

Kant on Logic and the Laws of Understanding

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—Preliminary draft. Please don't circulate.—

Like all of our powers [Kräfte], the understanding in particular is bound in its acts [Handlungen] to rules we can investigate... [T]he science that contains these universal and necessary rules is a science merely of the form of our understanding's cognition or of thinking... Now this science of the necessary laws of the understanding and of reason in general, or, which is the same, of the mere form of thinking, we call logic.

Kant, Jäsche Logik, §I (IX.11-13)¹

1. Introduction

Kant's views on logic have exercised a deep and abiding influence on the philosophy of logic, and on philosophy more generally.² His claim that logic studies the forms of thought and inference, and his insistence that this science must be distinguished on the one hand from the psychological study of mental processes, and on the other hand from the metaphysical

¹ Citations to Kant's works are to the volume and page number of the Akademie Ausgabe (1902—), except in the case of the first Critique, where I follow the usual practice of giving the pagination as in the first ("A") and second ("B") editions. I use the following abbreviations for other works by Kant:

GS = Grundlegung zur Metaphysik der Sitten

JL = Jäsche Logik

KpV = Kritik der praktischen Vernunft

MN = Metaphysische Anfangsgründe der Naturwissenschaft

PM = Prolegomena zu einer jeden künftigen Metaphysik

R = Reflexionen

VM = Vorlesungen über Metaphysik

Translations are my own, though I have consulted the translations listed in the bibliography. I have, however, sought to bring out, in a way that contemporary translations often do not, the pervasiveness of a certain Scholastic-Aristotelian terminology in Kant's writing. Thus I translate "Vermögen" as "faculty" rather than (more blandly) as "capacity," "Kraft" as "power" rather than as "force," "Handlung" (when it is the exercise of a Kraft) "as "act" rather than as "action," etc. My grounds for these choices will become apparent below.

² When I speak of Kant's views on "logic" in what follows, I will always mean his views about what he calls "pure general logic," which is concerned with "the merely necessary rules of thought," and which hence proceeds "without regard to the difference of objects on which [the understanding] is directed" (A52/B76) and consequently "abstracts from all content of the understanding's cognition" (A54/B78). I will set aside the even more problematic topic of "transcendental logic," which does not abstract from all content of cognition, but rather takes account of those features of this content that are themselves knowable a priori (cp. A55-7/B79-82) – though much of what I say also bears on the latter sort of logic.

investigation of the nature of reality, have shaped our modern understanding of the subject, and are reflected in our very term “formal logic.”³ Moreover, his claims about the philosophical significance of logic – notably, that the forms of judgment it distinguishes supply the basis for a systematic account of the basic categories our thought must bring to bear on intuitively-given objects, and that the forms of inference it recognizes hold the key to understanding the temptations of speculative metaphysics – have been the subject of intense interest and debate. But there is a curious irony in our attitude toward Kant’s views on logic. For though we generally take his ideas about the nature and significance of logic to be of great interest, our attitude toward the actual logical theory he accepted is patronizing at best.

The logical theory that Kant accepted was of course traditional, syllogistic logic, the logic that descended largely unchanged from Aristotle, and that stood largely unchallenged for two millennia, until Frege revolutionized the subject. Kant famously remarked that nothing essential needs to be added to this logical theory, so that the task of logic “seems to all appearances to have been finished and completed” by Aristotle (Bviii, and cp. JL IX.20). Today, it is hard for us to read such remarks without feeling a little amused. The logic with which Kant was satisfied seems to us profoundly limited, a description of a mere fragment of the territory that logic should treat. Moreover, its treatment of even this fragment seems strange and awkward to us. To note just a few of the features that make it seem peculiar:

- (1) It focuses almost entirely on inferences involving “categorical” judgments of the form “All (some, no) As are (not) Bs” – judgments in which a “subject concept” is “determined” by some “predicate concept.” Kant gives an account of inferences involving hypothetical and disjunctive judgments as well (A73-74/B98-99, JL IX.105-108), and he criticizes logicians who overlook these forms (B141), but his discussion of these topics is brief, and almost all of his theoretical attention is given to the act of mind involved in a categorical judgment.

³ Of course versions of these ideas are also to be found in other writers, but there is a strong case to be made that Kant played a crucial role in establishing them as platitudes, and in shaping our current understanding of what they amount to. Thus, although there are earlier statements of the idea that logic is formal, Kant’s articulation of this idea is arguably a principal source of our present understanding of it, and of our consensus upon it (see esp. MacFarlane 2003 and 2000, Chapter 4.) And though the idea that logic must be distinguished from psychology was greatly reinforced by Frege’s critique of psychologism in logic, it seems probable that Frege was himself consciously following Kant on this point.

- (2) It treats such judgments as logically simple, whereas we standardly treat them as complex propositions involving both truth-functional compounding and quantification (e.g., we regard All As are Bs as really of the form: $(x)(Ax \rightarrow Bx)$).
- (3) It gives scant attention to singular judgments, the sort we would schematize as Fa , and which we regard as logically simple. Following a long tradition, Kant treats these as equivalent for syllogistic purposes to universal judgments, so that “Socrates is a man,” for instance, is read in effect as “All Socrateses are men.” He seems to hold that the difference between a universal and a singular judgment becomes significant only when we turn to “transcendental logic,” which considers the understanding in its relation to sensibility (cp. A71/B96).
- (4) It takes a quite restrictive view of what counts as a proof. Although Kant recognizes a category of “inferences of the understanding” which depend on only one premise, his view seems to be that these do not involve a substantive cognitive step, but rather merely alter the “form” of an existing cognition (JL IX.115). The kind of inference that constitutes a proper proof (Beweis) of a conclusion is syllogistic inference, in which there are exactly two premises, and the conclusion drawn from them is a third distinct judgment. Moreover, the judgments involved in a syllogism must be connected in a quite specific way: Kant holds that every genuine syllogism (literally, every “inference of reason” [Vernunftschluß]) must be a “cognition of the necessity of a proposition through the subsumption of its condition under a given general rule” (JL IX.120). Consequently every genuine syllogism should be expressible in the form of a universal major premise plus some minor premise which states the fulfillment of a condition for that rule’s application (A304/B360-361, JL IX.126).⁴

⁴ This leads Kant to suggest at one point that hypothetical syllogisms are not genuine proofs, and hence not proper inferences of reason at all (JL IX.129). His ground seems to be that their hypothetical premise does not present the rule according to which its consequent follows from its antecedent; it simply asserts that it does follow (it “carries only the ground of proof with it”). It seems that a similar point should apply to disjunctive syllogisms, though Kant does not discuss the matter explicitly. In the first Critique, however, Kant does classify hypothetical and disjunctive syllogisms as “inferences of reason” (A304/B361-361). For illuminating discussion of how Kant can think of hypothetical and disjunctive judgments as also embodying rules, but rules that relate differently to their “condition” than do categorical rules, see Longuenesse 1998, Ch. 4.

This is hardly a complete list of the ways in which Kant's logic looks odd from our standpoint, but it should be enough to bring out why his approach can feel cramped and unnatural to people familiar with post-Fregean logic.⁵ "How," we are inclined to ask, "could philosophers have been satisfied with this stuff for two thousand years?"

Now, I think this is a good question, and worth asking about Kant in particular. For one test of whether we have understood Kant's general conception of logic is whether we can understand how he could have regarded his logical theory as adequate. If we find ourselves assenting to his abstract descriptions of the nature of logic while entirely rejecting the details of the logical theory which he took to meet these descriptions, we should wonder how well we have understood his abstract formulas. And we should wonder, too, at the common assumption that Kant's satisfaction with syllogistic logic merely reflects his failure to recognize the existence and importance of other kinds of significant logical structure and other sorts of valid inference. After all, he was not just blind to the existence of valid non-syllogistic patterns of argument: his view, it seems, was not that syllogisms are the only arguments which carry us from truth to truth, but that they are the only ones which "prove" their conclusions. Until we grasp Kant's reasons for imposing this restriction, we should be cautious about claiming that our logical theory does more adequately the very thing that he expected logic to do, and took syllogistic logic to do quite satisfactorily.

The logic Kant took for granted is undoubtedly superceded for many purposes, but before judging it to be superceded for the purposes relative to which he took it to be finished and complete, we should inquire more carefully into what those purposes were. In particular, I think we should to reflect on his claim that the task of logic is to describe "the laws of the

⁵ A fuller list of the peculiar features of Kant's logic would need to include at least (5) the fact that it treats all general terms as having existential import, so that "All sheep are black" implies "Some sheep are black" and "No sheep are black" implies "Some sheep are not black"; (6) the fact that it treats affirmative and negative judgments as different forms of judgment, rather than treating negation, as Frege recommends, as a sort of sentential compounding which forms part of the content judged; and (7) its primitive treatment of quantification, which leaves it incapable of representing the logic of relations, of multiply quantified judgments, etc.

To understand why features (5) and (6) did not strike Kant as peculiar, and why the deficiencies noted in (7) did not leap out at him, we need to understand why his general conception of logic led him not to consider certain topics, and to approach others from a certain characteristic standpoint. My aim in what follows is to throw some light on this general conception. I believe a careful consideration of this topic would help us to see reasonable motives for all of these apparent peculiarities and deficiencies; but I will focus here only on features (1) – (4).

understanding.” Like many of Kant’s characterizations of logic, this is a formula which, when understood in a certain way, seems acceptable enough to us; but I want to suggest that this verbal agreement disguises a deeper shift in our conception of logic, a shift so profound that it makes it difficult for us even to hear these words in the sense Kant intended them. To grasp their intended meaning, I will argue, we need to hear this formula in the context of a set of views about what a mental faculty or power is, on the one hand, and about what it is to understand something, on the other. These views were familiar in the period in which Kant wrote, but we have rejected them so thoroughly that we hardly remember what they were. Recalling them will help us to see why Kant’s satisfaction with syllogistic logic was not merely naïve, and it will suggest an interesting and principled answer to the question “What is logic about?”, an answer that is seldom considered in contemporary discussions.

2. Logic, psychology, and the nature of the understanding

We can work towards a better understanding of what Kant meant by “the laws of the understanding” by considering a pair of claims he makes about logic whose conjunction it is natural for a contemporary reader to find puzzling. For on the one hand, he insists on a strict distinction between logic and psychology:

Some logicians presuppose psychological principles in logic. But to bring these sorts of principles into logic is just as confused as drawing morality from life. If we were to draw our principles from psychology – that is, from observations of our understanding – we would merely see how thinking occurs and how it is under various subjective hindrances and conditions. This would lead to the cognition of merely contingent laws. But in logic it is not a question of contingent but of necessary rules; not of how we do think, but of how we should think. (JL IX.14)

This sort of remark will sound reassuring to readers convinced by Frege’s famous polemic against psychologistic approaches to logic. But other remarks Kant makes will cause such readers to feel uneasy. After all, Kant himself appears to define the subject-matter of logic by appeal to a psychological notion: he tells us it studies the laws of a certain mental faculty, “the understanding.” How can he maintain that logic is not concerned with psychological matters and yet define its domain in this way?

There is a natural first response to this puzzle which I think seeks to resolve it too

quickly. The response is that when Kant claims that logic is concerned with “the laws of understanding,” he means that it is concerned with the laws that describe how our power of understanding ought to proceed, and this topic is entirely distinct from the psychological question of how our understanding actually functions. The first part of this response is true enough: when Kant speaks of the laws of understanding, he does mean principles that govern how we ought to think, as the passage just quoted makes clear. But our willingness to move from this observation to the conclusion that such principles do not concern our actual psychology reflects our acceptance of an opposition between a normative characterization of the laws the understanding ought to follow and a descriptive characterization of the laws that actually govern this power; and our willingness to accept such an opposition is a mark of the distance between Kant’s standpoint and our own.

To bring this out, it will help to compare Kant’s view with Frege’s. Frege too says that logic can be regarded as a “normative science,” whose laws prescribe how we ought to think.⁶ But on his view, this can be said of the laws of any science, and has no tendency to show that the power to think is the topic of logic, any more than it would show that it is the topic of physics or geometry:

Any law that states what is can be conceived as prescribing that one should think in accordance with it and is therefore in that sense a law of thought. This holds for geometrical and physical laws no less than for logical laws.⁷

What logic studies, according to Frege, is not thinking but truth, and the laws it uncovers in this investigation have normative implications for thinking just inasmuch as thinking aims at truth. For Kant, by contrast, logic does not merely state principles that bear on what we should think; it has thinking for its topic (“the understanding” being a “faculty of thinking”:

⁶ See “Logic” (1897), p. 228.

⁷ Basic Laws of Arithmetic, p. 202. Compare also the following passage from “Thought”:

[I]t falls to logic to discern the laws of truth. The word ‘law’ is used in two senses. When we speak of moral or civil laws we mean prescriptions, which ought to be obeyed but with which actual occurrences are not always in conformity. Laws of nature are general features of what happens in nature, and occurrences in nature are always in accordance with them. It is rather in this sense that I speak of laws of truth... From the laws of truth there follow prescriptions about asserting, thinking, judging, inferring. (p. 325, emphases added)

Thus Frege holds that the laws of logic are fundamentally about what is true: their content is not prescriptive, and does not mention thinking. Nevertheless, they imply prescriptions about how to think inasmuch as thinking (when it consists of judging or inferring) aims at truth. For helpful discussion, see Ricketts 1996, esp. p. 127.

see A69/B94, A126).⁸ In this sense, it is concerned with a certain mental power or faculty, and so is in some sense concerned with psychology. Moreover, the suggestion that Kant takes logic to be concerned with this faculty only in a normative way does not, I think, stand up to scrutiny. After all, in the very section of the Logic in which he denies that logic can draw its principles from psychology, Kant begins by stating that “[e]verything in nature ... takes place according to rules” and that “the exercise of our powers [Kräfte]” – including, he goes on to say, our power of understanding – “also takes place [geschieht] according to certain rules” (JL IX.11). It is in this context that he says that the understanding is “bound in its acts to rules [bei seinen Handlungen an Regeln gebunden],” which logic studies. This strongly suggests that the rules described by logic are not intended to be merely normative for the understanding, but rather are meant to be rules that describe what actually “take place” with it, at least normally – and indeed, rules that in some sense “determine” how the understanding proceeds in its particular acts, in something like the way in which the laws of nature determine the course of particular episodes that take place in nature.

The comparison Kant draws between the rules of logic and the rules of morality also points toward this conclusion. To draw logical principles from psychology, Kant says, would be “just as confused as drawing morality from life.” The laws of morality must prescribe how we ought to act, and hence must not be drawn from observation of various actual human deeds and their outcomes, which could not ground conclusions with the right normative force. So too with the laws of logic. But taking this comparison seriously requires that we also consider what Kant says about the prescriptive character of moral laws; and what he says, famously, is this:

All imperatives are expressed using an ought [ein S o l l e n], and thereby indicate the relation of an objective law of reason to a will which, in virtue of its subjective constitution, is not necessarily determined by this law. (GS IV.413)

⁸ In fact, I think Kant could not explain the bearing of logic on thought in Frege’s way, by saying that logic is fundamentally concerned with laws of truth and that these imply prescriptions for thinking inasmuch as it aims at truth. For Kant holds that the very idea of truth, i.e. of a judgment’s corresponding to its object, is to be explained in terms of a certain conformity of thought to its own laws. This is one aspect of his famous “Copernican turn” in philosophy: see JL IX.49-50 and A58/B82, A104-5, B136-142. To explore this point, however, would require another essay.

The thing to notice here is that Kant says a law is expressible as a prescription when the faculty it characterizes is constituted in such a way that the law in question does not necessarily determine how it acts. That is consistent with the claim that the relevant law does determine how the faculty acts, not invariably, but when nothing interferes with its operation. And this, in fact, is clearly Kant's view, both about the laws of the will and the laws of the understanding. Thus he holds that our will is not necessarily determined by moral laws only because it is affected by another power, sensible inclination, which is capable of inclining it to deviate from what its own law prescribes; but that insofar as it is not swayed by this other power, it will act morally.⁹ And thus he holds that our understanding is not necessarily determined by its own laws only because it is affected by another power, sensibility, which is capable of exerting an "unnoticed influence" on it which leads it to mistake subjective grounds for objective ones; but that insofar as it is not thus influenced, it will judge rightly. Indeed, he argues explicitly that

No natural power [Kraft der Natur] can of itself depart from its own laws. Thus neither the understanding by itself (without the influence of another cause), nor the senses by themselves, can err. (A294/B350, cp. JL IX.53-54)

The point I want to emphasize about Kant's view of these matters is that it does not oppose prescriptive laws to laws that govern the actual functioning of a power or faculty. On the contrary, the very laws that describe the proper functioning of a power are the laws that determine its actual functioning if nothing interferes: they are laws that describe how, as we might put it, that power is in itself disposed to act. Thus if logic is the science concerned with the laws of the understanding, it is concerned with laws that do not merely prescribe to the understanding but flow from the non-normatively-described nature of this faculty.¹⁰ I have

⁹ Thus he says that a will which was not sensibly conditioned would be one for which moral laws did not hold as imperatives but rather simply as descriptions of how it necessarily does operate. Cp. GS IV.414.

¹⁰ Indeed, it is hard to see how there could be a sheerly normative science of "the laws of thought." For can it be simply a brute fact that thought ought to proceed in a certain way? On Frege's view, there is an intelligible reason why thought should conform to certain rules, namely that these rules describe how things go with the sort of object at which thought aims, namely truth. And on Kant's view as I have presented it, there is also an intelligible, though different, reason why thought should conform to certain rules, namely that these rules describe thought's own nature, to which it must conform in order to be in conformity, not with something else, but with itself. But if the laws of the understanding were simply laws about how it should proceed, what could be the explanation of these standards holding, and what could be the reason why our thinking is required to conform to them? How, for that matter, would we even know what they were? The idea of a knowable body of non-arbitrary laws whose fundamental form is prescriptive – as opposed to a purely set of purely conventional

been stressing this in order to bring out that, for Kant, logic does in a sense have a psychological topic. I think this should make us uneasy: it represents a deep difference between his conception of logic and our own. For though we may be willing to say that logic studies “the laws of valid reasoning,” our emphasis here is really entirely on the word “valid,” and this points us toward a standard that is supposed to be independent of any determinate view of how “reasoning” actually works. The laws of valid reasoning, for us, are simply the laws that describe how the truths of thought-contents with certain describable shapes are related.¹¹ “The ‘nature’ of our ‘power to think’,” we are inclined to say, “has nothing to do with it.”

Kant disagrees. To be sure, he denies that logic can draw its principles from psychology; but if we look closely at the passages in which he makes this point, it is clear that his objection is not fundamentally to the idea that logic is concerned with the actual nature of our power to think, but rather to the idea that the nature of this power can be studied empirically, “from observations [Beobachtungen] of our understanding.”¹² What he objects to is the idea that, to determine the laws of the understanding, we should study how it acts “under various subjective hindrances and conditions” – e.g., how it acts when it is distracted by powerful sensory impressions, or by hunger; or more generally, how it operates when it works on materials supplied by an independent power of sensibility with such-and-such characteristics. This is how an empirical psychological investigation would inevitably present the understanding: as it is under the conditions that actually obtain. And if we generalized from observation of how the understanding acts under such conditions, we would not uncover laws that hold of it simply as such, but at best laws that describe how it behaves under certain conditions, and that are thus contingent in the sense that their holding depends on those independent conditions holding. But, Kant maintains, such laws are no concern of logic; for its concern is to study “the right use of understanding, i.e., the use in which it agrees with

prescriptions, like those of etiquette – is actually quite strange, when you think about it.

¹¹ Reflection on this point has led some philosophers to maintain that logic and the theory of reasoning are simply distinct topics. See for instance Harman, “Internal Critique: A Logic is not a Theory of Reasoning and a Theory of Reasoning is not a Logic.”

¹² Thus when he summarizes his view a few pages later, he expresses the lesson of this discussion by saying that logic does not study the understanding “according to empirical (psychological) principles” (JL IX.16; cp. A54/B78, GS IV.387).

itself [den mit sich selbst übereinstimmenden Gebrauch des Verstandes]” (JL IX.14).¹³ When Kant denies that logic can draw principles from psychology, then, his objection is not to the idea that it studies the actual nature of the understanding, but to the idea that it can discover this nature in a certain way, by examining it as it is empirically given.

These observations clarify how Kant can consistently hold that logic is concerned with the laws of the understanding and yet that its topic is not a psychological one; for he is using “psychology” in a restricted way, to name the empirical study of the mind.¹⁴ He holds, however, that there is another kind of study of our power of understanding, one that proceeds, not through observation, but rather through an exercise of reflective self-consciousness, in which the understanding grasps the form of its own characteristic act: and this study is logic.¹⁵ This makes for a deep contrast between his understanding of the subject-matter of logic and the typical contemporary understanding. When contemporary philosophers characterize logic as a “formal” discipline, they tend to mean that it is concerned with the forms of propositions and of the patterns of argument in which they can figure. When Kant uses similar language, he means something quite different: that logic is concerned with the general form of cognition, which he explains as “the condition without which a cognition would not be a cognition at all” (JL IX.50). And cognition is here conceived as the act of a certain mental power, the understanding, so that to study the form of cognition is to study the nature of this

¹³ Note the gloss here: the right use of the understanding is the one in which it follows its own law unimpeded. Indeed, Kant holds that what makes logic a canon for the understanding is that it studies the understanding’s own constitutive law:

As a science of the necessary laws of thinking, without which no use of the understanding and reason takes place, which are consequently [folglich] the conditions under which can and should be in agreement with itself – the necessary laws and condition of its correct use – logic is a canon. (JL IX.13, first emphasis added)

¹⁴ Kant’s willingness to speak as if empirical psychology were the only possible psychology reflects his reserving the term “rational psychology” for a purported nonempirical science that supplies us with substantive cognition of the nature of the soul in itself. He of course denies that there can be such a science in the “Paralogisms” chapter of the first Critique. The science of logic escapes these strictures because, according to Kant, it does not supply us with cognition of an object: it merely describes the form of our cognitive power itself (cp. Bix, A54/B78, A60-1/B85-6). The error of rational psychology is precisely to mistake “the logical exposition of thinking in general” for “a metaphysical determination of the object” (B409). I say more about these topics below in note 23.

¹⁵ Thus Kant says that logic is “a self-cognition [Selbsterkenntniß] of the understanding and of reason” in respect of the form of their own cognizing (JL IX.14).

act, in abstraction from whatever object it may be directed upon.¹⁶

These formulations bring out, I hope, how deeply Kant's thinking about logic is informed by concepts belonging to a certain philosophical tradition, one whose central categories include the notions of a power and its characteristic acts, of the distinctive objects of a certain kind of act (in a sense of "object" that involves both the idea of that on which and that for which the act is performed), of a faculty with a certain describable form or nature, and of a unity or system to which such faculties belong. The tradition is, namely, the Scholastic-Aristotelian tradition of thinking about the order and purpose of our mental faculties.¹⁷ It is a philosophical standpoint which would have been familiar to educated readers of Kant's day, but which has been so thoroughly suppressed that most contemporary philosophers do not, I think, have a clear idea of what it amounted to. The result of this suppression is that, in many instances, we do not see clearly what Kant was claiming, and he looks to us to be putting forward some novel and mysterious thesis when in fact he is simply drawing out consequences of a view he would have taken to be well known.

A watershed moment in 20th century Kant scholarship in English was the publication of P. F. Strawson's The Bounds of Sense, and Strawson's attitude toward Kant's a priori faculty psychology is notorious: he took it to be an "imaginary subject" from which the genuine insights of the first Critique had to be disentangled.¹⁸ Subsequent writers have been more sympathetic to this part of Kant's thinking, but their attempt has generally been to show how these elements can be made more palatable to contemporary readers, and there has not to my knowledge been a systematic attempt to present this aspect of Kant's view against its

¹⁶ For Kant's use of this act and power terminology in connection with the understanding, see once again the passage quoted at the head of the paper. Many more examples of his use of these terms will be given below.

¹⁷ One author who has noted Kant's growing use of scholastic Aristotelian terminology in the lead-up to the Critical period is Giorgio Tonelli (1964). Tonelli argues convincingly that Kant's so-called "silent decade" was marked by an ever-increasing tendency to favor vocabulary from this tradition in preference to the terminology of the Wolffian school, which he had used in the preceding decades. I should say, however, that I find Tonelli's interpretation of this shift strange and Machiavellian. On his view, the meaning of these terms in Kant's usage is "quite distant from that of their Aristotelian homonyms," and Kant's decision to adopt them was a strategic attempt to present his new position in terms which would not be confused with the philosophical terminology of his day, but which nevertheless would be familiar enough that his views would get a hearing (p. 241). Surely a more straightforward interpretation is that Kant began to find these terms apt for expressing what he thought!

¹⁸ Strawson 1966, p. 97.

Scholastic-Aristotelian background.¹⁹ This is too large a project to take on here, but I do want, in the remainder of this paper, to mark two ways in which this background shapes Kant's thinking about logic: first, the way it prompts him to focus, in his thinking about logic, on the act of judgment; and secondly, the general conception of aim of cognition toward which it leads him to see such acts as directed. Seeing these connections will put us in a better position to understand Kant's satisfaction with syllogistic logic, and to see intelligible reasons for various features of this logic that strike us as peculiar.

3. Logic and the act of judgment

In a crucial section of the first Critique entitled "On the logical use of the understanding in general," Kant argues that we can "trace all acts of the understanding back to judgments" (A69/B94). He then proceeds to argue that "the logical function of the understanding in judgment" can take various forms, which he presents in a famous table (A70/B95). A large literature has grown up around the question where the divisions of this table come from, and whether Kant is entitled to claim that they represent an exhaustive inventory of the basic forms that judgment can take.²⁰ I will not take up this question here, but will instead simply make an observation about the principle from which the divisions are supposed to follow: namely, that it is a conception of the fundamental act of understanding. The table is a table of moments of the function of the understanding in judgment, where a function is "the unity of the act of ordering different representations under a common one" (A68/B93). Our concern in the table is thus with different ways in which a certain act can be or have a unity, and the act in question is clearly: judgment.

¹⁹ Thus Allison 1983, for instance, responds to Strawson's dismissal of this aspect of Kant's thinking by arguing that we can see a point in it if we regard it as belonging to an investigation of the "epistemic conditions" of the world's being presented to us, while Kitcher 1990 suggests that it can be read as a sort of proto-cognitive science. More recently, Longuenesse 1998 has given greater attention to Kant's thinking about capacities and acts in the context of his views about judgment, and there are many points of agreement between her reading and the one I present here. But even Longuenesse, though she emphasizes Kant's focus on the capacity to judge (her preferred translation of Vermögen zu urteilen), does not discuss the framework of faculties, powers, and acts in much detail. For discussion of their importance, with special reference to Kant's moral philosophy, see Engstrom forthcoming.

²⁰ For representative discussion, see Reich 1932, de Vleeschauer 1934, Tonelli 1966, Wolff 1995, and Longuenesse 1998.

This makes the description of the general nature of the act of judgment, which Kant gives in the immediately preceding paragraph, crucial for understanding his view of what these forms characterize, and why they are basic. Looking simply at the table of judgments, and knowing that this is (more or less) a table of kinds of proposition standardly distinguished by logicians of Kant's day, we can easily overlook this introductory material and assume that Kant's primary topic is "forms of judgment" in the sense of: forms of proposition judged. If we make this assumption – if we hear "judgment" in the sense of "proposition judged" rather than the sense of "judging" – then, inevitably, the table of judgments will look to us like a mere distillation of distinctions from various 18th-century logic textbooks, which Kant then groundlessly asserts to be exhaustive. To understand the principle from which these divisions flow, we need to reflect on the idea that our topic is forms of an act, and specifically an act whose aim is cognition. In this section, I will just focus on the idea that judgment is an act, and the conceptual framework in which this classification locates it. In the next, I will turn to the details of Kant's conception of judgment and the account of cognition that underlies it.

Kant's description of judgment as an act places it in the context of the set of Scholastic-Aristotelian categories I highlighted a moment ago. Judgment is the act of a certain power, the understanding, and if we are to comprehend the sense in which I am active when I combine representations in judgment, the first thing we need to consider is the general relation of powers to their acts. This is not a relation to which Kant devoted extensive discussion; it is one he largely took for granted, because it was part of the stock-in-trade of the philosophical tradition in which he was writing. He does, however, remark on its importance and its familiarity:

This [concept of] causality leads to the concept of act, this to the concept of power, and thereby to the concept of substance. Since I do not wish to clutter my critical project... with divisions which merely concern the elucidation (not the amplification) of concepts, I leave aside the detailed exposition of these [concepts] for a future system of pure reason – especially since one can already find such an analysis in rich measure in well-known textbooks of this kind. (A204/B249)²¹

²¹ Kant seems to have had in mind, above all, Baumgarten's *Metaphysica*, which was the textbook he used in his own lectures on metaphysics. Baumgarten includes a section on substances, powers, and acts, which Kant regularly discussed in his lectures. In general, Baumgarten seems to have been a major conduit through which

This remark occurs in the midst of Kant's discussion of the schematized categories in the "Principles" chapter of the first Critique, and I think its placement has led many readers to focus exclusively on the application of these concepts to objects presented in experience.²² But Kant clearly invokes this set of interconnected concepts – Substanz, Kraft, Handlung – also in connection with the mind. Indeed, in his lectures on metaphysics, having defined a power as "the relation of the substance to its accidents, insofar as it contains the ground of their actuality," Kant takes the "faculty of thinking" (i.e., the understanding) as his first illustration of such a thing: this is "the relation of the soul to thought insofar as it contains the ground of its actuality."²³

scholastic metaphysical terminology reached Kant.

²² This reading is encouraged by the usual translation of Kraft in this context as "force," whereas when used in connection with the mind, it is usually translated as "power." I think this choice of translation, though intelligible, is a mistake. It is certainly true that Kant means his remarks about Kräfte to have a bearing on Newtonian natural science, but translating Kraft differently in different contexts disguises the unity that Kant sees in this topic (his thought is precisely that the very same metaphysical concept has a role to play both in a sound analysis of mind and in an adequate natural science), and it also obscures a connection, which Kant clearly intends, with traditional metaphysical discussions of substances and their powers.

²³ VM XXIX.771: the passage is from the Metaphysik Mrongovius, which contains notes on Kant's metaphysics lectures from the academic year 1782-3, the year after the publication of the first edition of the first Critique.

Longuenesse notes the parallel between Kant's general remarks on substances, powers, and acts and his talk of mental acts and mental powers, but suggests that "one should approach this parallel with caution" since "the Critique warns us [in the Paralogisms chapter] not to consider the Gemüt or mind, the whole of our representational capacities, as a substance" (1998, pp. 7-8). The passage from Kant just quoted suggests that, although caution is certainly in order, we should not be dissuaded by the Paralogism from reading his remarks about mental powers in the light of his general views about substances, powers and acts. For Kant himself – according to the lecture notes of one of his students, anyway – mentions the power of thinking in a general discussion of the relation between substance, power, and act. These lectures were given in 1783, shortly after the publication of the first edition of the First Critique, and in them he repeats essentially the same criticisms of Rational Psychology that he makes in the Paralogisms chapter. It seems, then, that he must not think there is a tension between bringing the framework of substances, powers and acts to bear on the mind in this way and his attack on the fallacious conclusions of the rational psychologists.

Closer examination of the Paralogisms bears this out. What Kant denies in the Paralogisms is that we are entitled to infer that the "I" that thinks is really a substance in itself (which would entail its permanence, immutability, etc.) from the fact that it must be conceived in terms of the logical categories characteristic of substances. He does not deny that we must conceive of our mind as having the logical nature of a substance, and thus of our mental powers as having the kind of unity the powers of a substance have. On the contrary, he affirms this, although he denies that it entitles us to draw the conclusions of the Rational Psychologists:

[E]veryone must necessarily regard Himself as substance, but regard his thinking only as accidents of his existence and determinations of his state... [O]ne can quite well allow that the proposition The soul is substance holds, if one only admits that this concept ... cannot teach us any of the usual conclusions of the doctrine of rational psychology, such as the everlasting duration of the soul through all alterations, even the person's death – [if only one admits, in other words] that it signifies a substance only in idea but not in reality. (A349-351)

The connection I am drawing between Kant's remarks about our power of understanding and his thinking about

Kant's general remarks about substance, power, and act bring out two points that we should notice. First, to ascribe a power (or faculty) to a subject is to ascribe to it a kind of condition which is potentially explanatory of its bearing various other predicates on various occasions: in virtue of having the power in question, the subject is "the ground of the actuality" of certain other features it possesses.²⁴ To ascribe a power to a subject is thus to make a nontrivial commitment about how that subject will be or what that subject will do if suitable conditions present themselves. The things it then does are its acts: an act is what comes to be when a power meets the conditions suitable for it to express itself. These need not consist of "actions" in the usual contemporary sense of the term: a subject's knowing something, for instance, though not an event or process, would in this tradition be regarded as an "act" of its power to know. Not just any predicate borne by a subject designates one of its acts, however. To call something an "act" of a subject is to represent it as a way of being or

the categories of substance, power, and act does not require any claim about the real nature of the subject to whom these powers belong; it simply brings out the consequences of regarding the mind as a substance "in idea," as Kant says we must (cp. also A672/B700). The kind of unity our mental powers possess is logically speaking the kind of unity that the powers of a substance possess, even if we cannot conclude that this logical unity corresponds to the sort of real unity that rationalist metaphysicians sought to infer from it. This is a difficult topic, however, which deserves a fuller treatment than I can give it here.

²⁴ A word about Kant's use of the term "faculty" (Vermögen, facultas). In his lectures on metaphysics, Kant says the term "faculty" designates "the ground of the possibility of an act," while "power" (Kraft, vis) designates "the ground of the actuality of an act" (VM XXIX.823-4, and cp. XXVIII.565). Kant says little to clarify this distinction, but he seems to be following an established scholastic usage (cp. Aquinas, Disputed Questions on the Virtues, §1). In this tradition, the faculty/power distinction appears to function simply as an alternative terminology for Aristotle's distinction between first and second potentiality. An Aristotelian "first potentiality" is a potentiality which belongs to the nature of a certain kind of thing, but which requires some sort of development to become a standing ability. A "second potentiality" is the achieved ability when it stands ready to act on suitable occasions. Thus a newborn child is said to have knowledge of grammar in first potentiality (i.e., as the mere faculty of grammatical understanding, which makes it possible for this child to come to understand grammatical speech), but not yet in second potentiality (i.e., as a developed power to understand of spoken utterances when they occur). A person who has learned to speak grammatically has the power of grammatical understanding. When he is forming or understanding grammatical sentences, he is exercising this power: these cognitive episodes are acts of grammatical understanding (cp. Aristotle, De Anima II.5, 417a20-35).

Kant speaks sometimes of the understanding as a faculty (e.g., A51/B75, A81/B106, B137) and sometimes as a power (e.g., B130, A130-131/B169, JL IX.11). If the preceding account of the faculty/power distinction is correct, this makes sense. Since the power of understanding is simply the faculty of understanding when it has undergone an appropriate development, a normal rational being can be expected to come to have the faculty of understanding in its developed form. So it is equally correct to speak of the understanding as a faculty of rational beings and as a power to which they characteristically attain.

This account of the faculty/power distinction differs from the one proposed by Longuenesse. She suggests that the Urteilkraft – the power to judge – is "the actualization of the Vermögen zu urteilen under sensory stimulation" (1998, p. 7). I think this conflates the faculty/power distinction with the power/act distinction. The power to judge is the natural potentiality to judge realized in the form of a standing ability, and the judgments made by this power "under sensory stimulation" are its acts.

becoming whose primary explanation is to be sought in the nature of that subject, as opposed to in the effect of some other thing on the subject in question.

This brings us to the second noteworthy point, namely that thinking of something as a power involves thinking of it as possessed by a substance with a describable nature. Talk of powers belongs to a way of looking at the world in which certain things that exist have a nonaccidental unity and tendency to persist. Substances are not mere accidental assemblages, like a heap of sand, whose existence comes to nothing over and above the contingent gathering of various independently-existing parts in a certain configuration, a configuration which has no tendency to persist in its own right. Genuine substances are unities whose composition and whose persistence are explicable by reference to an inner principle: this is what it means to say they have a “nature.” This substantiality expresses itself in their tendency to cohere and sustain themselves through various characteristic acts – acts which contribute, in one way or another, to the principal act of the substance in question, which is simply: to exist, i.e., to be the kind of thing it is. In regarding a substance as having a certain power, we thus commit ourselves to making sense of that particular tendency as having its source in one of an ordered system of powers whose acts variously contribute to the self-sustaining character of the system in question. This way of looking at the world thus introduces a kind of functional perspective on certain parts of what exists and takes place: substances are always “trying to be themselves,” as we might crudely put it, and their various particular powers are distinguished precisely by the diverse but related ways in which they contribute to making possible this fundamental act.²⁵

There are many indications that Kant is thinking of the powers of mind along these general lines. One telling piece of evidence is his willingness to make certain characteristic assumptions about these powers. Thus at various important moments in the Critical system, he argues as follows: There can be no power of mind without some sound and distinctive

²⁵ Thus the Aristotelian tradition regards living things as paradigm cases of substances: they “keep themselves in being” through various characteristic acts, acts which are expressions of a system of interconnected powers, all of which are subservient to the fundamental “life-power” which gives them their unity as distinct existences. Kant of course discusses the role of teleological understanding of the representation of living things in the Critique of Teleological Judgment. I am suggesting, however, that there is a kind of regulative role for functional or teleological understanding already implicit in the very idea of a substance characterized by various powers, even when this idea is not applied to the special kind of being that Kant calls a “natural purpose.”

function; therefore power X, whose function might seem to be more adequately performed by some other power, or which might seem to have no function at all, must have some sound and distinctive function.²⁶ Kant's willingness to make this assumption about our mental powers indicates that he thinks of the various cognitive powers as distinguished precisely by their each having some distinctive function, where each such function makes some essential, positive contribution to the cognitive existence of the subject in question. Indeed, he repeatedly announces this thought as one of his guiding principles:

[Pure reason], as regards the principles of its cognition, is a quite separate, self-subsistent unity, in which each part exists for every other, and all for the sake of each, as in an organized body. (Bxxiii, and cp. Bxxxvii-xxxviii)

Everything that is grounded in the nature of our powers must be purposive and in agreement with the correct employment of those powers. (A642/B670)

To a reader unfamiliar with the general framework that Kant is taking for granted, such remarks may sound like merely pious expressions of faith that Nature or the Creator has molded our various intellectual powers into a harmonious shape. That, however, would be a serious misunderstanding of the role of such propositions in Kant's thinking. It is not that we find that, happily, our powers exhibit this sort of harmonious integration; it is that something counts as a power only to the extent that it has a role in making possible the existence of such a self-sustaining system. What Kant calls "reason" (in the sense of the general faculty which has both theoretical and practical employments) is the general power that explains the existence of a rational subject, inasmuch as this existence depends on thought.²⁷ The various powers of reason are distinguished precisely by their different contributions to making the existence of a self-sustaining system of rational cognition possible, much as the organs of the body are distinguished by their different contributions to making our bodily existence

²⁶ Compare his remarks about our power of pure theoretical reason in the Appendix to the Transcendental Dialectic in the first Critique (A642-643/B670-671), and about our will (i.e., our power of pure practical reason) in the first part of the Groundwork (GS IV.395).

²⁷ Which it does in our case only in a limited way: whereas a divine intellect, which did not depend on material conditions, would be one whose thinking was sufficient for its existence, we are embodied thinking beings, whose existence has material conditions which thought cannot itself supply. Nevertheless, we human beings live by knowing and acting, so thought is necessary to our existence; and we can abstract from our embodiment and consider our cognitive power just insofar as it sustains itself by systematizing its various acts of knowing in a way that is self-supporting. This, I think, is what is involved in considering our power of reason as the power of a thinking substance. I say more about this below in §4.

possible.

This general excursus on substances, powers, and acts has taken us some way from the topic of the laws of understanding in particular. The digression will have been worthwhile, however, if it leads us to ask the right questions when we return to the understanding and its act of judgment. If Kant is thinking of judgment as the act of a power belonging to a functionally-organized system of powers, then the first question to ask about it is: what is the function of this act, and how does that function contribute to the function of the understanding as a whole?

4. Logic and the aim of cognition

This orientation toward the function of judgment puts us in a position to perceive a deeper significance in Kant's claim that logic studies the laws of the understanding. We post-Fregeans are inclined to hear this merely as the claim that logic charts the laws from which our thinking must not depart in its search for truths: laws that constrain cognition. For Kant, I want to suggest, it meant something more positive: it meant that logic studies the laws which describe what it is to understand something, laws whose ever-more-systematic application in our thinking constitutes its increasing perfection as cognition (cp. JL IX.49-57, B114). A major reason why Kant's logical theory looks peculiar to us, I think, is that we fail to see it from this standpoint. My aim in this final section is to show how the four peculiar features of his logical theory that we noted at the outset become more intelligible when seen in context of his conception of judgment and inference, and the general cognitive aims that these acts serve.

When Kant characterizes the act of judgment in the paragraph that precedes the table of forms of judgment, he does so precisely by describing its role in making cognition possible. The task of any power of understanding, he holds, is to cognize a manifold of representations by combining them in such a way that they "determine an object" (cp. A50/B74, B137, B166n); but our power of understanding, being finite, cannot supply this manifold itself. Rather, it must receive a manifold of representations from another power, sensibility, and its distinctive task is to "synthesize" this manifold into the sort of unity whereby it has a "certain content" (A77-78/B103). This it does by "ordering different representations under a common one," that is, by bringing concepts to bear (A68/B93).

Indeed, Kant explains what sort of representation a concept is by appeal to this role in cognition: a concept is a representation which does not by itself determine an object, but is related to an object only “mediately,” by subsuming other already given representations.

Thus:

a concept is ... never immediately related to an object, but always to some other representation of it (whether that be an intuition or itself already a concept). (A68/B93)

That our understanding can produce only this sort of representation is a reflection of its finitude; a divine “intuitive understanding” would be capable of representing in a way that related “immediately” to an object, instead of relating to an object only via another kind of representation (cp. B145). But on the other hand, although the intuitions we receive from sensibility do “relate immediately” to objects, these representations do not by themselves supply us with cognition. Thus Kant famously holds that intuitions without concepts are “blind” (A51/B75).

Kant seems to regard the fact that judgment is the basic act of our power of understanding as a direct consequence of these facts about the nature of this power. Since our understanding can produce only representations which relate mediately to objects, the act by which it cognizes an object can only be one in which it brings to bear such a representation on an already-given representation, thereby “determining” that given representation in such a way that a new cognition results. Judgment is precisely this act of determining (applying a predicate to) a given representation (the subject) in a way that extends cognition:

Judgment is thus the mediate cognition of an object, that is, the representation of a representation of it... So for example in the judgment: All bodies are divisible, the concept of the divisible relates to various other concepts; among these, however, it is here particularly related to the concept of body, and this in turn is related to certain appearances that come before us. These objects are thus mediately represented by the concept of divisibility. (A68-69/B93-94)

But on the other hand, since intuitions by themselves are blind, the representation which judgment further determines must already involve a concept of the object: it must always already be an apprehension of something as of some type or other. Kant says words to this effect in many places, but he says it most explicitly in an important Reflexion:

We are acquainted with [kennen] any object only through predicates we say or

think of it. In advance of this, any representations to be met with in us count only as materials, not as the cognition. Thus an object is only a something in general which we think to ourselves through certain predicates which constitute its concept. In every judgment, accordingly, there are two predicates that we compare with each other. The first of these, which constitutes the given cognition of the object, is called the logical subject; the second, which is compared with it, the logical predicate. If I say: A body is divisible, that is as much as to say: Some \underline{x} , which I am acquainted with under the predicates that together constitute a concept of the body, I also think through the predicate of divisibility. (R 4634: XVII.616-617; cp. R 3921: XVII.345-346)

This account of judgment and its role in extending cognition has many suggestive features, not all of which can be considered here. What is important for our purposes is the palpable connection between this account and Kant's focus on categorical judgments in his logical theory. A categorical judgment relates two concepts, a subject-concept and a predicate-concept.²⁸ The manner of their relation – whether it pertains only to certain objects or to all; whether the assertion is of agreement or disagreement of the predicate with the subject; whether the relation is regarded as merely possible, actual, or necessary – depends on the form in which these materials are placed. But in any case, the basic act of judgment is the act of determining one concept by relating it to another, an act whose general form we could represent as: S – P. This contrasts with a Fregean view, which takes the simplest sort of judgment to be the assertion that a certain object falls under a concept, a mode of composition which is standardly symbolized: Fa. If this latter analysis of the primitive form of judgment is read – no doubt contrary to Frege's intention – as an account of the basic act through which we cognize, the story it tells is of our classifying already-apprehended individuals, whose availability to our thought presupposes no precedent classification. For if our apprehension of the object, a, itself presupposed some sort of classification, and if our aim in constructing our logical symbolism were to represent the basic structure of the act of mind through which cognition is possible, then we could not allow the term a to appear primitively in our analysis. Given Kant's views about the nature of cognition and the task of logic, then, the Fregean approach cannot count as a satisfactory analysis of the fundamental form of a judgable content. The syllogistic approach, by contrast, is at least along the right lines: it represents our basic cognitive act as one of further determining an extant concept of an object. Kant's

²⁸ I am indebted to Thomas Land for making me see the importance of this point.

general view of cognition thus sheds light on the first two puzzling features of his logical theory: (1) its focus on categorical judgments, and (2) its treatments of such judgments as logically simple rather than logically composite.

I think it also sheds light on feature (3): the scant attention paid to singular judgments. For on the view of cognition sketched above, reference to particulars enters our judging, not as a distinct element, as in the Fregean analysis, but rather as a manner in which a relation between concepts is presented. A judgment is singular in form just if it presents the subject-concept as determined by a certain predicate-concept simply in respect of its instantiation in one particular object: This S is P. But now Kant holds that the possibility of this sort of relation to an object – the sort that funds the concept of a particular individual, “This S” – depends on the possibility of the presentation of the relevant object in sensible intuition. Singular judgment is thus possible – at least in the fundamental case – only in virtue of sensible intuition, for only intuition supplies us with representations which are singular.²⁹ But general logic, on Kant’s view, is concerned with the laws of thought in abstraction from all relation to sensibility – laws which pertain to the understanding simply as such. So general logic can only be concerned with general relationships between the subject- and predicate-concepts. And the fundamental such relationships are plausibly just those distinguished in syllogistic logic: that the predicate-concept determines (affirmatively or negatively) all instances of the subject-concept (universal judging), or only some of them (particular judging).

At least in these respects, then, Kant’s satisfaction with syllogistic logic goes hand-in-hand with his general theory of cognition. I suppose it might be held that Kant simply tailored his account of cognition to fit the logic with which he was acquainted, but I do not think this suggestion has much plausibility. He certainly is not inclined simply to accept the

²⁹ The claim is that this is the cognitively fundamental case of singular judgment: no doubt if sensible singular judgments are possible then the truth-conditions of other kinds of singular judgments (judgments involving memory-based demonstratives, names, definite descriptions, etc.) are explicable on the basis of them. It is of course possible to resist even the claim that the fundamental case of singular reference depends on the senses (call this “the fundamentality claim”). If Frege was right that numbers are objects, and if we can explain how we are in a position to represent numbers with appealing to features of our nature as sensible creatures (which Kant would have denied), then the fundamentality claim is wrong. My aim here is not to enter into this dispute, but simply to note how substantive and controversial are the assumptions that underwrite the denial of the fundamentality claim, and how natural Kant’s approach becomes if the claim is accepted.

consensus view of logicians: he often criticizes logical consensus. And in any case, it should be clear that the views about cognition which I have been describing are deep commitments of his thinking, perhaps as fundamental as any feature of his philosophical outlook. The idea that he accepted them simply because the orthodox logic implied them gives him too little credit.³⁰

This is all I will say about the first three puzzling features of Kant's logic. In closing I want to turn to feature (4): his focus on one quite specific pattern of argument as the fundamental form of "proof." This too, I believe, has its source in his general conception of cognition. Exploring this connection will return us to the idea that the anchor of a system of powers is the idea of a unity to which those powers belong, and which sustains itself through their various characteristic acts.

We should first note a few points about how Kant thinks of the pattern of argument that he privileges. I have already mentioned that he thinks of it as presenting a "cognition of the necessity of a proposition through the subsumption of its condition under a given general rule" (JL IX.120). That is, the combination of subject and predicate in the conclusion is exhibited as deriving from a rule which states that a certain predicate applies to, or does not apply anything that meets a given condition, and another premise which states that a certain subject meets the condition in question.³¹ Thus, to take an example from the first Critique, I may know as a general rule that all humans are mortal, and then, recognizing that all scholars meet the condition of being human, I infer that all scholars are mortal (A304/B360-361). Like other syllogistic logicians, Kant sometimes speaks of such an inference as primarily relating not propositions but concepts (or "terms"): our bringing the concept scholar universally under the concept mortal is "mediated" by a "middle term," human, our cognition of which is what enables us to see the necessity of judging that all scholars are mortals (see e.g. A322/B378,

³⁰ In a fuller discussion, I would want to argue that Aristotle himself held views about cognition quite similar to Kant's, and that these determined the shape of his logic, so that what spoke in favor of syllogistic logic was never simply that it captured certain valid inference-forms, which were then unaccountably held to be the only significant ones.

³¹ Hence Kant insists that all sound syllogistic proofs must be reducible to one of the valid moods in the first syllogistic "figure," in which the major premise is universal (affirmative or negative), and the minor is affirmative (JL IX.126). And, indeed, all other valid syllogistic moods are thus reducible, as was shown by Aristotle himself.

VM XXIX.888-889). It is this relation of “mediation” that Kant demands in any genuine “inference of reason”: the connection of subject and predicate made in the conclusion must be presented as depending on a middle term, our cognition of which shows us the rightness of connecting the two extremes in the relevant way. Unless our knowledge of a conclusion can be represented as necessitated in this a way by a more general cognition, Kant holds that we are not dealing with a proof of the conclusion, even if the transition we have made exhibits a form that always leads from truth to truth.

If we ask why Kant imposes this restriction on what he will count as a proof, the outlines of his answer are clear enough: he holds that only this form of argument exhibits the necessity of combining this subject with this predicate, and he regards the comprehension of such necessities as the fundamental task of reason. Thus, having noted that in a syllogistic proof one “cognizes the conclusion a priori ... as contained in the general and as necessary under a certain condition,” Kant remarks that “that everything stands under the general and may be determined by general rules is the very principle of rationality or of necessity” (JL IX.120). But these associations – of rationality with necessity, and of necessity with generality – may seem puzzling. For in the first place, we can surely prove propositions that do not hold necessarily; and indeed Kant himself gives numerous examples of syllogistic arguments whose conclusion is in the assertoric, not the apodictic, mode. What then can he mean by claiming that a proof must involve “the cognition of the necessity” of a judgment? And at any rate, why should only arguments that exhibit a conclusion as the application of a general rule supply us with cognition of that conclusion? If I know that my premises are true, and I know that I am drawing an inference from them in accordance with an argument-form that always leads from true premises to true conclusions, why should I not count as knowing that my conclusion must be true (in whatever sense a reasoned conclusion “must be true”), whether or not the argument has the form of a syllogism?

The first of these questions is the easier one to answer. The necessity of which I am made conscious when I am confronted with a valid syllogism from known premises is the necessity of judging that a certain predicate applies to a certain subject. A proof may or may not show a certain predicate necessarily applies to a certain subject, but at any rate it aims to show that any right-thinking power of understanding must judge it to apply (whether necessarily or merely actually). Now, Kant holds that every objectively-significant judgment

lays claim to this sort of necessity: not every judgment presents a certain predicate as belonging to a certain subject necessarily, but every judgment presents the combination of a certain predicate with a certain subject (be it is problematic, assertoric, or apodictic) as holding, not just contingently for my individual consciousness, but necessarily for any consciousness judging correctly about this matter. This sort of claim to necessity is an inevitable feature of any judgment that purports to determine an object, since

when a judgment agrees with an object, all judgments concerning the same object must likewise agree among themselves, and thus the objective validity of the judgment of experience signifies nothing other than its necessary universal application. (PM IV.298)

By its very nature, then, a judgment lays claim to being a nonarbitrary combination of representations – one that holds, not just for my consciousness, but for “consciousness in general” (PM IV.304-5; cp. A104, B142). A proof must exhibit the necessity of its conclusion in this sense: it must present the act of determining-this-subject-with-this-predicate as an act that any sound power of understanding must perform. A proof of a judgment thus fulfills a promise that any judgment implicitly makes.

But why must such a proof take the shape on which Kant insists? It is at this point that we must turn once again to his general conception of cognition. We have noted that the form of argument Kant privileges is one that exhibits the connection of a certain subject with a certain predicate as “determined” by a general rule, and we have seen that this involves tracing the unity of these representations to a more embracing concept. Thus scholar is shown to be universally determined by mortal because it is universally determined by human, and mortal belongs universally to our cognition of human. The first thing to notice about this derivation is that, in recognizing it, I perform exactly the sort of act in which cognition generally consists: I grasp the unity in which a manifold of given representations stands, and thereby comprehend the source of the objectivity of a certain combination of that manifold. The manifold, in this case, consists of scholar and mortal; I grasp the unity of these elements by seeing their relation to the condition embodied in the concept human.³² It is in this sense

³² What appears from one angle as the act of proving a certain judgment is thus from another angle the act of bringing a manifold of representations under a concept. This sheds light on Kant’s well-known characterization of concepts as rules for the synthesis of representations (A106).

that a proof exhibits a rule as “determining” the combination of a certain subject with a certain predicate: it traces the rightness of this combination of elements to a rule under which they stand, and thus validates the implicit claim of judgment to combine representations in an objective, nonarbitrary way. But precisely this is the basic act of cognition as Kant conceives it. For, as we have seen, cognition in general is “the determinate relation of given representations to an object” by the bringing to bear of concepts, which are representations whose function is precisely to serve as rules for combining manifolds (B137, cp. A97, A106). The pattern of argument Kant privileges is thus a pattern by the application of which we make our body of cognitions more fully what all cognition, by its very nature, aims to be.³³

The attractiveness of this conception of how proof contributes to cognition stands out if we consider how it fits together with a venerable conception of what it is to understand the natural world, a conception that also descends from Aristotle. According to this conception – to summarize it very briefly – the world consists fundamentally of substances, and the fundamental predicate under which a substance falls is the predicate that specifies what kind of substance it is: a man, a horse, a rhododendron, etc. An understanding of such kinds aims, first, to define their natures by locating higher genera under which they fall and the specific differences that set them apart within these genera; and secondly, to show how various traits characteristic of these kinds are not mere accidents but ways of being which are essential in something of the relevant kind, or are further propria which follow from what is essential in something of that kind. Now, if this is the sort of intelligibility to be found in the natural world – if individual things belong to basic kinds whose natures explain various characteristic traits of those individuals, and if the natures of such kinds can in turn be understood as specific ways of satisfying the imperatives characteristic of higher genera under which they fall, and if the natures of these genera can be understood as specific ways of satisfying the imperatives of still higher genera – then syllogisms are a natural framework in which to present this intelligibility. For what a syllogistic proof presents is precisely a demonstration of how more particular traits of things follow from facts about more general sorts to which those things belong. Traits of a substance that are not demonstrable in this way are, on this

³³ Compare A305/B361: “[R]eason, in inferring, seeks to bring the greatest manifold of cognition of the understanding to the smallest number of principles (general conditions), and thereby to effect the highest unity of this manifold.”

view, mere “accidents,” whose presence does not reflect what that substance essentially is. Progress in understanding what a thing is comes only through grasping what it is nonaccidentally, in virtue of its own nature. And the syllogistic pattern of argument is a pattern molded to represent just this sort of understanding: an understanding that seeks an ever-deeper comprehension of the inner principle that gives things their unity and makes them be the way they are.

Now, Kant’s attitude toward this Aristotelian picture of understanding is complex, and it would be impossible to give it a thorough treatment here. It must suffice to note that, although Kant (following Locke) denies that we can know the real essences of empirically-given substances, he nevertheless maintains that the aim of asymptotically approaching such knowledge operates as a regulative ideal for our cognition, so that we are justified in seeking a “fundamental power” of each substance which explains the various more particular powers and acts it exhibits, and also in attempting to locate individual substances within a systematic hierarchy of species and genera.³⁴ Kant thus continues to regard the form of understanding embodied in syllogistic inference as a paradigm of successful cognition. This, I think, is why he privileges this pattern of argument as the form of genuine proof.

Admittedly, not just any argument that is syllogistic in form supplies cognition of its conclusion in this sense. If a syllogistic argument is to do this, the major premise on which it depends must be cognitively more fundamental than the fact it serves to prove. There is an ancient objection to syllogistic reasoning, apparently due to Sextus Empiricus, which maintains that no syllogism can ever be a genuine proof, since any argument that proceeds by applying a general rule to a particular case must involve a petitio principii.³⁵ For, the objection runs, we must know the general rule somehow; but how can we know it without already knowing how things stand with respect to the cases to which it applies? A rule holds generally only if it holds in all cases, so to know that it holds generally we must know that it holds in every case. So, it seems, knowledge of the rule presupposes knowledge of the cases,

³⁴ For the denial that we can know real essences (which is closely connected with Kant’s claim that we cannot know things in themselves), see JL §§103-106, VM XXVIII.553, XXIX.820. For claim that the aim of such understanding must operate as a regulative ideal for our cognition, see esp. A648-653/676-681, and also KU V.181-186.

³⁵ Outlines of Pyrrhonism, II, §163.

and cannot supply an independent ground for the latter knowledge. If this objection is sound, then the syllogistic conception of proof makes an impossible demand. But the objection really just brings out what must be the case if such an argument is to be a genuine proof: namely, that there must be rules whose truth is knowable independently of knowing how things stand in the cases that fall under them. The rules in question must, that is, be what Kant calls “principles”: synthetic, general judgments whose truth is knowable “from concepts,” rather than from the intuitive presentation of subordinate cases (cp. A301/B357-358).³⁶ Kant himself observes that not every general proposition which can stand as the major premise of a syllogism has this character:

Any general proposition, even if it is taken from experience (by induction), can serve as the major premise in a syllogism; but it is not therefore itself a principle. (A300/B356)

Hence not every valid syllogism constitutes a proof. Nevertheless, the syllogistic form of argument is the form that genuine proofs must exhibit, for an argument must have this form if it is to present a particular combination of concepts as determined by a more general law, and hence as necessary. And this, if my reading is correct, is exactly why Kant’s logic privileges this form of argument: because it captures the fundamental form in which inference can contribute to cognition.

We should note, finally, a connection between this general conception of cognition and the idea that the function of acts of cognition is to contribute to a unified, self-sustaining system of cognition. Inasmuch as the understanding always seeks to find the source of the particular and contingent in the general and necessary, its drive is always toward systematizing our body of cognition by bringing diverse particular cognitions under ever more general principles, and thus representing our total view of the world, to the greatest extent possible, as consistent, nonarbitrary, and noncontingent. But to the extent that the

³⁶ Compare KpV V.26, MN IV.467-469. Note that Kant holds that even the pure principles of the understanding discussed in the Analytic of Principles of the first Critique are not “principles absolutely,” since our cognition of them depends on pure intuition. Absolute principles would be synthetic general judgments which were knowable by pure reason; other synthetic general judgments may be called principles relative to certain cases just insofar as they articulate an explanatorily more fundamental rule that determines how things stand in those cases (cp. A300-301/B356-358). Our understanding is not capable of attaining to knowledge of absolute principles, but nevertheless the drive of our cognition is always toward a more relatively principled understanding of what we know.

understanding accomplishes this, to that extent it represents its body of cognitions as ever more self-determined, for insofar as it finds necessary grounds for apparently contingent combinations of representations, to just that extent it represents these combinations as required of it as such, in virtue of its own laws.³⁷ The drive of the understanding, then, is always toward seeing its postures as ever more fully self-determined – and, by the same token, as having an ever greater share of necessity. The finitude of our cognition makes complete cognitive self-determination an unreachable ideal for us, but it is nevertheless an ideal which constantly regulates our thinking, and seeing this is crucial to seeing how Kant can regard syllogistic logic as a description of the laws of understanding.

³⁷ Thus Kant says that in representing a proposition as apodictic, we “think [it] as determined through the laws of the understanding itself” and thus “incorporate [it] into the understanding” (A76/B101).