

Kant on Negative Magnitudes

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Introduction

Kant's 1763 essay on negative magnitudes, *Attempt to Introduce the Concept of NG into Philosophy*,¹ is one of the least frequently discussed of all his pre-critical writings. When it is referred to, it is usually just to note the four following points that foreshadow Kant's later, Critical philosophy, especially his rejection of dogmatic rationalism and his view that there can be a priori forms of synthesis. The first is his remark, with reference to Euler, that metaphysics should not ignore the data of the mathematical observation of nature.² This anticipates Kant's critical view that metaphysics must interact with the exact sciences.³ The second point is the distinction that Kant makes between logical and real opposition, which is a criticism of rationalist logic, which only includes logical opposition. This anticipates Kant's transcendental distinction between concepts that are logically possible and merely self-consistent, and those that have real possibility and relate to sensible experience. It thus anticipates his

¹ Hereafter "NG."

² See NG, AA 02:168.20. All references to Kant's works are given by volume and page number of the *Akademie* edition,

except for citations of the *Critique of Pure Reason*, which utilize the customary format of 'A' and/or 'B' to refer to the first and/or second edition: Kant, Immanuel. *Gesammelte Schriften*, ed. Koniglich Preußischen Akademie der Wissenschaften. Berlin: Reimer, 1908.

English translations used are:

Ameriks, Karl and Naragon, Steve, ed. and trans. *Lectures on Metaphysics*. New York 1997.

Gregor, Mary, trans and ed., *Practical Philosophy*. Cambridge 1999.

Guyer, Paul and Eric Matthews, ed. and trans. *The Critique of the Power of Judgment*. New York 2000.

Guyer, Paul and Wood, Allen, ed. and trans. *The Critique of Pure Reason* (New York 1997).

Hartman, Robert and Schwarz, Wolfgang, ed, and trans. *Logic*. New York 1988.

Walford, David ed. and trans. *Theoretical Philosophy*. New York 1992.

³ See, for example, Michael Friedman, *Kant and the Exact Sciences*. Cambridge 1992, 19-24. Martin Schönfeld, *The Philosophy of the Young Kant*. Oxford 2000, 221.

distinction between synthetic and analytic judgments.⁴ The third noteworthy point can be found in the following passage, which appears to refer to the Humean problem that woke Kant from his dogmatic slumber.⁵ Kant writes,

I fully understand how a consequence is posited by a ground in accordance with the rule of identity; analysis of the concepts shows that the consequence is contained in the ground...But what I would dearly like to have explained to me, however, is how one thing issues from another thing, though not by means of the law of identity. The second kind of ground, however, I call the real ground, for this relation belongs, presumably to my true concepts, but the manner of the relating can in no wise be judged.⁶

This passage is strikingly similar to Kant's statement in the *Prolegomena* that Hume showed that "it is simply not to be seen how it could be that, because something is, something else must necessarily also be, and therefore how the concept of such a connection could be introduced *a priori*"⁷. And, finally, the fourth point is Kant's mention of "unanalysable concepts of real grounds"⁸, which seems to be an anticipation of the categories of the pure understanding.⁹

In noting these seeds of the critical philosophy in Kant's early essay, commentators nevertheless fail to address the fact that the context in which they take

⁴Ernst Cassirer, *Kant's Life and Thought*. New Haven 1981, 74, Martin Schönfeld, *The Philosophy of the Young Kant*. Oxford 2000, 231.

⁵ See, Daniel Warren, *Kant's Dynamics*, in *Kant and the Sciences*, ed. Eric Watkins. Oxford 2000, 107. Eric Watkins, *Kant and the Metaphysics of Causality*. Cambridge 2005, 166f. Frederick Beiser, "Kant's Intellectual Development: 1746-1781" in Paul Guyer, *The Cambridge Companion to Kant*. Cambridge 1992, 42.

⁶ NG, AA 02: 202. 3-18: "Ich verstehe sehr wohl, wie eine Folge durch einen Grund nach der Regel der Identität gesetzt werde, darum weil sie durch die Zergliederung der Begriffe in ihm enthalten befunden wird . . . Wie aber etwas aus etwas andern, aber nicht nach der Regel der Identität, fließe, das ist etwas, welches ich mir gerne möchte deutlich machen lassen . . . aber der zweiten Art nenne ich den Realgrund, weil diese Beziehung wohl zu meinen wahren Begriffen gehört, aber die Art derselben auf keinerlei Weise kann beurteilt werden."

⁷ Prol, AA 04: 257. 24-27: "es ist aber gar nicht abzusehen, wie darum, weil etwas ist, etwas anderes notwendiger Weise auch sein müsse, und wie sich also der Begriff von einer solchen Verknüpfung a priori einführen lasse."

⁸ NG, AA 02: 204. 7: "unauflöselichen Begriffen der Realgründe."

⁹ See Watkins (2005), 168.

root is very different from Kant's discussion of the possibility of a priori synthesis in the *Critique of Pure Reason* and the *Prolegomena*, which focuses on the a priori intuitions of space and time. The original context is Kant's theory of negative magnitudes, which is hardly mentioned in the *Critique* at all.¹⁰

In what follows, I will argue that instead of understanding Kant's early anticipations of the Critical philosophy as separable from the discussion of negative magnitudes, we should take their origin in Kant's investigation of negative magnitudes to be of central importance, since it can help us to understand aspects of Kant's critical view of cognition where negative magnitudes still play a role. To my knowledge, no commentary on NG has remarked that, for Kant, the importance of negative magnitudes has to do with how they can help us understand our mental activity. Since Kant discusses forces in his essay, it is often taken to be about physical forces and the related concept of natural cause. Consequently, Kant's interest in the mind in NG is overlooked.¹¹ However, a close reading will show that Kant's main interest in negative magnitudes is in what they can reveal to us about mental activity, although, as he admits, what he has yet to say on the matter "is to be regarded as an experiment, which is very imperfect".¹²

I will argue that Kant is interested in negative magnitudes because their ontology is the ontology of causal powers, or forces, whose "magnitude" is measured in terms of degree. The causal power of a substance is that by which it is the ground for some effect or influence on something else.¹³ In NG, Kant is arguing that our mental activity itself can have the ontology of a negative magnitude. Rather than being purely spontaneous

¹⁰ To my knowledge, the one place where negative magnitudes are explicitly mentioned in the first *Critique* is in the Amphiboly of the concepts of reflection. There Kant criticizes Leibniz' "intellectual system of the world" (KrV A270/B326.6) for not being capable of including negative magnitudes and gives as an example of negative magnitudes enjoyment and pain as well as forces. See (A265/B320.30-321.5).

¹¹ See Michael Wolff, *Der Begriff de Widerspruchs*. Königsteins: Hain 1981, 73. See also Robert Schnepf "Metaphysik oder Metaphysikkritik? Das Kausalitätsproblem in Kants Abhandlung Über die Negativen Größen" *Archiv für Geschichte der Philosophie*, 83 Bd., S 130f. Schnepf argues that Kant's aim in this essay is to argue against the causal theories of his rationalist predecessors, Leibniz, Wolff and Crusius and their corresponding views on force. I agree with Schnepf that Kant is arguing against the rationalism of Leibniz, Wolff and Crusius here, including their theory of causality. However, Schnepf fails to discuss any of Kant's references to the soul.

¹² NG, AA 02:189. 11-12: "Ich gebe demnach dasjenige, was Ich noch hierüber zu sagen habe, nur für einen Versuch aus, der sehr unvollkommen ist."

as is the kind of thinking involved in the analysis that produces determinative judgments, the form of mental activity that Kant describes in NG takes effort and has degrees of magnitude. This form of mental activity is what makes possible the *generation* of concepts rather than the determination of objects by means of concepts.

Once we see that in NG, Kant is interested in a kind of mental activity that involves degrees of magnitude, we can see that this essay indeed contains a response to Hume's skepticism about those "obscure ideas" which occur in metaphysics; "*power, force, energy, or necessary connection.*"¹⁴ In the *Treatise*, Hume writes, "some have asserted, that we feel an energy, or power in our own mind; and that having in this manner acquir'd the idea of power, we transfer that quality to matter, where we are not able immediately to discover it." Yet, he claims, "no internal impression has an apparent energy, more than external objects have." According to Hume, we perceive no force, only the constant conjunctions of the actions of the mind.¹⁵ In NG, I believe Kant is responding directly to Hume and arguing that we do in fact have an impression of force, and moreover that the force of which we have an impression—negative magnitudes—is a necessary component of our mental activity.

My discussion of NG in this paper thus indicates a further revision to Eric Watkins' own recent revision of the standard understanding of Kant's argument against Hume. In his book, *Kant and the Metaphysics of Causality*, Watkins argues that, contrary to the standard view of the Second Analogy of the *Critique of Pure Reason*, which is that Kant's aim there is to provide a direct refutation of Hume's skepticism about causal laws, Kant is instead "elaborat(ing) an alternative philosophical account of causality."¹⁶ According to Watkins, for Kant, natural causality is not to be understood in terms of events, as it is for Hume, but in terms of "a substance determining another substance by means of an exercise of causal powers in accordance with its nature."¹⁷ Although I agree with Watkins that Kant understands causality in terms of causal powers, in my view, it is not really Kant who is the one who elaborates an alternative account of causality, but Hume. It was Hume who disputed the general understanding of the day, and argued that causality can only be understood as the constant conjunction of similar types of events and not as being due to a power or force. Kant's view that there are in fact causal powers is thus not so much an alternative to Hume's account, as Watkins argues, as an attempt to prove what he denies. In his early essay on negative

¹³ See Watkins (2005), 13

¹⁴ David Hume, *An Enquiry Concerning Human Understanding*. Hackett 1993, 40.

¹⁵ David Hume, *Treatise of Human Nature*, Oxford 2000, 108.

¹⁶ Watkins (2005), 17.

magnitudes, Kant is arguing that there must be such causal powers, since they play a necessary role in our cognition. According to Kant, our internal impressions do have an “apparent energy.” The perception of this energy, or force, for Kant, is, however, not a cognition, but rather a feeling.

The aims of this paper are several. First, I will explicate Kant’s early view of negative magnitudes. I will then show how this view makes possible a response to Hume’s skepticism about force. I will also argue that negative magnitudes suggests to Kant that there is a kind of cognitive activity that is neither the spontaneity of discursive thought nor the receptivity of the senses. Rather it is an “effort” of the mind, of which we are conscious through a feeling. Finally, by focusing on Kant’s argument in the *Anticipations of Perception*, I will show that Kant’s early views about negative magnitudes are retained in his Critical philosophy.

I. Negative Magnitudes

Kant defines a negative magnitude as follows;

A magnitude is, relative to another magnitude, negative, in so far as it can only be combined with it by means of opposition; in other words, it can only be combined with it so that the one magnitude cancels as much in the other as is equal to itself. Now this, of course, is a reciprocal relation, and magnitudes which are opposed to each other in this way reciprocally cancel an equal amount in each other.¹⁸

By "negative magnitude," Kant does not mean a negative *number*, nor does he mean a certain kind of negative thing, such as darkness, for example. Instead, a negative magnitude is something that can exist in a reciprocal relation with something else, such that when the two are combined, the one cancels in the other an amount equal to the first's own worth. For example, an amount of money (what one has) is considered a negative magnitude when, in relation to another amount (what one owes), it cancels out an amount equal to its own. Kant notes that it is irrelevant which of the amounts is called the negative magnitude, the "active" or the "passive" debt.

Kant's discussion of negative magnitudes focuses on what he calls their relation of "real opposition." A real opposition occurs when "two predicates of a thing are

¹⁷ Ibid., 14.

¹⁸ NG, AA 02:174. 8-11: “Eine Größe ist in Ansehung einer andern negativ, in so fern sie mit ihr nicht anders als durch die Entgegensetzung kann zusammen genommen werden, nämlich so, daß eine in der andern, so viel ihr gleich ist, aufhebt. Dieses ist nun freilich wohl ein Gegenverhältniß, und Größen, die einander so entgegengesetzt sind, heben gegenseitig von einander ein Gleiches auf.”

opposed to each other, but not through the law of contradiction"¹⁹. Unlike a "logical opposition," or contradiction, the existence of which is impossible and "nothing," the consequence of a real opposition is something. Whereas "a body that is both in motion and not in motion" is a contradiction and thus nothing, a body that has motive forces equally moving it in two opposite directions is still something; it just is at rest.

What kind of thing gets to be called a negative magnitude? Negative magnitudes are not the objects themselves, such as the body that is in motion, since what is opposed to this is the absence of a body that is in motion. Instead, negative magnitudes are properties of objects, like the motion of a body, rather than the body itself. These properties are those that include a range of degrees that can be decreased by being in a reciprocal relation with their opposite. Kant's own examples of negative magnitudes cover a variety of such properties. He mentions the motive force of a body in a certain direction,²⁰ the force of attraction (and of repulsion).²¹ Pleasure (and displeasure),²² vice (and virtue).²³ He also mentions the amount of one's fortune (and one's debt).²⁴

To say that a property is a negative magnitude is to attribute to it a causal power. A negative magnitude is not itself an amount, but a capacity to produce an amount, namely, the capacity of something to "cancel as much in the other as is equal to itself." Thus, even units of money can be considered negative magnitudes. As a debt or a credit, an amount of money has the power to cause a change in what is opposed to it.²⁵ Kant writes, "what I mean when I call debts 'negative units of capital' is this: debts are the positive grounds of the diminishment of the units of capital".²⁶

¹⁹ NG, AA 02:171: "zwei Prädicate eines Dinges entgegengesetzt sind, aber nicht durch den Satz des Widerspruchs".

²⁰ NG, AA 02:171. 17.

²¹ NG AA 02:180. 2-3.

²² NG AA 02:180.11.

²³ NG AA 02:182. 30-31.

²⁴ (NG AA 02:172. 30).

²⁵ For a thorough elucidation of "causal powers" in Kant, see Eric Watkins, "Kant's Model of Causality: Causal Powers, Laws and Kant's reply to Hume," *Journal of the History of Philosophy*, v. 42, no. 4 (2004) 449f. Watkins argues that Kant's model of causality can be understood in terms of the notion of ground rather than event.

²⁶ NG, AA 02:174. 34: "Ich werde demnach die Schulden negative Capitalien nennen. Hierunter aber werde ich nicht verstehen daß sie negationen oder bloße Verneinungen von Capitalien wären...sondern daß die Schulden positiv Grunde der Verminderung der Capitalien seien."

As causal powers, negative magnitudes are also intensive magnitudes and are measured in degrees.²⁷ In contrast to extensive magnitudes, which are measured in distinct units that can be added to one another as are whole numbers, intensive magnitudes are measured in degrees that are not separable from each other. In the *Critique of Pure Reason*, Kant writes of intensive magnitudes, "I call that magnitude (*Größe*) which can only be apprehended as a unity (*Einheit*), and in which amount (*Vielheit*) can only be represented through approximation to negation = 0, intensive magnitude."²⁸ Kant's description of intensive magnitudes as what can "only be apprehended as a unity" places them in contrast to extensive magnitudes "in which the representation of the parts makes possible the representation of the whole (and therefore necessarily precedes the latter)."²⁹ An intensive magnitude is measured by its distance from the degree of highest intensity, or the limit, that a particular property can have (its degree of "diffuseness"), and not by the mere counting of units. For Kant, force is measured intensively precisely because the "parts" of a force are not external to one another as are the parts of space. This is why, according to Kant, velocity (*Geschwindigkeit*) is an intensive magnitude.³⁰

II. Negative Magnitudes in Philosophy

What does Kant think is the relevance of such magnitudes for philosophy? As noted above, Kant's discussion of a real ground of the real opposition between negative magnitudes seems to foreshadow the critical view that there are necessary relations between representations that are not based on logical analysis alone. In NG, Kant calls the ground for the connection between two representations in a relation of real

²⁷In what follows, I am in general agreement with Daniel Warren's discussion of negative magnitudes in his *Reality and Impenetrability in Kant's Philosophy of Nature*. New York 2001. Although he does not draw the conclusions that I do, Warren agrees with me that negative magnitudes are intensive magnitudes and that these refer to casual powers. See 2, 34.

²⁸KrV A168/B210.15-22: "Nun nenne ich diejenige Größe, die nur als Einheit apprehendiert wird, und in welcher die Vielheit nur durch Annäherung zur Negation = 0 vorgestellt werden kann, die intensive Größe."

²⁹ KrV A162/B203. 15-17: "in welcher die Vorstellung der Teile die Vorstellung der Teile die Vorstellung des Ganzen möglich macht (und also notwendig vor dieser vorhergeht)".

³⁰ See (MAN AA 04:493.23-494.3).

opposition a “real ground” and says that it is that by means of which “the consequence that is not identical to (a thing) is posited but not according to the rule of identity.” But what exactly is this real ground, by which one thing follows from another, but not by the principle of non-contradiction, but, indeed, by some other principle? In the concluding remarks to NG, Kant writes,

I have reflected on the nature of our cognition with respect to our judgment concerning grounds and consequences, and one day I shall present a detailed account of the fruits of my reflections. One of my conclusions is this: the relation of a real ground to something, which is either posited or cancelled by it, cannot be expressed by a judgment, it can only be expressed by a concept. That concept can probably be reduced by means of analysis to simple concepts of real grounds, albeit in such a fashion that in the end all cognitions of this relation reduce to simple, unanalysable concepts of real grounds, the relation of which to their consequences cannot be rendered distinct at all.³¹

What Kant means when he says that the relation of a real ground to something that is either posited or cancelled by it “cannot be expressed by a judgment (but) only by a concept,” is that such a relation cannot have a truth-value that is derivable from the law of contradiction. At this point in his development, Kant is still a proponent of the rationalist view that all judgments are the result of the analysis of concepts, and thus that they are based on the law of identity. Instead of being expressed in a (analytic) judgment, then, Kant believes that the relation must be expressed by something else—a concept-- which can “probably be reduced...to simple concepts of real grounds.” A “real ground” is thus a “simple concept” of some kind, rather than the law of identity, which is a logical ground.

One can see how this could be taken to be an early formulation of what in the *Critique of Pure Reason* are the categories of the understanding--concepts of the

³¹ NG AA 02: 203.36-204.8: “Ich habe über die Natur unseres Erkenntnisses in Ansehung unserer Urtheile von Gründen und Folgen nachgedacht, und ich werde das Resultat dieser Betrachtungen dereinst ausführlich darlegen. Aus demselben findet sich, daß die Beziehung eines Realgrundes auf etwas, das dadurch gesetzt oder aufgehoben wird, gar nicht durch ein Urtheil sondern bloß durch einen Begriff könne ausgedrückt werden, den man wohl durch Auflösung zu einfacheren Begriffen von Realgründen bringen kann, so doch, daß zuletzt alle unsre Erkenntnisse von dieser Beziehung sich in einfachen und unauflöselichen Begriffen der Realgründe endigen, deren Verhältnis zur Folge gar nicht kann deutlich gemacht werden.”

necessary relations that hold between our representations of objects of experience.³² The categories are concepts of the way representations must be related in order for our experience of the empirical world to be possible. They are concepts of relations that are necessary, but which are not based on the law of contradiction. In the *Critique of Pure Reason*, the categories are the grounds for the synthesis of a spatially and temporally determined manifold. They therefore have objective validity and real possibility since they are the conditions for the possibility of cognition of empirical objects. However, from the variety of examples mentioned in the previous section, such as the state of my fortune and my debt or my feeling of pleasure and pain, it is hard to see how the real grounds of the relation between *these* things can be taken to resemble the categories of the pure understanding. Negative magnitudes are intensive magnitudes, which can exist in a relation of real opposition by which the increase in the degree of one leads to the decrease in the degree of the other. The categories of the pure understanding, on the other hand, are rules for the synthesis of representations in time. I therefore do not think the categories are what Kant has in mind.

In NG, Kant indeed proposes that there is a real ground that can make a necessary synthesis possible. But rather than being a ground for the temporal or spatial synthesis of representations, it is a ground for the increase or decrease of one magnitude with regard to another. What exactly is it that Kant sees in negative magnitudes that makes him think that it is possible for there to be a non-analytic relation between two things that is still a necessary relation?

Just as *a priori* judgments of geometry are, for the Critical Kant, synthetic rather than analytic, due to the nature of space, so, I believe, in NG, are judgments of negative magnitudes also synthetic and *a priori* due to the nature of negative magnitudes. It is necessarily true that if a negative magnitude is in a relation of real opposition to something else, “the one magnitude (will cancel) as much in the other as is equal to itself.” Since this is necessarily true, it is *a priori*. And, since this truth is not based on the analysis of a concept, it is also synthetic. It is not part of the analysis of the concept “cold,” for example, that it will *make* something else (hotter than it) less hot. Instead, the necessity of these relations is based on the nature of negative magnitudes itself. Just as, Kant will later say, we need to add the intuition of space to the concept of parallel lines in order to get the *a priori* judgment that parallel lines do not intersect, so we need to add the “intuition” of negative magnitudes to the concept of cold in order to make the

³² See Watkins’ discussion of this passage, Watkins (2005), 167.

a priori judgment that opposing cold to heat will “cancel as much in the other as is equal in itself.”

I would therefore like to suggest that the idea that Kant is developing in NG is that the real ground of negative magnitudes is a form that makes possible the synthesis of representations a priori, just as do the forms of the intuitions of space and time in his later philosophy.³³ This form of negative magnitudes is what makes it possible that the increase of the degree of magnitude of one thing is the basis for the necessary decrease in the degree of magnitude of another. It is a form by which we can anticipate *a priori* that the degrees of power of a thing will increase or decrease, just as the forms of space and time make possible the ascription of spatial and temporal predicates to a thing.

In fact, just as Kant will later argue that space and time are subjective forms of our own intuition, so, in NG, does Kant consider the form of negative magnitudes to be a form of our own cognition, and not just something that exists in the physical world. What makes negative magnitudes relevant for *philosophy*, therefore, is that the form of negative magnitudes is a form of our own mental activity. Kant writes,

If one considers the grounds which form the foundation of the rule which we have here introduced, the following point will be instantly noticed: in what concerns the *cancellation* of an existing *something*, there can be no difference between the accidents of mental natures and the effects of operative forces in the physical world. These latter effects, namely, are never cancelled except by means of a true opposed motive force (*Bewegkraft*) of *something else*. And an inner accident, a thought of the soul, cannot cease to be without a truly active force (*Kraft*) of the *self-same* thinking subject. The difference here only relates to the different laws governing the two types of being; for the state of matter can only ever be changed by means of an external cause, whereas the state of mind can also be changed by means of an *internal* cause. The necessity of the real opposition, however always remains the same, in spite of the above difference.³⁴

³³ Kant himself admits that his essay is merely suggestive. He writes, “the considerations which I am about to offer only constitute modest beginnings, which is what generally happens when an attempt is made to open up new perspectives.” “Es find diese Betrachtungen nur kleine Anfänge, wie es zu geshen pflegt, wenn man neue Aussichten eröffnen will” (NG AA 2:169.6-10), and “I make no secret of the frailty of my understanding” “ich ous Schwäche meiner Einsicht kein Geheimnis mache” (NG AA 2: 201.30-31).

³⁴NG AA 02:191.29—192.5: “Wenn man die Gründe in Erwägung zieht, auf welchen die hier angeführte Regel beruht, so wird man alsbald inne: daß, was die *Aufhebung* eines existierenden *Etwas* anlangt, unter den Accidenzien der geistigen Naturen desfalls kein Unterschied sein könne von denen Folgen wirksamer

Just as the effects of opposed forces in the physical world cancel out each other out, so is the effect of a thought of the soul, a “state of mind,” cancelled by the effect of another thought. According to Kant, causal powers are real. Against Hume’s skepticism that we cannot have knowledge of such a “power, force or necessary connection,” since we have no impression of this, Kant is arguing that we can. We have an experience of our own “active force of the soul” precisely because it is our *own* active force. It is the inner force of the self-same thinking subject, who both has the thought and cancels it. My awareness that a thought has been cancelled is just the awareness of the inner force that has cancelled it.

Yet, the awareness of an inner force is not a mere “consciousness” of this force. Rather this awareness is the feeling of the effectiveness of this force. Kant begins his discussion of the relevance of negative magnitudes for philosophy by giving the following example of his principle that “every passing away is a negative coming to be.” He writes,

Physical nature everywhere offers examples of this principle. A movement never stops, either completely or in part, unless a motive force (*Bewegkraft*) which is equal to the force, which would have been able to generate the lost movement is combined with it in a relation of opposition. But also our inner experience of the cancellation of representations and desires, which have become real in virtue of the activity of the soul, completely agrees with this. In order to banish and eliminate a sorrowful thought a genuine effort, and commonly a large one is required. And that this is so is something which we experience very distinctly within ourselves. It costs a real effort to eradicate an amusing representation which incites us to laughter, if we wish to concentrate our minds on something serious.³⁵

Kräfte in der körperlichen Welt, nämlich daß sie niemals anders aufgehoben werden als durch eine wahre entgegengesetzte Bewegkraft *eines andern*, und ein inneres Accidens, ein Gedanke der Seele, kann nicht aufhören zu sein, ohne eine wahrhaftig thätige Kraft *eben desselben* denkenden Subjects. Der Unterschied betrifft hier nur die verschiedene Gesetze, welchen diese zweierlei Arten von Wesen untergeordnet sind; indem der Zustand der Materie niemals anders als durch *äußere* Ursache, der eines Geistes aber auch durch eine *innere* Ursache verändert werden kann; die Nothwendigkeit der Realentgegensetzung bleibt indessen bei diesem Unterschiede immer dieselbe.”

³⁵NG AA 02:190. 19-32: “Die körperliche Natur bietet allerwärts Beispiele davon dar. Eine Bewegung hört niemals gänzlich oder zum Theil auf, ohne daß eine Bewegkraft, welche derjenigen gleich ist, die die verlorene Bewegung hätte hervorbringen können, damit in der Entgegensetzung verbunden wird. Allein auch die innere Erfahrung über die Aufhebung der durch die Thätigkeit der Seele wirklich gewordenen

According to Kant, our experience of an inner motive force is the experience of the effort it takes to replace one representation with another. It is noteworthy that the examples that Kant uses are of representations that are particularly affective, a “sorrowful thought,” and “an amusing representation which incites us to laughter.” Here it is not just the representation that is being cancelled, but its affective effect on the mind. Indeed, Kant implies, the stronger the affect, the stronger the force that is required to cancel the representation that gives rise to it. For, Kant our inner experience of the activity of negative magnitudes is thus the feeling of the effort required to diminish the *feeling* associated with another representation and not just the representation itself.

In another example, Kant refers to the feelings of pleasure and displeasure themselves as negative magnitudes. He writes,

displeasure is not merely a lack, but a positive sensation. That it is also something positive, as well as something which is really opposed to pleasure, can be rendered most clearly apparent by the following consideration. Suppose that the news is brought to a Spartan mother that her son has fought heroically for his native country in battle. An agreeable feeling of pleasure takes possession of her soul. She is thereupon told that her son died a glorious death in battle. This news diminishes her pleasure a great deal, and reduces it to a lower degree...³⁶

Here, what is being cancelled is not the content of the representation, but rather its effect on our mental state. We have an impression of force just by virtue of having the feeling that our pleasure is being diminished.

Negative magnitudes are therefore important for philosophy since, according to Kant, they are those forces both in nature as well as in our own mental activity that can produce a necessary effect. The fact that we “distinctly experience” the effectiveness of

Vorstellungen und Begierden stimmt damit sehr wohl zusammen. Man empfindet es in sich selbst sehr deutlich: daß, um einen Gedanken voll Gram bei sich vergehen zu lassen und aufzuheben, wahrhafte und gemeiniglich große Thätigkeit erfordert wird. Es kostet wirkliche Anstrengung eine zum Lachen reizende lustige Vorstellung zu vertilgen, wenn man sein Gemüth zur Ernsthaftigkeit bringen will.”

³⁶ NG AA 02:180. 26-33: “daß die Unlust nicht lediglich ein Mangel sondern eine positive Empfindung sei; daß sie aber sowohl etwas Positives, als auch der Lust real entgegen gesetzt sei, erhellt am deutlichsten auf folgende Art. Man bringt einer spartanischen Mutter die Nachricht, daß ihr Sohn im Treffen für das Vaterland heldenmüthig gefochten habe. Das angenehme Gefühl der Lust bemächtigt sich ihrer Seele. Es wird hinzugefügt, er habe hiebei einen rühmlichen Tod erlitten. Dieses vermindert gar sehr jene Lust und setzt sie auf einen geringem Grad.”

negative magnitudes within ourselves indicates to Kant that such forces, or causal powers, are real.

Here it is possible to suggest a solution to a problem in Watkins' account of causal powers. Watkins argues that in the *Critique of Pure Reason*, causation should be understood as the effect of a causal power. Yet, in the *Critique of Pure Reason*, Kant provides no explicit proof that there actually are such causal powers. Without such a proof, such causal powers are indeed susceptible to Hume's skepticism. Watkins argues, however, that it is implicit in Kant's account that we are aware of causal powers when we engage in the activity of the synthesis of representations.³⁷ Watkins points to passages in the *Critique of Pure Reason* where Kant refers to our awareness of our mental activity³⁸ and takes this to indicate an awareness of a causal power. Yet, as Chignell and Pereboom have pointed out, "to be directly aware of a mental action is not to be directly aware of the irreducible causal power in operation."³⁹ According to Chignell and Pereboom, Kant considered the fundamental causal powers to be noumenal and "deeply concealed."⁴⁰ Chignell and Pereboom thus think that Watkins has not successfully shown how, in Kant's account, causal powers could be intelligible to us. They conclude their article by suggesting that rather than being given to us through apperception, we get the idea of a causal power through reason which gives us the idea of transcendental freedom; "the idea of the power of beginning a state *of itself*—the causality of which does not in turn stand under another cause determining it in time in accordance with the law of nature."⁴¹

Yet, I think that in NG we can find Kant's own argument for how we can have an impression of causal powers. Admittedly, In NG--using language which is in fact similar to that in the first *Critique*--Kant says that the "effort of the soul,"⁴² which operates to cancel representations is an "admirably busy activity concealed within the depths of our minds which goes unnoticed even while it is being exercised."⁴³ However, he then qualifies this by saying that "inner experience cannot *always* inform

³⁷ Watkins (2005), 273.

³⁸ See Watkins (2005), 272-277.

³⁹ Andrew Chignell and Derk Pereboom, "Kant's Theory of Causation and its Eighteenth Century Background" *Philosophical Review*, 119. 4. 2010, 590.

⁴⁰ *Ibid.*, 589, referring to Kant A78/B 34.

⁴¹ *Ibid.*, 591, referring to A533/B561.

⁴² NG AA 02:191. 13-14: "Bestrebung der Seele".

⁴³ NG AA 02:191. 15-20: "Allein welche bewunderungswürdige Geschäftigkeit ist nicht in der Tiefen unseres Geistes verborgen, die wir mitten in der Ausübung nicht bermerken".

us of such opposed activities” (italics are mine).⁴⁴ Those cases in which inner experience *can* inform us of the opposed activities of the casual powers of negative magnitudes are those in which we are inwardly affected. The “effort” required to cancel out an affective thought is itself inseparable from its effect on our feeling. We can therefore be directly aware of our mental efforts since they affect us and are inseparable from this effect—the activity by which we diminish our amusement is just the increase of our seriousness. Thus, in NG, Kant’s view is that we can have access to causal powers through that feeling which is of the effectiveness of their activity.

Causal powers are therefore not made intelligible to us through the mere consciousness that synthetic activity is occurring, as Watkins suggests, but rather through what can be called the affective effect of such powers on our mental state. Where we cannot have theoretical knowledge of such powers, we can nevertheless have a feeling of their activity. Although Watkins is right when he says that we have an immediate awareness of the self’s synthetic activities, he fails to note that this awareness is a feeling—the feeling of the effectiveness of the causal power, what Kant refers to in the first *Critique* as the *affecting* of inner sense.⁴⁵ In fact, Watkins refers to those passages in Kant where Kant himself mentions our being affected by our mental activity (such as the passage cited below) but Watkins fails to remark on Kant’s use of this term. For example, Kant writes,

I do not see how one can find so many difficulties in the fact that inner sense is affected by ourselves. Every act of **attention** can give us an example of this. In such acts the understanding always determines the inner sense...⁴⁶

Watkins takes this passage to show that for Kant focusing one’s attention on an object is different from merely being conscious of it; it is “an act that we ourselves perform and can be aware of performing.”⁴⁷ Although Watkins rightly calls attention a “specific kind of self-awareness,”⁴⁸ he does not explain further what this self-awareness is. I believe the fact that this is an *affective* self-awareness is important and can be taken to indicate that

⁴⁴ NG AA 02: 191. 27: “entgegengesetzte Handlungen...uns gleich nicht immer die innere Erfahrung davon belehren kann”.

⁴⁵ See Watkins (2005), 275.

⁴⁶B156n26-31: Ich sehe nicht, wie man so viel Schwirkeit darin finden könne, daß der innere Sinn von uns selbst affiziert werde. Jefer Actus der Aufmerksamkeit kann uns ien Beispiel davon geben. Der Verstand bestimmt darin jederzeit den inneren Sinn...” Corey W. Dyck argues that “it is through the act of attention that the subject *affects* itself,” “Empirical Consciousness Explained,” *Kantian Review*, v11, 2006, 41.

⁴⁷ Watkins (2005), 276.

⁴⁸ *Ibid.*, 276.

the form of mental activity that involves a causal power not that of determinative thought, but rather that of negative magnitudes.⁴⁹

Chignell and Pereboom's suggestion that transcendental freedom is what indicates to us that there is such thing as a causal power is, however, insightful. For Kant, transcendental freedom is "negative;" it is "the power of beginning a state *of itself*—the causality of which does not in turn stand under another cause determining it in time"⁵⁰. In the *Groundwork of the Metaphysics of Morals*, Kant calls this negative concept of freedom *willkür*, the mere power to choose.⁵¹ The positive conception of freedom, by contrast, is practical reason itself, which is what can determine this choice. As the ontology of the forces of the mind, negative magnitudes can indeed also be understood to also be the ontology of *willkür*, understood as the will whose strength is virtue, which is distinct from the ontology of the legislative *wille*. In fact, Kant even describes virtue as a negative magnitude. He writes, "Virtue = + a is not opposed to negative lack of virtue (moral weakness) = 0 as its logical opposite [...] ; but is opposed to vice = +a as its real opposite [...] for by strength of soul we mean strength of resolution in a human being"⁵². Yet, I disagree with Chignell and Pereboom, when they write that causal powers are intelligible to us as an idea of reason. Rather, when it is active, we are conscious of our power to effect something as an inner affectation, not as an idea. Indeed, with regard to the force of our *willkür*, Kant writes that there are feelings that accompany virtue, which "make its efficacy felt"⁵³.

3. Negative Magnitudes and The Critical Philosophy

From the above, we can see how the existence of negative magnitudes indicated to Kant that, contrary to Hume, we can be conscious of a "power, force or energy," and, contrary to the rationalists, there can be necessary relations between representations that are synthetic and real and not just analytic and logical. Yet, aside from a few isolated passages, negative magnitudes seem to have all but disappeared from Kant's *Critique of Pure Reason* and indeed from the Critical philosophy as a whole. Although I cannot

⁴⁹ In fact Watkins suggests as much when he writes that the synthetic activity that we are aware of in self-consciousness is neither a determinate phenomenon or noumenon. *Ibid.*, 280.

⁵⁰ A533/B561: "das Vermögen, einen Zustand von selbst anzufangenn, deren causalität also nicht nach dem Naturgesetze wiederum unter einer Ursache steht, welche sie der Zeit nach bestimmte".

⁵¹ MS AA 06: 213.14-35.

⁵² MS AA 06: 384. 5-10: "Der Tugend = a ist die negative Untugend (moralische Schwache)= 0 als logisches Gegenteil (contradictorie oppositum), das Laster aber = -a als widerspiel (contrarie s. realiter oppositum) entgegen gesetzt...Den unter Stärke der Seele verstehen wir die Stärke des Vorsatzes eines Menschen".

⁵³ MS AA 06: 406. 22: "ihre Wirksamkeit empfindbar machen".

argue for this here, I think the reason negative magnitudes are not explicitly mentioned in the *Critique of Pure Reason* has to do with the fact that Kant focuses on the extensive spatial and temporal structures of experience rather than on what is intensive in experience. Still, this is not to say that negative magnitudes are completely absent. In this section I will show how Kant's insights in NG are presupposed in his argument for the Anticipations of Perception in the first *Critique*.

The Anticipations of Perception is Kant's most sustained discussion of intensive magnitudes in the *Critique of Pure Reason*. Here, Kant argues that we can know *a priori* that "in all appearances the real, which is an object of the sensation, has an intensive magnitude, i.e. a degree"⁵⁴. This principle, in effect, ascribes a necessary ontology of intensive magnitudes to what we sense in appearances. It states that although we cannot say *a priori* what particular degree of magnitude an object of sensation has, we can know *a priori* that what we sense must have some degree of intensive magnitude. Kant's "proof" of this principle, however, has perplexed many commentators. He writes, "Now from the empirical consciousness to the pure consciousness a gradual alteration is possible, where the real in the former entirely disappears, and a merely formal (*a priori*) consciousness of the manifold in space and time remains; thus there is also possible a synthesis of the generation of the magnitude of a sensation from its beginning, the pure intuition = 0, to any arbitrary magnitude. Now, since sensation in itself is not an objective representation, and in it neither the representation of space and time is to be encountered, it has, to be sure, no extensive magnitude, but yet it... has an intensive magnitude, corresponding to which all objects of perception, insofar as they contain sensation, must be ascribed an intensive magnitude, i.e. a degree of influence on sense."⁵⁵

⁵⁴ KrV B208.3-5: In allen Erscheinungen hat das Reale, *was ein Gegenstand der Empfindung ist*, intensive Größe, d.i. einen Grad."

⁵⁵KrV B208. 1-18: "Nun ist vom empirischen Bewußtsein zum reinen eine stufenartige Veränderung möglich, da das Reale desselben ganz verschwindet, und ein bloß formales Bewußtsein (*a priori*) des Mannigfaltigen im Raum und Zeit übrig bleibt: also auch eine Synthesis der Größenerzeugung einer Empfindung, von ihrem Anfange, der reinen Anschauung = 0, an, bis zu einer beliebigen Größe derselben. Da nun Empfindung an sich gar keine objektive Vorstellung ist, und in ihr weder die Anschauung vom Raum, noch von der Zeit, angetroffen wird, so wird ihr zwar keine extensive, aber doch eine Größe . . . also eine intensive Größe zukommen, welcher korrespondierend allen Objekten der Wahrnehmung, so fern diese Empfindung enthält, intensive Größe, d. i. ein Grad des Einflusses auf den Sinn, beigelegt werden muß."

This is a mysterious passage indeed. On the one hand, Kant seems to be basing what ought to be a transcendental proof that the nature of the real must have an intensive magnitude on a contingent fact about our empirical consciousness of sensation.⁵⁶ On the other hand, when Kant does refer to pure consciousness, he seems to be making a category error. Indeed, what could Kant mean by a “gradual alteration” from empirical to pure consciousness? The distinction in kind between the matter of mental activity (what is empirically given to the mind) and form (what pertains to thought alone) is fundamental to Kant’s entire transcendental idealism. Empirical and pure consciousness, in Kant’s account, should therefore be different in kind, not in degree.⁵⁷

There is, however, a way to understand this passage that could both make sense of the “gradual alteration” from empirical to pure consciousness and also show that Kant does have a transcendental, rather than a psychological, ground in mind as the basis for the ascription of a degree to the real of sensation. If there were a form of mental activity, which is neither thought nor sense, by which the mind could gradually make the transition from what is empirically given to a pure form of thought, and from what is material and particular to what is formal and universal, then this form would indeed be an intensive form that could make possible the ascription of a degree of magnitude to a representation. And indeed, I think that Kant does think that there is such a form of mental activity. This is the activity of reflection, abstraction and comparison on what is empirically given, by which we sift and order various representations to produce an empirical concept.⁵⁸ For Kant, the composite activity of reflection, comparison and abstraction, is precisely that activity by which the mind gradually moves from what is empirically given to a pure, general, concept.⁵⁹ By comparing representations we note the differences. By reflecting, we note the similarities. Abstraction is the activity by which we separate the one from the other by omitting the differences and thus isolate a concept—what the representations have in common. This activity of comparison, reflection, and abstraction both takes place by means of degree and is the source of the degree of magnitude of what results from the comparison—we can have a more or less

⁵⁶ See Hermann Cohen, *Kants Theorie der Erfahrung*. Berlin 1918, 553-554. Cohen thinks that Kant is making a psychological argument for the intensity of a sensation where he should be making a transcendental one for the intensity of the real in sensation. See also Longuenesse’s response to Cohen in *Kant and the Capacity to Judge*. Trans. C. Wolfe. Princeton 1998, 298-323.

⁵⁷ See Paul Guyer, *Kant and the Claims of Knowledge*. Cambridge 1987, 203.

⁵⁸ See Longuenesse, 116.

⁵⁹ See Log AA 09: 94-95.

distinct concept. It is a gradual process by which representations are accumulated and sorted according to degrees of similarity and difference.⁶⁰

We can thus make sense of the gradual alteration from empirical consciousness to pure consciousness that Kant refers to in the Anticipations of Perception by seeing that it is due to a form or our mental activity that is itself intensive; our capacity for reflection, comparison and abstraction. Kant's point is not that we know that the real has an intensive magnitude because we can sense this in empirical consciousness, which itself has varying degrees. That would be an empirical argument and not a transcendental one. Rather, Kant is saying that we possess a pure form of mental activity, which is intensive and which is what make possible the attribution of a degree to what affects us.

Although, in his discussions of reflection, comparison and abstraction in his *Logic*, Kant never says explicitly that this activity is intensive, in NG he does say that attention is a negative magnitude. He writes,

Every abstraction is simply the canceling of certain clear representations; the purpose of the cancellation is normally to ensure that what remains is that much more clearly represented. But everybody knows how much effort is needed to attain this purpose. *Abstraction* can therefore be called *negative attention*. In other words, abstraction can be called a genuine doing and acting, which is opposed to the action by means of which the representation is rendered clear.⁶¹

"Attention" here is the "positive" activity of being conscious of a clear representation. Abstraction is the "negative," real opposite, of attention, since it cancels what should not be the focus of attention. In attention (and abstraction) the mind acts like a casual power in gradually sharpening its focus on a representation.

It is my view that in his Critical philosophy Kant retains his view of the activity attention (and reflection and comparison) as itself being a negative magnitude, and

⁶⁰ In her discussion of Kant's example of a savage who sees a house for the first time and thus does not have the concept by which he could cognize this as a house, Longuenesse writes, "only the application in comparison, that is, the gradually dawning consciousness of a rule of apprehension common to the representation of various objects serving the same purpose, would pick out analogous marks and bring out the concept of a house," *Kant and the Capacity to Judge*, 118. As she puts it, the rule of apprehension (the schemata of empirical concepts) is something of which we "*gradually*" become conscious as a result of the act of comparison, along with reflection and abstraction.

⁶¹NG AA 02: 190.30-36: "Eine jede Abstraction ist nichts anders, als eine Aufhebung gewisser klaren Vorstellungen, welche man gemeiniglich darum anstellt, damit dasjenige, was übrig ist, desto klarer vorgestellt werde. Jedermann weiß aber, wie viel Thätigkeit hiezu erfordert wird, und so kann man die *Abstraction* eine *negative Aufmerksamkeit* nennen, das ist, ein wahrhaftes Tun und Handeln, welches derjenigen Handlung, wodurch die Vorstellung klar wird, entgegengesetzt ist."

indeed as being a form of mental activity distinct from discursive thought. Indeed attention differs from thought, whose determination of an object in judgment does not admit of degree, since it is gradual. Moreover, as we have seen, in the *Critique of Pure Reason*, the activity of attention is described as affective. Our consciousness of this activity is thus a kind of sensitivity rather than a kind of cognition.

We can now address a criticism of the Anticipations of Perception put forth by Guyer. Kant writes that “in the mere sensation in one moment a synthesis of uniform increase from 0 up to the given empirical consciousness can be represented”⁶², Guyer notes, however, that in order for an “increase” to be represented, more than one moment would be necessary, since an “increase” implies that there is a before and an after. In order for Kant to be able to say that the instant in which a sensation occurs can also be a measure of the increase or decrease in intensity of the sensation, individual sensations of a given quality would have to be thought of as “members of a potential series of instances of the same kind of sensation, which are undergoing an increase or decrease of intensity over time.”⁶³ But, Guyer contends, the premise of Kant's argument, which is that “apprehension, merely by means of sensation fills only an instant”⁶⁴, conflicts with the idea that sensations can come in a continuous variation of intensities. This is because what is apprehended in an instant does not necessarily bring with it any indication of another temporal determination. An intensity of light could indicate a stage in a series of degrees of brightness or it could not. If it indicates a stage of a *series* of degrees, however, then it is being measured in an extensive form of time. Guyer is not criticizing Kant for claiming that we can know the particular degree of a sensation a priori. Kant does not claim this. Rather Guyer questions whether we can know a priori that sensations have any degree of magnitude at all, that is, that sensations are the sort of things that come in degrees.

In effect, Guyer's complaint is that Kant does not prove that the real in sensation is a negative magnitude. As we have seen, in NG, Kant argues that to be a negative magnitude *just is* to be a member of a potential series. So, if Kant can show that the real in sensation is a negative magnitude, then he will have a response to Guyer that we can indeed know, just from the apprehension of a sensation in one instant, that it is an

⁶²KvR A176/B218.1-2: “an der bloßen Empfindung in einem Moment eine Synthesis der gleichförmigen Steigerung von 0 bis zu dem gegebenen empirischen Bewußtsein vorstellen.”

⁶³ Guyer, *Kant and the Claims of Knowledge*, 203.

⁶⁴KvR A167/B209. 17: “Die Apprehension, bloß vermittelt der Empfindung, erfüllet nur einen Augenblick.”

intensive, rather than an extensive magnitude. And, in fact, Kant does have an argument that the real in sensation is a negative magnitude. This is because the real that is the object of sensation is a causal power that affects us. It is “that by which... one can be conscious that the subject is affected”⁶⁵. If we agree with Kant that the real in sensation is what affects us, then, as a causal power, it must be measured in terms of degree, even if the sensation is only for one instant. Kant is thus not arguing that we attribute intensity to the real in sensation *by means* of our empirical consciousness of a sensible affection. But rather that we say that it must be an intensive magnitude because it is the kind of thing that affects us. Similarly, Kant would say that an object of the senses must have a spatial determination, simply by virtue of being an object of sense. And, just as the subjective spatial form of intuition is a condition of the experience of an external object, so, I believe, is a subjective form of intensive magnitudes a condition for the consciousness of sensible affectation.

Kant’s argument in the Anticipations of Perception thus seems to presuppose his early discussion of negative magnitudes. As we have seen, in NM, Kant thought that our mental activity itself could have the form of a negative, or intensive, magnitude. Here, Kant seems to be relying on that view in order to show how it is possible for the mind to attribute a degree to what affects it, or, in Hume’s language, to make possible the “apparent energy” of a representation. We are able to be conscious of negative magnitudes and hence of being affected by something because our own mental activity in reflection, comparison and abstraction itself has the form of an intensive magnitude.

Unlike discursive thought by which we make an objective judgment, reflection, abstraction and comparison are rather that effort by which we pull *inward*. In the *Critique of Pure Reason*, Kant describes reflection as “the state of mind in which we first prepare ourselves to find out the subjective condition under which we can arrive at concepts”⁶⁶. Reflection is not so much directed outward towards an object, but inward, to “preparing” the state of the subject. It is thus likely that the “simple concepts of real grounds” of negative magnitudes that Kant mentions in NG are what become the concepts of reflection that Kant discusses in the Amphiboly chapter of the first *Critique*. Indeed, these concepts are themselves of opposites; “of identity and difference, of agreement and opposition, of the intrinsic and the extrinsic, and of the determinable and

⁶⁵ KrV B207.23: Dar Reale der Empfindung, also bloß subjective Vorstellung, von der man sich nur bewußt weden kann, daß das Subjekt affiziert sei.”

⁶⁶ KrV A260/B316.6-8: “der Zustand des Gemüts, in welchem wir uns zuerst dazu anschicken, um die subjectiven Bedingungen ausfindig zu machen, unter denen wir zu begriffen gelangen können”.

determination (matter and form)”⁶⁷. Rather than being concepts for the temporal determination of an object, the simple concepts of the real grounds of negative magnitudes are the concepts for the evaluation of something with regard to the degree to which it meets a standard. This inward mental effort by which we reflect, abstract, compare representations can be described as a “virtue” of cognition, comparable to the strength of the will. As Kant’s example in NM indicates, the effort by which we eliminate what is extraneous to a concept is the same as that by which we eradicate an amusing representation and concentrate on something serious.

Conclusion

In this paper, I hope to have shown that in his early essay on negative magnitudes, Kant was developing a view of a form of mental activity that is itself a causal power and involves effort. Against Hume’s skepticism about such causal powers, Kant argues that we have evidence that there are such powers, because we can feel the effects of their activity as a mental affectation. I believe that what Kant has in mind by these mental powers are reflection, abstraction and comparison, the activities by which we make what is empirically given into a concept.

Although Kant does not refer to negative magnitudes in his Critical philosophy, this does not mean that he disavows his earlier essay. In fact, in the *Critique of Pure Reason* Kant seems to assume that we have a cognitive capacity that has the form of a power and by which we make an effort to focus on what is empirically given to us and to come up with a concept for it; a kind of virtuous activity of cognition, by which we affect our inner sense. This is evident in his discussion of intensive magnitudes in the *Anticipations of Perception*, where he argues that we can know, or “anticipate” a priori that every sensation must have a degree.

As I stated earlier, I think that the role of negative magnitudes in cognition is not prominent in the first *Critique* because there the focus is on the spatio-temporal structure of experience. Yet nothing in the first *Critique* is incompatible with an ontology of negative magnitudes or causal powers. I suggest that a reading of Kant’s discussion of reflective judgment and its principle of purposiveness in the third *Critique*, in light of Kant’s essay on negative magnitudes could reveal that in that work, Kant indeed has in

⁶⁷ KrV A261/B317.18-21: “der Einerlieheit und verscheidenheit, der Einstimmung und des Widerstreits, des Innern und des Äußern, endlich des Bestimmbaren und der Bestimmung (Materie und Form)”.

mind a distinctive ontology of negative magnitudes, which are what can provide “the mediating concept between the concepts of nature and the concept of freedom”⁶⁸.

⁶⁸ KU AA 05 196.20-22: “den Übergang vom Gebiete des Naturbegriffs zu dem Freiheitsbegriffs möglich”. See Robert Hanna’s discussion of Watkin’s book. Hanna refers to Kant’s discussion of teleology in the *Critique of Judgment* as evidence that Kant had a non mechanistic view of causality and that the “conscious mind belongs to an embodied rational agent operating under non-mechanistic teleological and moral laws.” Robert Hanna, “Kant Causation and Freedom,” *Canadian Journal of Philosophy*, 36.2 (2006): 302. For help on this paper, I would like to thank Robert Guay, Lewis Trelawny-Cassity, the participants in the Eastern Division Meeting of the North American Kant Society in 2007, the participants in the Modern Philosophy Workshop at Princeton University, especially Dan Garber and Desmond Hogan, and the two anonymous referees at *Kant-Studien*.