder, however, is it possible for the understanding study itself alone, apart from intuition? Kant thinks so, but notice how different this kind of study must be from either the study of the objects of experience, be it in empirical physics or psychology, or the *a priori* forms of these objects, as, say, in *a priori* physics or geometry. In those cases, we study nature or an *a priori* dimension of nature, and its laws. This object is either given to us through sensibility or concerns the conditions on the way those objects can be given to us through sensibility. In logic, however, the understanding studies itself and its own acts of thinking, not as empirical psychology would, as they happen to appear in inner sense, but as they *must be* in order to be acts of thinking at all. It is not concerned with the sensible dimension of thinking, but its *a priori* nature and structure, as the kind of activity that it is. The means by which we carry out this study, then, will not be immediate intuition, but reflection on the nature of thinking, and on what thinking must involve, in order to be what it is.¹⁰

There are two pure branches of logic in this sense: Kant's transcendental logic, which belongs to metaphysics, and pure general logic, which is our main concern. Both have as their first principle a non-sensible relation to oneself in thinking that Kant claims "is the highest point to which one must affix all use of the understanding, even the whole of logic" and which he will identify with "the understanding itself" (B134n). This highest principle is the synthetic unity of apperception, which is the original combinatory power that must be at work combining my representations, in virtue of which they are all mine. As the original combinatory power, it is at work both in the combinations or syntheses of the imagination and thinking. The syntheses of imagination combine intuition into intuition or images, and are often unconscious (A77/B103-A78/B104, A141/B180-181). The syntheses of thinking combine representations into one representation, of which we are conscious.¹¹ There are three

¹⁰ We need not here wade into whether the laws of logic are constitutive, (a) insofar as they are norms that must govern any act of the understanding—that is, norms that must govern how representations ought to be combined in thinking or cognizing—or (b) insofar as thoughts must accord with these laws to be thoughts or cognitions at all. Both of the interpretations of pure general logic that we will be contrasting might be construed in either way. Indeed, although Lu-Adler and Tolley would both endorse our more Fregean interpretation, Lu-Adler (a) takes the laws of Pure General Logic to be normative (2016, 2018), while Tolley (b) takes according with these laws to be requisite for being a thought or cognition at all (2006). My (2019) presents many of my thoughts on this topic.

¹¹ Because the understanding is the spontaneous faculty of thinking (A50-51/B74-75), in some places Kant will define this faculty as the faculty of synthesis, which is "the action of putting different representations together

varieties of thinking: conceiving, judging, and inferring. Characteristically, these involve combining intuitions into concepts, concepts into judgments, and judgments into inferences. In each case, Kant seems to think of the representations combined as the material, the determinable, while the way in which they are combined is the form, the determination. Although only certain kinds of representations can be the material for each of the different kinds of thoughts, it is the way in which the material is combined that make the thought in question what it is: a concept, judgment, or inference.

In introducing the distinction between transcendental and pure general logic, Kant claims that general logic abstracts “from all content of cognition, i.e. from any relation of it to the object, and considers only the logical form in the relation of cognitions to one another, i.e., the form of thinking in general” (A55/B79). Transcendental logic, however, does “not abstract from all content of cognition” in this way, but contains “the rules of the pure thinking of an object” (A55/B80). The way to understand this contrast, we will see, is in terms of the difference between two dimensions of the combination involved in thinking: the combination of representations into one thought, merely as thought, and the combination of representations of an object into one thought, now as cognition of the object.¹²

To elaborate this, it will help to contrast the concepts belonging to mathematics and transcendental logic, both of which are branches of theoretical cognition, which is always grounded in intuition. In mathematics, concepts are “exhibited *in concreto* in pure intuition,” which makes “anything unfounded and arbitrary instantly” obvious (A711/B739). With these *a priori* concepts, they already contain a pure intuition in themselves (A719/B747), insofar as

with each other and comprehending their manifoldness in one cognition” (A77/B102-103). Seen this way, the understanding will encompass the imagination, which is a faculty of synthesis (A78/B103, B151-152). Specifically, the imagination is the faculty for synthesizing the manifold of intuition into further intuitions or singular representations. For this reason, it should be unsurprising that in other places, the understanding will exclude the imagination because the understanding is the faculty of thinking, or cognition through concepts—general representations (A69/B94). Because our topic is pure general or “formal” logic, in discussing the understanding, I usually have in mind the faculty for thinking or discursive cognition in general, which encompasses all of the higher faculties of cognition (“understanding, power of judgment, and reason”) but which excludes the imagination (A130-131/B169-170).

¹² This is not to claim that all thoughts are cognitions, or even that all thoughts have an object in the sense that requires the object to be thought through the categories, as concepts of an object in general. Cognizing an object requires being able to prove its possibility, while “I can think whatever I like, as long as I do not contradict myself” (Bxxvi). Still, thoughts are first and foremost—or characteristically—cognitions. Furthermore, despite the headings of the categories structuring the table of nothing, and although the categories are of use in merely thinking of *ens rationis* (e.g., souls, God), it is not clear that they are used in thinking about the other “nothings” of the table of nothing (A290-A291/B347-B348), and so it is not clear that the categories are used in all thinking (contrast, Tolley, 2012, esp. p. 435-436). When I speak of ‘objects’ in the text, I usually include *ens rationis*, but not the *nihil privativum* (e.g., a shadow), *ens imaginarium* (e.g., pure space and pure time), nor the *nihil negativum*, (e.g., a square circle).

they are rules for constructing their intuitions. The *a priori* concepts that form the basis of transcendental logic, however, contain “nothing but the synthesis of possible intuitions, which are not given *a priori*” (A711/B739). So unlike mathematics, these concepts do not contain the means for constructing, and thus producing, their intuitions. Rather, they are rules governing the combination of possible intuitions, which intuitions must be given from elsewhere. Thus, while the concepts of mathematics can produce the *a priori* material for the concept out of themselves in intuition, the basic *a priori* concepts of transcendental logic will only contain an *a priori* form for combining material from elsewhere.

Both pure general and transcendental logic are concerned with the form of cognitions—thinking—and so are concerned with the combination or synthesis of the material in the thought, rather than the material or intuition itself. Transcendental logic, however, studies the *a priori* rules of the combination of representations in thinking as cognitions, as they relate to objects.¹³ Thus, it studies *a priori* rules governing the combination of intuitions, concepts, and judgments, if they are to be cognitions. Because it abstracts away from intuition or the material of cognitions itself, and only treats the laws of its combination, it is a branch of logic: it is a science of the rules of the understanding and thinking. It is, however, a branch of logic that is concerned with the rules of the understanding and thinking in relation to objects and the intuitions of objects. In contrast, pure general logic is not concerned with the form of thoughts as cognitions related to objects through intuition. Rather, it is concerned with the form of thoughts merely as thoughts, abstracting away from how or whether they are ultimately so related. It will study the laws governing the combination of intuitions into concepts, concepts into judgments, and judgments into inferences, independently of the origin of these representations, merely as the kinds of representations that they are. Thus, while transcendental logic studies the laws of thoughts as cognitions of objects, pure general logic studies the laws of thoughts merely as thoughts, abstracting away from whether these thoughts are ultimately cognitions. And while they both study the form of thinking, transcendental logic studies the form of thinking of objects and pure general logic studies the form of thinking as thinking. In both, this form can be understood as answering the ancient question “What is it?” But in transcendental logic the form specifies the laws

¹³ Because transcendental logic is cognition, first and foremost these objects will be appearances, although in delimiting the boundaries of cognition, it also involves thinking of non-sensible objects. More on this below.

constitutive of thinking as cognition, while in pure general logic the form specifies the laws constitutive of thinking as thought.¹⁴

Let us return to our question about the sense in which logic is cognition. There is a fundamental difference between pure general and transcendental logic. Although transcendental logic might fairly be described as formal in the sense that it studies the form of thoughts as cognitions, because it is concerned with the laws of the synthesis of possible intuitions, it still has a connection to intuition. As a result, so long as the requisite sensible intuitions are actually given (B148-149), the concepts of transcendental logic will be theoretical cognition, which is of objects in nature and requires both intuition and concept (A51/B76). In what sense, however, will the representations of pure general logic count as cognitions?

Here it will help to broaden our view. Kant distinguishes three kinds of rational cognition in the preface to the *Groundwork*:

All rational cognition is either *material* and concerned with some object, or *formal* and occupied only with the form of the understanding and of reason itself and with the universal rules of thinking in general, without distinction of objects. Formal philosophy is called **logic**, whereas material philosophy, which has to do with determinate objects and the laws to which they are subject, is in turn divided into two. For these laws are either laws of **nature** or laws of **freedom**. The science of the first is called physics, that of the other is **ethics**; the former is also called the doctrine of nature, the latter the doctrine of morals. (*GMM*, 4:378)

Transcendental logic consists in material cognition of the laws of nature in general (B165) and depends on sensible intuition. Practical cognition of the laws of freedom is also material cognition, but it does not share this requirement; it can be had from practical reason alone, without requiring any contribution from intuition or feeling (e.g., *CpR*, 5:42-43, 45). As branches of metaphysics, both are formal in the ancient sense of studying the “what it is” of their object—nature or freedom. But because they study an object, something other than the form of the intellect or thinking itself, and their concepts have content in virtue of their relation to this object, they are branches of material cognition.¹⁵

¹⁴ For further discussion of why we can see that Kant does not identify the laws of thinking in general with the laws of thinking of objects in general see my critique of MacFarlane (2021).

¹⁵ Although in this section I am remaining as neutral as possible between the more Fregean and less Fregean conception’s of pure general logic’s formality, and thereby between my own view and Tolley’s or Lu-Adler’s, there is here already an important difference that should be noted.

Tolley has recently argued that Kant attributes the content of the pure categories to “our understanding *alone*” (2012, p. 431). He thinks the pure categories must have their own content entirely independently of sensibility both because of their theoretical use in empty thoughts (that are not cognitions) about non-sensible objects like the soul, the world-whole, or God (2012, p. 439), and because of the use of the category of cause in non-sensible practical cognition, since the categories of freedom are all modes of it (2012, p. 440; *CPrR*, 5:65). Both of these non-sensible uses should be distinguished from the pure categories as they figure, say, in §15-§20 of the Transcendental Deduction, where Kant is not considering their restriction to the particular forms of our intuition, space and time, although here they do require a manifold be given for intuition, no matter its form (B145). Because of these two non-sensible uses, or this abstract, general use with a manifold that must be given

Now, since not even all material cognition of a determinate object requires intuition, we should not expect pure general logic, as formal cognition that does not distinguish between the objects of cognition, to require intuition corresponding to its concepts. After all, it is not occupied with cognizing nature or freedom, but only with cognizing “the form of the understanding and of reason” and “the universal rules of thinking in general.” So although this kind of study of the understanding by the understanding might require the enlivenment of the understanding by sensation, because otherwise thinking would not begin (B1, compare also A66/B91, *PM*, 20:275), its topic is not intuition or even the synthesis of possible intuitions, and as formal cognition it does not directly concern them. In this sense, its object of study or topic—the understanding and its acts—is not an object properly speaking. It is not like nature and freedom, because it does not ground proper material cognition. That is, it does not ground cognition with both a matter and a form. Rather, it is a branch of cognition that is concerned only with the form of thinking and cognizing itself.

Still, it is formal cognition or formal philosophy. Any time there is a form, a determination, there must be something of which it is the form, that also has some material,

receptively, Tolley takes Kant to claim that “our understanding is capable of relating us (representationally, intentionally) to objects ‘mediately’ *all by itself*” (2012, p. 431), and that therefore their content stems from the understanding *alone*.

While these three uses need to be distinguished, and these concepts do have their source in the understanding, this conclusion is too strong, and it already tips towards post-Kantian idealism. In the first case of the theoretical non-sensible use of the categories or the third-non-spatial or non-temporal but receptive use of the pure categories, we are using concepts that are first deployed in experience, but now we abstract away from their use with either sensible or spatial and temporal objects (which is not to say that we arrive at these concepts through abstraction, as we would, say, with the concepts of warmth or red). While this use is legitimate (so long as we don’t mistake mere thoughts for cognition), we are discursive, sensing creatures and so the content of these concepts depends on their first being rules for the synthesis of possible sensible intuitions. (For more of my thoughts here, see my 2014.)

In the case of the practical use of cause in the categories of freedom, they “have as their basis” not “the form of intuition (space and time), which does not lie in reason,” but “the *form of a pure will* as given within reason and therefore within the faculty of thinking itself” (*CpR*, 5:65-66), and so here it can sound like the understanding alone is capable of relating us to an object. Even this use of the concept of cause, however, requires a “manifold of desires” that we subject a priori to “the unity of consciousness of a practical reason commanding in the moral law” (*CPrR*, 5:65). It is through this manifold of desires that we acquire our conception of the possible ends, actions, or objects to be produced through the will. So even in practical cognition, the manifold of sensible desires is a material condition on the use of the intellect (see Engstrom (2009; MS)), and because of the discursivity and finitude of our understanding, the matter or content of its concepts must always be given from elsewhere, even if in the practical case the basis or determining ground of these concepts lies in the pure will.

Our understanding does not generate the content of its concepts from itself on its own, without any exterior material condition, as a divine understanding would, and it does not relate us to objects *all by itself*, in the strong sense that Tolley’s remarks suggest. For this reason, despite the superficial similarity between Tolley’s attempt to understand the contrast between pure general and transcendental logic in terms of “the difference between the form and content of the understanding” (2012, p. 441) and my own, the nature of transcendental logic on our accounts is quite different. He thinks the understanding *alone* can provide its own content; I do not.

some determinable (A266/B322). This is material cognition or cognition proper: thought that is valid of a determinate object. Pure general logic is a preparatory “propaedeutic” or “outer courtyard” to the material sciences, with their determinate objects (*Bix*; *Log-W*, 24:794; *Log-D*, 24:694; *JL*, 9:13, 18). It studies the laws governing a cognition’s agreement with itself, or with the understanding, not with its object (A59/B84; A151-152/B190-191). Thus, it studies the form, or an aspect of the form, of any material cognition.

The topic of pure general logic is the form of thinking, which is independent of a thought’s object. From this it might be tempting to conclude that pure general logic would be formal cognition, even if there were no object cognized in material sciences. This would be a mistake. If there were not an object cognized in material sciences, then there could not be cognition, and there could not be the form of this cognition, in which case there could not be logic, as the study of this form. Thus, although the topic of pure general logic is just thinking and its laws, abstracting away from thought’s relation to its object, its status as formal *cognition* depends on thoughts also being material cognitions of objects. And if there were not material cognition, there wouldn’t be formal cognition, because formal cognition is cognition of the form of material cognition.¹⁶

¹⁶ Again, although I have remained as neutral as possible, Tolley and Lu-Adler might not be entirely happy with this characterization of the distinction between pure general, and transcendental, logic. In the recent literature on the relationship between these, the discussion has focused on which thoughts each logic governs. Tolley (2012, p. 419-425) has divided the field into three camps: those (a) that think pure general logic has to do with only analytic judgments, and transcendental logic only with synthetic judgments (“the ‘domain-exclusive’ interpretation,” p. 419), (b) those that think the two should be distinguished by pointing out that pure general logic has to do with all judgments, while transcendental logic has to do only with synthetic judgments (“the ‘domain-subordinative’ interpretation” p. 420; Rosenkoetter (2003, e.g., p. 159-160; 2017) has sympathy with this group.). And (c) those interpreters, like Tolley and Lu-Adler (2018, p. 157), who claim that both logics have the same absolutely universal domain (2012, p. 424).

Like Tolley, I am not convinced of (a) or (b), but I am also not convinced by Tolley’s arguments for (c), because he argues that Kant identifies thinking with thinking about objects (something John MacFarlane (2002, esp. n35), a domain-subordinative interpreter, also holds), but it is not at all clear that Kant is using “object” in the same sense in all of the texts Tolley is drawing on. Specifically, Tolley takes representations to be the “objects” of other representations, and while it is true that the categories have many uses beyond their paradigmatic use with objects of experience, Tolley has not made a convincing case that when a representation is the object of a concept, it is always represented through the categories. In §7 we will see that when Kant speaks of representing representations, it would be a mistake to think that this representing is the same kind of representing, subject to the very same laws, as the representing of objects, like appearances in nature. Rather, representing representations involves consciousness, which is a representation of the way in which the representation represents its object, and this is not a second-order representation in something like Frege’s sense.

Beyond these problems, I find the focus on “domains” obfuscating rather than clarifying. One problem is that I am not convinced the distinction between analytic and synthetic judgment applies to the judgments of logic (see note 28 below). Another is that this is not how Kant tended to approach the issue of the division between pure general and transcendental logic. In the introduction to the *Transcendental Logic*, for example, Kant does not discuss whether or not transcendental logic is a general or a special logic. (Some not decisive, but relevant remarks for these issues: A708/B736, *JL*, 9:12; *Log-Pö*, 24:502.)

§3 – The analogy and the more Fregean proposal

So far, our two interpretive proposals are in agreement: pure general logic is formal cognition because it is the science in which the faculty for thinking, the understanding, studies itself and its own form, independently of the material of cognition and sensibility. It is, thus, the science of the acts of thinking, constitutive of thinking as thinking, not as material cognition. Still, at this abstract level of description, there are different ways in which one might understand the task of pure general logic, and this is where our proposals will diverge. According to Kant, a main way that we make a body of cognition more systematic, and thereby more scientific (A832/B860), is by making its concepts distinct.¹⁷ On the more Fregean proposal the task of pure general logic is an *instance* of making clear concepts distinct. On the less Fregean proposal, it is merely *analogous* to making clear concepts distinct. In this section I will introduce the more Fregean proposal (i) by saying a bit about Kant’s distinction between clarity and distinctness, (ii) by laying out why the task of pure general logic is at least analogous to making clear concepts distinct, and (iii) by presenting the more Fregean proposal, on which pure general logic makes the concepts <concept>, <judgment>, and <inference> distinct.¹⁸

(i) 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 (*Anth*, §5, 7:135; *Met-M*, 29:879). A representation I am conscious of is clear (*JL*, 9:33). This consciousness or awareness (*Bewußtsein*) does not require an inference, but is immediate. And with a distinct representation, one is not only conscious or aware that one has it, but is also aware of its parts. In this way, distinctness consists in clarity or consciousness of the parts.¹⁹

Kant finds these grades of consciousness—obscurity, clarity, and distinctness—with 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 (*Log-Pö*, 24:511; *JL*, 9:35; *Log-Bl*, 24:41; R1681, 16:81). In this case, one’s intuition of the Milky Way is distinct because one’s intuitions of its parts are clear.

¹⁷ Especially through definitions (*JL*, 9:59, 139-140; see also A727/B755-A732/B760).

¹⁸ I follow the increasingly common practice of using angle brackets (< >) when I mention concepts.

¹⁹ *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).

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 or mark (*JL*, 9:58)—their metalness. At this point my concept <metal> is clear: I am conscious of the metalness that all of these things share. And this metalness is a mark or partial representation of these things, which is thus a partial concept of them (*JL*, 9:58). 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 or capacity, this skill. I attain a higher degree of consciousness of a concept, however, if I am not just able to concretely deploy it in recognizing its instances or subsuming things and concepts under it, 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 (e.g., *JL*, 9:34, 9:58-64; *Log-W*, 24:834, 844-848; *Log-Pö*, 24:571; R2385, 16:338). For example, my concept <metal> will be more distinct when I not only can recognize metal things, but when within <metal>, I think of: (1) solidity, (2) opaqueness, and (3) conductivity (*Log-Bu*, 24:617; *JL*, 9:35). 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 cognize why I use it to pick out those things and not others.

(ii) When we study the science of logic, we explicitly articulate rules that must already, *a priori*, govern our everyday reasoning.²⁰ This process of explicitly articulating in logic rules that already naturally govern our thinking and reasoning is analogous to making clear concepts distinct. Our natural reasoning, according to Kant, consists in forming concepts, making judgments, and drawing inferences. One aspect of this is recognizing and using concepts, judgments, and inferences, merely as the kinds of thoughts that they are—i.e., differentiating concepts from judgments, recognizing how judgments can fit together in inferences, etc. For this reason, like how we can see whether something falls under a concept or not in virtue of having it, we can recognize and use concepts, judgments, and inferences, in virtue of our

²⁰ To make this point, Kant will often compare logic to the grammar of a language and draw on the Leibnizian distinction between natural and artificial logic (see, for example, *Log-W*, 24:790-791, 798; *Log-D*, 24:693-694, 696-698; *Log-Pö*, 24:502; *Log-Bu*, 24:608, *Log-Pb*, 24:314, 317; *JL*, 9:17; *Refl.* 1628 & 1629, 16:44-50; 1579, 16:18-19). As Kant interprets the distinction, natural logic consists in logical rules, as they govern our everyday thinking and reasoning, while artificial logic is the systematic presentation of these rules within a scientific doctrine. Although officially Kant rejects natural logic because any logic must be a science, thus a system, and natural logic is not (*Log-D*, 24:694, 696; *Log-Pö*, 24:503, 508; *log-W*, 24:791; *JL*, 9:17), he still thinks the distinction has merit insofar as there are all sorts of rules that we follow before we attend to them and formulate them into a systematic body of doctrine or science, and this is especially true in logic.

natural powers of reasoning. Furthermore, this capacity seems to bring with it some capacity for assessing thoughts, insofar as, e.g., the capacity to put together concepts into a judgment seems to bring with it the capacity to recognize, at least sometimes, when this has failed. Even so, the rules governing these activities might be opaque. So as we might be able to differentiate metals from non-metals before we can say *why*, we might be able to differentiate purported concepts or inferences as legitimate or illegitimate before we can say *why*. And like how by making the concept <metal> distinct we can articulate the rules governing its use, by reflecting on our natural logical assessments of thoughts we can articulate the rules governing our thinking and formulate these into a logic.

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 specific concepts they are. Since a concept will contain other concepts, and these also indicate capacities 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 that naturally govern our everyday thinking *as thinking*, however, it is the consciousness of the generic rules governing all thought 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 capacity 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. 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 capacities 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 capacities 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 capacities, I come to formulate the rules constitutively governing their exercise. This is how I develop the rules that naturally govern my thinking into a science that formulates these general rules and grasps their systematic interconnections. Thus, like how we make a particular clear concept distinct by making explicit the specific rules governing its particular use, we formulate the rules that naturally govern our thinking and reasoning into the science of logic by making explicit the generic rules governing the use of all concepts, judgments, and inferences.

What, however, of the apparent differences in generality between different logical rules? For example, *modus ponens* or Barbara seem to only govern some inferences, while the principle of contradiction governs all thoughts.²¹ These differences are not in question here. For our purposes, all rules of logic are equally generic in that they each govern thoughts in virtue of what they are, not in virtue of what the thoughts are about (like the rules governing <metal> in virtue of it being true of metals). Kant holds that thinking, with its determinate forms (conceiving, judging, and inferring), and their determinate forms (e.g., negative particular categorical assertion, Barbara, Celarent, etc.), form a system of interconnected acts. This system is presented in the main part of logic, its Universal Doctrine of Elements (e.g., *JL*, 9:90-136). Part of the systematic character of these acts is that if we can engage in one of these acts we can engage in them all: e.g., there would be no inferring if there were no conceiving or judging and vice-versa. To some degree, why Kant thinks this is straightforward. There is no inference without judgment, etc. But a question worth wondering over is why exactly we should take the logical acts studied in logic to be the ones that he identifies. That he takes the system of logical acts to come as a finished package is supported by the fact that he seems to hold pure general logic, like transcendental logic (A65/B90), consists in an analysis of the faculty of thinking whose functions, acts, and laws form a complete, exhaustively enumerated system (Axiv, A12-13/B26).²² While we won't answer the question of why exactly there are these acts and not others, below we will return to why completeness is essential to Kant's view.

²¹ A detailed discussion of how the principle of contradiction governs all thought constitutively, according to Kant, can be found in my (2019).

²² Obviously, there is much more to say about the comparative generality of the laws of pure general logic. (Thanks to Timothy Rosenkoetter for the impetus to discuss this.) See Lu-Adler (2018, ch. 5.5, esp. p.186-187) for additional discussion of how this system of pure general logic unfolds and the importance of its completeness. For a critical discussion of her claim that pure general logic stands in need of a deduction, see my review (2020).

(iii) Because the way that we make the rules that must naturally govern our thinking and reasoning explicit in logic is analogous to the way that we make clear concepts distinct, it can look tempting to see the two as not merely analogous, but to see the one as an instance of the other. That is, it can be tempting to pursue an interpretation on which logic makes distinct something that we already represent clearly in our natural grasp of the rules governing our everyday thinking and reasoning. Although there can seem to be two plausible options for implementing this strategy,²³ the more promising one, which is the one we will discuss, proposes (1) that we exhibit a clear consciousness of our *a priori* concepts of <concept>, <judgment>, and <inference> in our everyday thinking and reasoning, and that (2) the task of pure general logic is to make these clear concepts distinct.

This is our more Fregean proposal for how to interpret the task of pure general logic. The reason it is more Fregean is that concepts like <concept>, <judgment>, and <inference>, have thoughts as their referents. Concepts like <silver> have objects like pieces of silver or metal as their referents. For this reason, they are a bit like Fregean first-order concepts. The concepts <concept>, <judgment>, etc., do not have first-order objects like pieces of silver or metal as their referents, rather, they have first-order concepts or judgments

²³ Still, the second option is useful for understanding the exact contours of the option that we will focus on. This second option concerns consciousness of *logical laws*, rather than the *concepts* of <concept>, <judgment>, and <inference>. On this second option, in our everyday thinking we have a clear enough consciousness of logic's laws for these to guide our reasoning, but we only make these laws distinct in a science of logic. Kant seems to endorse something like this in an old note Adickes dates from the mid 1750s. In this Kant claims in everyday thinking we have a "confused" (*verworren*), so indistinct, representation of logic's laws that is good enough to guide our actions in thinking, but then we make these "distinct" in the science of logic (*Refl* 1562, 16:3-4).

This conception of the task of logic is close to the one Leibniz puts forward in his *New Essays*. Leibniz maintains "that we use the principle of contradiction (for instance) all the time, without paying distinct attention to it," and that we can see this because "the conduct of a liar who contradicts himself will be upsetting to anyone, however uncivilized, if the matter is one which he takes seriously" (*NE*, p. 76). He goes on to claim that the principle of contradiction is a general simple truth that "is in us implicitly, before all awareness" and that such general principles enter into our thoughts serving as their inner core and as their mortar. Even if we give no thought to them, they are necessary for thought as muscles and tendons are for walking. The mind relies on these principles constantly; but it does not find it so easy to sort them out and to command a distinct view of each of them separately, for that requires great attention. (*NE*, p. 84, 76; also p. 78, 83)

In this way, on Leibniz's view, we are conscious of logical laws in our everyday reasoning, but it is the task of logic to attend to what we do in reasoning, and through this attention, command a distinct view of these laws.

As an interpretation of Kant, textually, a problem with this second option is that in later passages Kant repeatedly claims that before the laws of logic are made explicit in a science, often we are not conscious of them at all (*Log-W*, 24:290-791; *Log-BI*, 24:27; *JL*, 9:11). This suggests that, despite the 1750s note, Kant's considered view is that we do not have even a clear (but confused) consciousness of logic's laws before articulating them in the science of logic. A philosophical issue with this second option is that although a main function of judgments or inferences is to make concepts distinct, in the primary case clarity and distinctness do not belong to them, but to concepts. Reflecting on this helps alleviate the worry that any natural capacity to assess the logicity of thoughts already grants a clear consciousness of the logical law governing that assessment. For further elaboration, see note 25. (I am indebted to Hauping Lu-Adler, Lissa Merritt, and Clinton Tolley, for pushing me to articulate the difference between this option and the one discussed in the text.)

as their referents. For this reason, they are a bit like Fregean second-order concepts.²⁴ Our less Fregean proposal will deny that we have material concepts of kinds of thoughts like these “second-order” concepts. It will maintain that all we have are forms of the “first-order” material thoughts, and that from a Kantian standpoint such “second-order” concepts have no place.

It should seem that there is a lot to be said for the more Fregean proposal, 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 naturally know how to use these thoughts in further thoughts. That is, for example, we know how to use the concept <metal> or the concept <heavy> in further judgments and inferences. This capacity is like 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 <concept> more distinct when we judge that, e.g., ‘concepts can serve as predicates of possible judgments’ (A69/B94). In the one case we explicitly represent the fact that we take metals to be opaque, while in the other we explicitly represent the fact that we take concepts to serve as predicates. In each case we seem to make explicit the rules governing our use of <metal> or <concept> respectively.²⁵

§4 - The disanalogy: a preliminary problem and the less Fregean proposal

²⁴ Lu-Adler sometimes seems sympathetic with this kind of interpretation, insofar as she holds Kant’s logic studies “second intentions” (2018, ch. 5, note 2), which seem to be something like concepts of kinds of thoughts. Tolley also seems sympathetic, insofar as he takes logic to be concerned with “(higher-order) judgments” (2006, p. 391). Furthermore, it is fundamental to the interpretation developed in his 2012 that representations can be the objects of representations, and that concepts can have representations as their objects. Finally, as I mentioned in note 1, in draft work Tolley has argued that logic needs to form *concepts* of universal features of thinking, that include the concepts of a concept in general, a judgment in general, etc.

²⁵ This proposal does a better job of making sense of the later texts referenced in note 23 (*Log-W*, 24:290-791; *Log-BI*, 24:27; *JL*, 9:11) than the proposal of that note. This is because on this proposal, although clear concepts guide our use of thoughts in our natural reasoning, we are not conscious of the rules governing this use until we formulate these in the science of logic. So although this proposal holds that our natural reasoning requires that our concepts <concept>, <judgment>, and <inference>, are clear, and thus we can assess potential thoughts using them, until we develop logic as a science, we are not conscious of the laws governing the use of these concepts. After all, if we were already conscious of these laws, then these concepts would already be distinct, and making these concepts distinct, on this proposal, is the task of logic. So as the later texts claim, we are not conscious of the laws of logic, even though they guide our thinking, until we formulate them in the science of logic.

Our more Fregean proposal treats the purported concepts of <concept>, <judgment> and <inference> as having both a form and a matter, and this can look like a problem. Just like how the referents of <metal> are metals, or of <virtue> are virtuous actions, on the more Fregean proposal, the purported concept <concept> would have concepts as its referents—or as Kant will put it—its objects, its material. Since <concept> would be a concept, however, it would have the same form as any concept. After all, something's form is its nature; it makes it the kind of thing that it is. So, since the concept <concept> is supposed to be a concept like other concepts, it will share their form.

If the concept <concept>, however, has the same form as other concepts, and it has concepts as its material—the referents it is true of—then its form cannot explain the sense in which the concept <concept> can be said to be merely 'formal.' This is because its 'formality' is supposed to be what distinguishes this concept from other concepts like <metal>. But this concept has its form in common with other concepts. So the more Fregean proposal must account for the formal nature of <concept> through the special character of the concept <concept>'s material—from the fact that its referents, concepts, are thoughts, not objects, or as we would now put it, from the fact that the concept <concept> is 'second-order.' This can look like a problem for the more Fregean proposal because on it pure general logic looks like it turns out not to be formal cognition, so much as a special kind of material cognition of thoughts. And this seems to conflict with how Kant describes the topic of pure general logic:

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)

After all, on the more Fregean proposal, second-order concepts have referents. Because general logic studies these concepts, and must differentiate these concepts through these referents, it looks like it cannot abstract away from their relation to their referents or objects.

Although there is a nice reply that the more Fregean proposal can make to this objection, before we turn to this, we should introduce our less Fregean proposal for understanding the topic of pure general logic through this description of general logic. Because logic abstracts from any relation of cognition to its object, and considers only the logical form in the relations of cognitions to one another, we should take logic to begin with a body of cognitions that have both relations to objects and that are related to one another. Logic then studies the relations between these cognitions, but not their material relations—not the relations they stand in because of what they are about, their objects or referents. Rather, it studies both the relations that these cognitions stand in to one another because of the kinds

of cognitions that they are—the relations they stand in merely as concepts, judgments, and inferences—and the relations that constitute these cognitions themselves, since all thoughts are combinations of other representations—concepts of intuitions, judgments of concepts, and inferences of judgments. These are their formal relations; the relations they stand in because of the form that thoughts—or the thoughts of their kind—share. They are the formal relations of material cognitions.

This is very different than the more Fregean proposal. On that proposal logic has its own special second-order referents or objects—thoughts: concepts, judgements, and inferences—and we have cognition of these, in the full-blooded sense of having material concepts of them. On Kant’s account given in the passage just quoted, 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 this material cognition, of course, is whatever their objects are. Logic, on the less Fregean proposal, does not have its own special second-order referents that one can form concepts of and cognize materially; it is not its own ‘formal’ branch of material cognition. Rather, 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. 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. On our less Fregean proposal, then, (1) we competently use concepts, judgements, and inferences in our everyday thinking and reasoning, as the kinds of thoughts that they are, and (2) the task of pure general logic is to formulate the laws that necessarily govern this use of thoughts *a priori*. On this proposal we are not making the concepts <concept>, <judgement>, or <inference> distinct, but are merely formulating the laws that govern concepts, judgments, and inferences, in virtue of what they are—their form.

An immediate objection to the less Fregean proposal, however, maintains that it is obviously not viable. After all, as Kant claims, “to think is to represent something to oneself in a concept” (*Log-D*, 24:695, A69/B94).²⁶ On this proposal, however, in pure general logic we do not use concepts in describing its subject matter. This would seem to entail that on this proposal, in pure general logic, we are not thinking. Surely there we are thinking, however, if we are thinking anywhere. Thus, this proposal must be incorrect.

²⁶ Tolley relies heavily on this kind of claim (2012, e.g., p. 438).

To this objection there is a clear reply. After all, Kant will often contrast thoughts that have an object, have content, or are material cognition, with thoughts that are “empty” (e.g., A51/B75). Sometimes, then, thoughts do not represent an object or have content, in the way that proper material cognition does. Most commonly in the first *Critique*, however, when Kant speaks of a thought as “empty” he has in mind the use of a category or idea where it is not properly related to sensible intuition, and thus its purported object. In contrast, the thoughts belonging to pure general logic are not faulty because of their emptiness, because they do not purport to relate to intuition or an object. In confirmation of this, Kant will often speak of general logic as “empty” (e.g., A61/B85) or of the logical “I” or the “I think” as “empty” (A346/B404, A355-356; A636), and he does not see this status as problematic. He will even claim that one “cannot even say that” this “simple and in content for itself wholly empty representation **I**” is a concept (A346/B404). Rather, the I think merely “accompanies all categories as their vehicle” (B406). In this way, if we remember that the ground of the I think is the synthetic unity of apperception (B132), which Kant identified with the understanding itself, and which is the highest point to which one must affix the whole of logic (B134n), then we will see that Kant clearly maintains that there is a kind of empty thinking where we consider only the form of cognitions. He will consider these forms as representations in a sense, but properly they are not even concepts or cognitions, because they are not related to an object in the full material sense that we examined above, in discussing the preface to the *Groundwork*. Rather, they are only the empty vehicle of cognitions. This is the status of the forms studied in logic, on the less Fregean proposal.

§5 – Defense of the more Fregean proposal: it is formal!

It might now seem that the less Fregean interpretive proposal is on significantly stronger footing than the more Fregean one. After all, the former can account for Kant’s claims that the logical “I think” or logic itself is empty, while it might seem that the latter cannot. On the more Fregean proposal, logic makes distinct concepts like <thought>, <concept>, <judgment>, etc. These are the same in kind as material concepts, but they are ‘formal’ because of special features of what they are concepts of: thought, or the kinds of thoughts. How might a proponent of the more Fregean proposal defend it from the objection of the last section and account for Kant’s claims that logic is empty?

Remember, all material concepts, as concepts, both (a) relate to other thoughts in systematic generic ways as the kinds of thoughts that they are, and (b) have a referent, object,

content, or matter—something the thought is about that distinguishes it from other thoughts of the same kind. Although on the more Fregean proposal pure general logic *uses* the concepts <concept>, <judgment>, etc. to study (a) the formal relations of material cognitions, it still abstracts away from (b) the content of the material cognitions whose form it *studies*. In this way, on this proposal, although pure general logic is not empty insofar as it does not abstract from the concepts *deployed* in its laws, it is empty insofar as it abstracts away from the content of the thoughts that its laws *govern*. In this sense, on this proposal general logic abstracts “from all content of cognition, i.e., from any relation of it to the object,” insofar as it abstracts from all content of the concepts it studies and considers only the logical form in the relations of these cognitions to one another (A55/B79).²⁷

This will be equally true of the concepts <concept>, <judgment>, etc. that pure general logic itself deploys. They are distinguished from other concepts by what they are about. Still, insofar as these concepts are considered not as they are *used* in pure general logic, but as themselves among the concepts it *studies*, it also abstracts away from their relation to their referents or objects. Thus, whenever pure general logic, on the more Fregean proposal, considers the relation of cognitions, it always abstracts away from their relations to objects—even with its own fundamental concepts. It is just that in order to *use* its proprietary concepts—the concept <concept>, <judgment>, etc.—it better not abstract away from the relation that these have to their referents or objects. After all, if it did, then by its own lights it wouldn’t be able to use these concepts. Thus, according to the proponent of the more Fregean proposal there is a clear sense in which pure general logic is empty, because it abstracts away from what the thoughts it *studies* are about.

§6 – Consciousness and one problem with the more Fregean proposal

At this point, the two proposals should seem to be on all fours, or close to it. Now I want to return to the difference between them, and expose what I take to be the root of this difference. This has to do with how a proponent of each would be thinking about Kant’s notion of consciousness or awareness (*Bewußtsein*). Examining this notion will give us the resources for two final arguments as to why we should prefer the less, to the more, Fregean proposal, as an interpretation of Kant.

²⁷ Although I am not sure he would have put things quite this way, for this way of developing the more Fregean proposal I am indebted to a stimulating correspondence with Jim Hutchenson.

We saw above that, according to Kant, consciousness comes in three grades: obscurity, clarity, and distinctness. Although he holds that we have many obscure or unconscious representations (*Anth*, 7:135), concepts are conscious representations (A103-104; B133-134n), so thinking is conscious, and because logic studies the laws of thinking, it is unsurprising that logic has only to do with clear, not obscure representations (*JL*, 9:33-34). Now, Kant will claim that “consciousness is really a representation that another representation is in me” (*JL*, 9:33), or that judgment is “the mediate cognition of an object, hence the representation of a representation of it” (B93). We are about to see that the root of the difference between our proposals, comes down to what each would make of these kinds of claims. On the more Fregean proposal, consciousness would be taken to be a separate second-order representation—a separate representation of the representation of which one is conscious—while the less Fregean proposal would hold that thinking of consciousness as a separate second-order representation misconstrues Kant’s notion of consciousness.

Before turning to this, it is worth pausing over the relationship between judging and consciousness, which should be uncontroversial between the two proposals. Given the two passages just quoted, it should be unsurprising that consciousness is at the crux of Kant’s account of judgment. For example, he will claim that “judgment is the representation of the way that concepts belong to one consciousness universally, objectively” (*Log-V*, 24:928), or that “judgment is the representation of the unity of consciousness of various representations, or the representation of their relation insofar as they constitute a concept” (*JL*, 9:101; see also 16:624ff). In line with these passages, because judgments represent the way concepts belong to a subject concept, in them we make the subject concept more distinct by clarifying the concepts that constitute it.²⁸ Furthermore, in interpreting the B93 passage, we should

²⁸ Indeed, Kant will distinguish between the “analytic” and “synthetic” distinctness of a concept, and these correspond to whether the judgment making the concept distinct is analytic or synthetic (*JL* 9:63-64; *Log-W* 24:845, 916; *Log-Pb*, 24:417). For example, take a material concept like <body>. There are two ways to make this concept more distinct. We can analyze the concept, or we can go out and study bodies, and thereby add new features to the concept, like <heavy>. The first involves analyzing a concept and merely clarifying its meaning through analytic judgments. The second involves an examination of the object of the concept and amplifies knowledge of it through synthetic judgments. When we analyze a concept, this is making “a concept distinct” or giving it “analytic distinctness;” when we go out and synthetically study the object, this is making “a distinct concept” through making distinct its object, which is giving it “synthetic distinctness.”

In material sciences like physics and ethics—sciences in which the topic of study is distinct from the cognitive faculty through which it is being studied—it is the second synthetic way of arriving at more distinct concepts that is properly developing the science, while the first analytic way merely clarifies concepts as they already are. On the more Fregean proposal, because the concepts <concept>, <judgment> and <inference> are the same in kind as material concepts like <body>, it can look like this same division between analytic and synthetic distinctness should also apply to pure general logic.

remember that although a judgment relates to an object through the concepts and intuitions involved in it, it is about the object, not the concepts or intuitions. In this respect, a judgment is first and foremost the representation of the object it is about, and only secondarily the representation of a representation of the object. Still, a judgment will involve a representation—consciousness—of another representation that is more directly related to the object. This is why it is mediate cognition of an object. So although the appeal to consciousness is only implicit in the B93 passage, for both passages this notion is critical.

Now, obviously, as the representation of a representation, consciousness has a quite second-order ring to it. But should we understand consciousness as the more Fregean proposal would? I think not, and here Kant's discussion at *Jäsche Logic*, 9:33 is helpful:

All our cognition has a *twofold* relation, first a relation to the *object*, *second* a relation to the subject. In the former respect it is related to *representation*, in the latter to *consciousness*, the universal condition of all cognition in general. – (Consciousness is really the representation that another representation is in me.)

In every cognition we must distinguish *matter*, i.e., the object, and form, i.e., *the way in which* we cognize the object. If a savage sees a house from a distance, for example, with whose use he is not acquainted, he admittedly has before him in his representation the very same object as someone else who is acquainted with it determinately as a dwelling established for men. But as to form, this cognition of one and the same object is different in the two. With the one it is *mere intuition*, with the other it is *intuition* and *concept* at the same time.

The difference in the form of the cognition rests on a condition that accompanies all cognition, on *consciousness*. If I am conscious of the representation it is clear, if I am not conscious of it, *obscure*. (*JL*, 9:33; *Log-Pö*, 24:510; also compare *JL*, 9:64, *PM*, 20:274-275)

Two people see a house, one of whom lacks the concept <house>. The only difference between their cognitions rests on their form, on the way in which the object is cognized. The object—the matter—of each of their representations is the same. This difference is a difference in consciousness, which concerns the relation of the cognition to the subject.

I have not focused on this distinction here, however, because even on the more Fregean proposal, within formal cognition like pure general logic, this distinction is not very substantive, and in the less Fregean proposal it disappears. Although psychology, perhaps, studies thoughts as though they were objects encountered in nature, logic studies thinking first-personally. It studies thinking as something I myself do and the acts of thinking I myself engage in. Thus, it studies rules I already follow. For this reason, the same rules that govern the *use* of concepts, judgments, and inferences, are the rules contained in the content of the concepts <concept>, <judgment> and <inference>, on the Fregean proposal. Thus, on this proposal it does not matter whether pure general logic carries out its investigation by *analyzing* these concepts or by *studying the use* of concepts, judgments, and inferences in thinking, and thereby making distinct concepts of these activities.

On the less Fregean proposal, in contrast, pure general logic studies the formal rules that govern the *use* of concepts, judgments, and inferences in material cognition. Because there are no concepts with their own referents to analyze, the distinction between analytic and synthetic distinctness is out of place. For this reason, I do not think that the judgments of pure general logic *themselves* count as analytic or synthetic according to Kant. Like how we should not let the name “analytic method” confuse us into thinking that following it entails only making analytic judgments (*P*, 4:277n), we should not let the fact that “general logic analyzes the entire formal business of the understanding and reason into its elements” confuse us into thinking that this analysis consists in analytic judgments (A60/B84). (Thank you to Arron Wells for pushing me to address this topic.)

If we think this through, we will see that consciousness, “as a representation that another representation is in me” (*JL*, 9:33), should not be understood as a separate second-order representation, but as the form of the original representation. If consciousness were a separate second-order representation, then the referent of this representation would be the first-order representation of the object. Thus, its referent or object would be different from the referent or object of the original representation. In this passage, however, the object is always the house, whether or not the person seeing it has the concept <house> and judges that it is a house. What distinguishes the two cases is not that the second case deploys a second order representation—the concept <house>—whose referent is the intuition of the house; rather, it is that the *form* of the representation of the house—what the representation is—is transformed. It is not merely intuition, but intuition and concept at the same time. This is a difference in the way that the object is represented, and it is a difference in the nature of the representation. Kant identifies this as a difference in the consciousness each person has of their respective representations. Similarly, in a judgment, it is not that the predicate concept, say, represents the subject concept. Rather, the judgment as a whole is about the object. And through the judgment the form of the representation of the object is transformed; the concept of the object is made more distinct. Echoing Kant’s remark, we might think of it as concept and judgment at the same time, with the recognition, of course, that judgments are more homogeneous with concepts than concepts with intuitions. After all, “judgment is the representation of the unity of consciousness of various representations, or the representation of their relation insofar as they constitute a concept” (*JL*, 9:101).

What differentiates an intuition from an intuition and a concept is consciousness. This is a difference in *the way in which* a representation cognizes its object, or in form. That is, it is a difference in what each representation is, as the kind of thing that it is. That it is a difference in consciousness that makes this difference in kind should be unsurprising, because intuitions and concepts are representations had by subjects. After all, each are, fundamentally, exercises of a faculty of cognition had by this subject. In cognition a subject connects representations of an object together, according to laws that govern each kind of representation. So what makes representations the kind of thing that they are is not their object—what they represent—but the way that they represent this object, which is identified with their relation to the subject. This is a matter of consciousness. For these reasons, it would be a mistake to think of consciousness as a separate second-order representation of a representation. Rather, the kind of consciousness one has of a representation is determined by the kind of

representation that it is, and consciousness is a representation that another representation is in me insofar as it is *formal awareness* of the representation as the kind of thing that it is, which is awareness of its relation to its maker, the faculty in which it originated.

Still, in the wake of Frege (and others) we are so used to thinking of representations as essentially having referents that it can be hard to shake the feeling that this merely formal awareness of the way in which a representation represents is deeply obscure. We should remember, however, that Kant is working in a tradition that takes cognition or knowledge to consist in both a form and matter. Our first cognition is experience, which is “the product of the understanding out of materials of sensibility” (*P*, 4:316; also A1), and all cognition is the combination of intuition in thinking. Prior to such combination, intuition is merely an undetermined determinable. It is properly only potentially cognition, not cognition proper, because this arises through the determination of intuition by thinking. Thinking always relates intuitions or other thoughts in a new thought. The logical notions of concept, judgment, and inference are merely and simply the ways in which intuitions and thoughts can be so related—the way in which the determinable material of cognition can be determined. This is the sense in which the logical notions of concept, judgment, and inference are empty forms. They are not self-standing cognitions. Rather, they are the kinds of thinking, or the determinations, that make cognition what it is.

§7 – The science of logic and a second problem with the proposal

I would now like to approach the problem with second-order concepts of the kinds of thoughts from a different direction and show how introducing orders transforms the system of logic, and thereby deprives it of what Kant takes to be its chief “advantage” (Bviii–ix). Approaching the problem from this direction will illuminate not only why the more Fregean reading will not do as a reading of Kant, but also what Kant would take to be a chief drawback of the Fregean innovations in logic of the last hundred and fifty years.

In fundamental respects, the first modern logical accounts of Frege, Russell, and early Wittgenstein have much more in common with the Kantian account of logic than subsequent accounts, insofar as they still share a conception of logic on which it is the science of the laws of thinking or thought, and they do not yet draw a modern distinction between object- and meta-languages, as, say, Carnap does, under the influence of Tarski. Attempts to formulate the foundations of logic on such in-between conceptions as Frege’s, Russell’s, and early Wittgenstein’s were “rendered arduous” by what Henry Sheffer called, with respect to the logic

of Russell and Whitehead's *Principia* (1925), the “logocentric” predicament—that “*in order to give an account of logic, we must presuppose and employ logic*” (1926, p. 228).

We have seen that Kant took pure general logic to be a “self-cognition of the understanding and of reason merely as to form” (*JL*, 9:14), and so because in carrying out this study the understanding and reason will be subject to their own laws, like Frege, Russell, and Wittgenstein, Kant too recognized ‘logocentrism.’ For Kant, however, the fact that logic is a self-cognition of the understanding and reason as to form was not a predicament, but the source of logic’s success. It was the reason that logic had been relatively stable for almost two millennia. In fact, it is the stability of logic, derived from its status as self-knowledge, that inspires Kant’s own critique of pure reason (Axiv). In both logic and this critique, Kant holds what we are searching for “cannot remain hidden from us,” because in both the topic of study “is not the nature of things, which is inexhaustible, but the understanding” (A12-13/B26, Bix). So rather than rendering the project of formulating logic’s foundations arduous, for Kant, the need to use the understanding in studying logic—thus logocentrism—explains its relative tractability, as compared to natural science, and is its chief “advantage” (Bviii-ix).

Why does logocentrism render the project of Frege, Russell, and Wittgenstein arduous, while for Kant logocentrism is the source of logic’s success? Part of the answer lies in Kant’s account of logic as formal, rather than material, cognition. Specifically, because Frege and Russell treat logic as continuous with mathematics, they take the notions deployed in logic to have referents in the same way that the notions deployed in mathematics have referents. This puts them in the awkward position of formulating the laws of logic, as the most general material laws, while subject to these same laws. Sheffer rightly thinks the predicament can be mitigated somewhat if we distinguish between how certain pieces of notation are related to other pieces of notation, on the one hand, and how pieces of reality are related to other pieces of reality, on the other (1926, p. 228).²⁹

Still, one kind of awkwardness that remains for Frege’s view is the one that Benno Kerry highlighted and to which Frege responded in his ‘On Concept and Object’ (1892). In this response, Frege points out that what he called “elucidations” (*Erläuterungen*) are essential and ineliminable in the process of making the foundations of logic explicit. Take the statement ‘No object is a concept.’ Here every object falls under the first level-concept signified by ‘object’ but no object falls under the first level-concept signified by ‘concept.’ For this reason,

²⁹ This maneuver became common. Compare, say, Carnap on the formal and material mode of speech (1934, §78).

the statement looks like a trivial generalization over objects, but this is not what Frege meant to communicate. To properly express what Frege is after we would need predicates that can be completed both by object-names and concept-names and a variable that can take both objects and concepts as values. This is, however, exactly what Frege means to rule out with his prohibition to never “lose sight of the distinction between concept and object” (1884, xxii). Because of this any attempt to render ‘No object is a concept’ in Frege’s logical language will fail, and this is why the statement is an elucidation. Nonetheless, he hopes that his readers will give him his famous pinch of salt (1892, p. 204) and that ‘no object is a concept’ can still help them to recognize a part of the real logical structure of thoughts—the distinction between concept and object—even though strictly speaking this statement is nonsense.³⁰ For Frege, this need for elucidations is one way in which logocentrism renders arduous the attempt to formulate the foundations of logic. After all, if his project was to formulate the foundations of physics, say, then there would be no need to presuppose its laws, and no need for elucidations.

If logic is formal cognition in Kant’s sense, logic does not require Fregean elucidations. On Kant’s account, logic consists in analyzing or dividing up the acts of the faculty for thinking, the various ways in which thoughts combine representations, merely as the thoughts they are (A332/B171-A133/B172). As we’ve seen, these logical acts are empty forms. They are not themselves entities or referents, as, say, first-order concepts are on Frege’s account. So when we are working to understand claims like ‘concepts are predicates of possible judgments’ (B93) there is no expectation that ‘concept’ has a referent, only that it indicates a form of cognitions with referents. In this way, pure general logic is not like other sciences. On Frege’s view the kind of knowledge we have in logic is no different from the kind of knowledge we have in mathematics. On Kant’s view, however, because logic only treats the formal element in cognition, it is a fundamentally different kind of knowledge than the material knowledge we have in mathematics. It is exceptional. This allows Kant to escape the predicament of needing Fregean elucidations. Logic articulates the formal activity in regular material cognition, and so its claims all share the same status as formal analyses of the acts of the faculty for thinking. These formal cognitions are not material cognitions—thus their exceptionality—but they are all themselves of the same kind.³¹

³⁰ A nice up to date discussion of the problem can be found in Ricketts (2010, §5).

³¹ I am indebted to a conversation with Jonas Held for drawing my attention to this way in which the formality of logic for Kant is related to Frege’s elucidations.

This first part of the answer to the question of why logocentrism renders the project of Frege arduous, while for Kant logocentrism is the source of logic's success is related to a second part, which lies in the simplicity and tractability of logic on Kant's account. For Kant, pure general logic is a completed and enclosed system. It studies the forms of concepts, judgments, and inferences and their formal relationships. These are captured by the Aristotelean categorical judgment forms of the square of opposition, the hypothetical and disjunctive judgment forms, along with the Aristotelean syllogistic and the hypothetical and disjunctive inference forms. For this reason, on a traditional conception of logic, like Kant's, the system of possible logical relationships between types of thoughts is small, complete, and closed, and its laws make up a finished system. Systematic unity is what makes ordinary cognition into a science (A832/B860). On Kant's view, no other science has been as successful in attaining such complete systematic unity as logic. Part of the reason is that it has so few principles.

In modern logic this feature disappears. Modern logic introduces an infinite type-hierarchy. As a result, unlike traditional logic it is not a closed, finished system. After all, traditional logic does not treat polyadic relations, let alone relations with indefinitely many places, as the logics of Frege, Russell, and Wittgenstein, or contemporary logics do. Nor does it introduce a modern infinite hierarchy of orders, with its distinctions between, for example, concepts of the first order that are true of objects, concepts of the second order that are true of first order concepts, concepts of the third order that are true of second order concepts, etc. In both of these respects, then, modern logics provide logical resources that are inexhaustible. As a result, on these accounts, logic is not complete in Kant's sense,³² and the system of their laws are not finished. They are, from Kant's standpoint, at best infinitely extendable in a systematic way. But unlike for Kant, it is not true on these accounts that logic, having "to do merely with reason itself and its pure thinking," gives "an example of how the simple acts of reason may be fully and systematically enumerated" (Axiv).

But why would the fact that the understanding and reason study their own acts in logic entail this simplicity and tractability? Kant holds that in philosophy and mathematics reason has two heterogeneous *a priori* uses (A713/B741-A724/B752). As formal philosophy, logic deals only with "the form of thinking in general" (A55/B79), while mathematics constructs its objects in *a priori* intuition and makes discoveries about these objects through these

³² Of course, with this claim I am not denying that post-Fregean logics can be 'complete' in the modern sense, where a system is complete if every valid formula is derivable within it.

constructions (A713/B741). By Kant's lights, then, because modern logic is continuous with mathematics it incorporates a material element that stems from the multiplicity of sensibility which is foreign to the simple acts of the understanding and reason, which is a regression to Leibnizianism. Of course, a modern logician wouldn't view logic's new mathematical power or the introduction of multiplicity into logic as a regression and wouldn't see this multiplicity as stemming from sensibility. We can find uncontested ground between Kant and a modern logician from which to approach this point, however, if we do so through the use of mathematics in natural science. In studying mathematics, we are also studying a dimension of the natural world, in that objects in nature exhibit mathematical features. In this sense, on an account of logic where it is continuous with mathematics, the study of logic is not strictly divided from the study of the inexhaustible mathematical dimension of the nature of things. Thus, setting aside whether mathematics depends on sensibility, on the modern account it does not have to do only with the simple acts of reason that may be fully and systematically enumerated, while on Kant's account, where mathematics and logic are heterogeneous sciences, logic may be finished, even if mathematics is inexhaustible. In this way, on modern views, logic stopped being Kant's quite limited kind of formal self-knowledge. As a result, although the modern introduction of an infinitely extendable hierarchical system of types brings with it the promise of great mathematical power, we can see why Kant would have taken this new power to bring with it a corresponding philosophical loss. Because such a system of possible logical relationships between types of thoughts is no longer small and closed, and its laws no longer form a finished system, it is at best infinitely extendable in a systematic way. It is perhaps no wonder, then, that our need in logic to presuppose and employ the laws of thinking in giving an account of these same laws came to look like a problem, whereas before it appeared to be the source of logic's greatest philosophical strength.

Let's return now to our Fregean proposal for interpreting Kant. Consider the different ways in which Frege and Kant each view the relation between concept and object. Frege holds that only objects, like pieces of metal, fall under first order concepts like <metal>. Other concepts, like <silver>, do not. Kant, however, maintains that a single concept like <metal> contains in its extension both objects, like this or that piece of metal, and concepts, like <silver> (e.g., A69/B94).³³ Because of this there is a kind of unity to the system of thoughts and objects on Kant's account that is missing from the Fregean account.

³³ This is a well-known feature of Kant's view. Longuenesse is one example of an interpreter who draws attention to it (1998, esp., p. 86-90). Lanier Anderson (2015, esp. §2.4) offers a more recent discussion.

To elaborate, take a Porphyrian Tree from a highest genus all the way down to its objects.³⁴ For example, take <body>, <metal>, <silver>, <bronze>, <sterling silver> etc., down to individual pieces of metal like this silver spoon or that gold ring. The higher genus concepts belong to the intension or content (*Inhalt*) of the species concepts below them. Conversely, a higher concept like <metal> will equally apply both to its species concepts, such as <silver>, <bronze>, etc. and to individual pieces of metal, like this silver spoon or that ring. The reason that there is a kind of unity to this system that will be lacking on the Fregean account is that any object which falls under a species concept, like <silver>, will also fall under all of its genus concepts: <metal>, <body>, etc. In this way, all of the concepts and objects belong to the same order of the porphyrian tree.³⁵

This is not true on Frege's account. On the way that Frege thinks of the distinction between concept and object: concepts are true of objects, and objects stand under their concepts, but no concept stands under another concept. For example, "silver is a metal" claims that all pieces of silver are also pieces of metal. The class of objects that stands under the concept <metal> is wider than, and encompasses, the class of objects that stands under the concept <silver>. In an improper way we might say that the concept <silver> stands under the concept <metal>, but all that we would really mean is this containment of one class of objects within another. So unlike on Kant's account, properly speaking concepts do not subsume other concepts under them, only objects, and concepts and objects occupy different parts of the system.

Now consider the second-order concepts of the more Fregean proposal for interpreting Kant. From a Kantian point of view, they will be anomalous. The second-order concept <concept> will have other concepts in its extension, but the referents of these concepts will be excluded. <metal> will contain both the concept <silver> and this or that silver spoon in its extension. The concept <concept> will contain concepts like <metal> in its extension. But the concept <concept> will not contain any objects—any silver spoons—in its extension. After all, these are not concepts. And so, if we interpret Kant as allowing pseudo-concepts, like <concept>, then we will introduce a fundamental disunity into the Porphyrian Tree that is foreign to his conception of cognition or knowledge. If we stick to

³⁴ See Anderson (2015, esp. §2.3) for a nice explanation of the role of Porphyrian Trees in Kant's theory of concepts.

³⁵ Which is not to deny that different sciences might have different Porphyrian Trees on Kant's account. Indeed, this seems quite plausible—but that is a topic for another occasion.

the less Fregean proposal, however, this disunity is avoided. After all, because our representation of the form of concepts like <metal> is not itself a material concept, it is not something that we should expect to sit in a Porphyrian Tree.

Furthermore, if we admit the concept <concept>, as the more Fregean proposal would have us do, then we are stuck with an infinite hierarchy of orders, and logic is no longer closed and complete. This is because if we admit not only a break between objects, like this spoon, and concepts, like <metal>, but also admit another break between the first and second-order—between <metal> and <concept>—then it seems that we should also admit a break between the second and third-order, and so on up the hierarchy. This is because the third-order concept <concept of thoughts> seems as different from the second-order concept <concept>, as the second-order concept <concept> was from the first-order concept <metal>. To see why, consider again the disunity of the last paragraph. On the Kantian view, the first-order concept <metal> has in its extension <silver> and this spoon. Similarly, on the more Fregean proposal the second-order concept <thought> has both the second-order concept <concept>, as well as the first-order concepts <metal>, <silver> etc. in its extension. But because of the disunity, neither of the second-order concepts <thought> or <concept> have this spoon in its extension. Now, the third-order concept <concept of thoughts> will have both of the second-order concepts <thought> and <concept> in its extension, but it will not have first-order concepts like <metal> in its extension. Thus, the same kind of disunity that occurred with the second-order concept <concept> occurs now a level up with the third-order concept <concept of thoughts>. And a similar disunity will afflict every level in the infinite hierarchy.

Although there is this disunity among orders, how different is the structure of this system from the way that Kant conceives of the system of concepts in a natural science, like, say, the concepts of biology or physics? Notice that now the concept <concept> includes not just concepts like <metal> as its species, but a number of new ones: <first-order concept>, <second-order concept>, etc. After all, these too will be concepts. For this reason, this interpretation might hold that just as in the natural realm there is a law of specification that we should always “seek under every species that comes before us subspecies, and for every variety smaller varieties” (A656/B684), in the logical realm under the concept <concept> we should always seek further subspecies. Here the logical case will even go further than the natural one, because unlike with natural species, this case demands an infinity of such subspecies. From this one might be tempted to conclude that although the system of logical

forms or kinds of thoughts is infinite, other than that difference, its structure is not so far from the kind of systematic structure that one would find in a natural science.

A moment's further reflection, however, makes clear that one should not give in to this temptation, for the structure of this system of concepts of thoughts is much stranger and more paradoxical than we have so far seen. After all, <concept> would have <thought> or <concept of thoughts> in its extension. This is because <thought> and <concept of thoughts> would both be concepts. Yet <thought> and <concept of thoughts> would also be genera of <concept> because <concept> would both be a species of <thought> and a species of <concept of thoughts>. Or again, <concept> would be both its own genus and species, because <concept> would be a <concept>. The structure of the Porphyrian Tree has dissolved. Arguably, logic thereby ceases to be systematic, and so ceases to be a science, and so ceases to be logic.

Here it becomes tempting to abandon a basic commitment of the Kantian, as opposed to the Fregean, position: that concepts can have both objects and other concepts in their extension. If this is abandoned, however, then the kinds of thoughts become infinite. Why? If we deny that there is a concept <metal> that both this spoon and <silver> fall under, then there would also be no concept <concept> that <metal> and <first-order concept> both fall under. After all, we now deny that both a concept and its referent can be in the extension of the same concept. But then, properly speaking, there would be no concept <concept> at all. To speak of concepts really turns out to mean some element in the hierarchy <first-order concept>, <second-order concept>, etc., as on the Fregean system or on Russell's theory of types. But now rather than three basic kinds of thoughts, concepts, judgments and inferences, there are an infinite number of basic kinds, and the concept <concept> misses its mark entirely. The kinds of thoughts would be infinite. Logic would not be closed and complete. And logic would thereby lose the great "advantage" that Kant finds in it (Bix).

§8 - Conclusion

According to Kant, logic is "formal philosophy" or "formal cognition" (*GMM*, 4:378). We have seen that this characterization of logic harkens back to the ancient conception of form as that which answers the question "what is it?" This is because pure general logic studies the laws that govern thinking, as thinking, and transcendental logic studies the laws that govern thinking, as thinking of an object or cognition, which is where thinking finds its proper end. Thus, as we've seen, although both kinds of logic are formal in the ancient sense of studying

the laws that govern thought as what it is, pure general logic is formal in a stricter sense, because it studies the laws of thinking as thinking, abstracting away from thought's relation to its object or intuition. We then looked at two proposals for making sense of the task of pure general logic and for how to think about what exactly this science studies, and although this task is analogous to making clear concepts distinct, in pure general logic we are not actually making the concepts <concept>, <judgment>, and <inference> distinct. Rather, we are formulating into a system the laws that govern thoughts in virtue of their form. In doing so we thereby become conscious of the laws that govern concepts like <metal>, judgments like "bodies are heavy," or inferences like "bodies are heavy, this metal is a body, thus this metal will fall," in virtue of what they are. Thus, pure general logic is formal cognition, not because it is a 'formal' branch of material cognition, but because it studies the laws that constitutively govern material cognition in virtue of its form.

In logic today infinite hierarchies abound, both of orders or types, and of languages. Prior to Frege and Russell, drawing on arguments tracing back to Plato's *Parmenides*, the notion of form was often relied upon to avoid infinite hierarchies (e.g., of ideas) and their related infinite regress problems. This is one of the uses that the appeal to form serves within Kant's philosophy and we've seen one way it serves this purpose when Kant calls logic formal cognition. Of course, I've not reconstructed here the *reasons* that Kant would have for thinking that the infinite hierarchies of types and of languages that are so commonplace today are problematic. I've only pointed out that to accept them is to give up on what Kant took to be the chief advantage of pure general logic.

At this late stage it would be inappropriate to embark on such a reconstruction, but a final thought in closing. On its face, it looks like two elements in Kant's view can be pulled apart, and that Wittgenstein's *Tractatus* (1921) might point the way to how. One might read the Tractarian view as one on which logic has to do merely with reason itself and its pure thinking, as on Kant's view, although the logic of the *Tractatus* is mathematically powerful because of both its use of both formal series (1921, e.g., 4.1252) and more standard modern logical techniques. On this reading, unlike for Frege and Russell, fundamentally logic is not directly concerned with a dimension of the nature of things, although as on their accounts it is supposed to offer a foundation for mathematics. In this way, such a reading of the *Tractatus* would suggest that the limited and finished nature of Kant's logic is not essential to its status as formal cognition or formal philosophy. Investigating whether in fact—or the degree to

which—these two dimensions of Kant’s account can come apart is a question for another time.³⁶

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Bibliography

- Allais, L. 2015. *Manifest Reality: Kant's Idealism and His Realism*. Oxford University Press.
- Anderson, R. L. 2015. *The Poverty of Conceptual Truth: Kant's Analytic/Synthetic Distinction and the Limits of Metaphysics*. Oxford: Oxford University Press.
- Bennet, J. 1966. *Kant's Analytic*. Cambridge: Cambridge University Press.
- Engstrom, S. 2006. "Understanding and sensibility." *Inquiry*. 49(1): 2-25.
- 2009. *The Form of Practical Knowledge: A Study of the Categorical Imperative*. Cambridge: Harvard University Press.
- MS. Universal legislation as the form of practical knowledge.
- Frege, G. 1884. *The Foundations of Arithmetic: A Logico-Mathematical Enquiry Into the Concept of Number*. Translated by J.L. Austin. Northwestern University Press. 1980.
- 1892. "On concept and object." Translated in Geach & Black 1952 pp. 42–55. Originally: "Über begriff und gegenstand" in *Vierteljahresschrift für Wissenschaftliche Philosophie*. 16: 192-205. Page numbers in citations are to the original numbering.
- Grüne, S. 2009. *Blinde Anschauung: die Rolle von Begriffen in Kants Theorie Sinnlicher Synthesis*, volume 96 of *Philosophische Abhandlungen*. Vittorio Klostermann, Frankfurt am Main.
- Kant, I. 1900–. *Kants Gesammelte Schriften*, ed. by the Deutschen Akademie der Wissenschaften. Berlin: De Gruyter.
- 1992–. *The Cambridge Edition of the Works of Immanuel Kant*, ed. by Paul Guyer and Allen Wood. Cambridge: Cambridge University Press.
- Longuenesse, B. 1998. *Kant and the Capacity to Judge: Sensibility and Discursivity in the Transcendental Analytic of the Critique of Pure Reason*. Princeton: Princeton University Press.
- Lu-Adler, H. 2016. Kant and the normativity of logic. *European Journal of Philosophy*, 25, 207–230.
- 2018. *Kant and the science of logic: a historical and philosophical reconstruction*. Oxford: Oxford University Press.
- MacFarlane, J. 2000. *What Does It Mean to Say That Logic is Formal?* PhD thesis, University of Pittsburgh.

- 2002. Frege, Kant, and the logic in logicism. *Philosophical Review*, 111(1): 25–65.
- Martin, B., and Hjortland, O.T. 2022. Anti-exceptionalism about logic as tradition rejection. *Synthese*, 200(148):1-33.
- Nunez, Tyke. 2014. Definitions of Kant’s categories. *Canadian Journal of Philosophy*, 44(5-6): 631–657.
- 2019. Logical mistakes, logical aliens, and the laws of Kant’s pure general logic. *Mind*, 128(512):1149–1180.
 - 2020. Review: *Kant and the Science of Logic: A Historical and Philosophical Reconstruction*, by Huaping Lu-Adler. *Journal for the History of Analytical Philosophy*. 8(7): 16-31
 - 2021. Kant, Frege, and the normativity of logic: MacFarlane's argument for common ground. *European Journal of Philosophy*. 24(4):988-1009.
- Novaes C. D. 2011. The different ways in which logic is (said to be) formal. *History and Philosophy of Logic*. 32: 303-332.
- 2012. Reassessing logical hylomorphism and the demarcation of logical constants. *Synthese* 185: 387-410.
 - 2014. The undergeneration of permutation Invariance as a criterion for logicity. *Erkenntnis*. 79: 81-97.
- Plato. 1997. *Complete Works*. J. Cooper, ed., Hackett, Indianapolis.
- Ricketts, T. 2010. Concepts, objects and the Context Principle. In T. Ricketts and M. Potter, eds., *The Cambridge Companion to Frege*. Cambridge University Press, 149–219.
- Rosenkoetter, T. 2003. *Transcendental Logic And Modality In Kant's Theoretical And Practical Projects*. PhD thesis, University of Chicago.
- 2017. The logical function of Kant’s table of functions. In S. Sedgwick & D. Emundts, eds., *Logik: Internationales Jahrbuch des Deutschen Idealismus /Logic: International Yearbook of German Idealism*. Walter de Gruyter, Berlin, 29-52.
- Russell, B. and Whitehead, A. 1925. *Principia Mathematica*, volume I. Second edition. Cambridge: Cambridge University Press.
- Sheffer, H. 1926. Review of *Principia Mathematica*, volume I, second edition. *Isis: A Journal of the History of Science*. 8: 226–31.
- Stang, N. 2016. *Kant's Modal Metaphysics*. Oxford: Oxford University Press.

- Steinberger, F. 2019. Logical pluralism and logical normativity. *Philosopher's Imprint*. 19(12): 1-19.
- Strawson, P., 1966. *The Bounds of Sense: An Essay on Kant's Critique of Pure Reason*. New York: Routledge.
- Tarski, A., and Corcoran, J. 1986/1966. What are logical notions? *History and Philosophy of Logic*, 7(2): 143-154.
- Tolley, C. 2006. Kant on the nature of logical laws. *Philosophical Topics*, 34(1/2): 371-407.
- 2012. The generality of Kant's transcendental logic. *Journal of the History of Philosophy*, 50(3): 417–446.
- MS. Kant on the comprehension of thinking in the science of logic.
- Wittgenstein, L. 1921/1989. *Logisch-philosophische Abhandlung. Tractatus Logico-philosophicus: Kritische Edition*. J. Schulte & B. McGuinness, eds., Suhrkamp, Berlin.
- Wunderlich, F. 2005. *Kant und die Bewusstseinstheorien des 18. Jahrhunderts*, volume 64. Walter de Gruyter, Berlin.