



geist

vanderbilt
undergraduate
philosophy
journal

volume 2

april 2010

Geist: Undergraduate journal of philosophy at Vanderbilt University

Issue no. 2, spring 2010

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Advised and Supported by Vanderbilt University Department of Philosophy,
Faculty Support directed by Professor Jeffrey Tlumak.

Funding for *Geist* provided by the Department of Philosophy and the Commons Project.

Published by *Print Services Publishing Company*
(865) 577-6144 office

Online copies available at <http://www.vanderbiltgeist.com>

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From the Editor-in-Chief

Two years! Good God, they sure grow up fast—soon, I expect, the *Geist* will be throwing its boutonnière at the editors' faces and tearfully accusing us of kidnapping it at birth. It's true, though, for good or bad—these clumsy pages are the flesh of our flesh and all we can do is love them and apologize to the babysitter... For this sentiment I enthusiastically thank the *Geist's* dedicated staff of editors and readers, everyone in the Vanderbilt department of philosophy, our funders, everyone involved in the printing process, and editor emeritus Kevin Duong.

Undergraduate philosophy papers can be painful to read. The average student essay tends to be logically smooth or thematically original—never both. It rings with half-formed ideas and hasty assessments, sustained by the iron certainty that its thesis is *correct pretty much*.

These faults have their reasons: philosophy is peculiarly and deceptively difficult. In a culture whose principle is efficiency at all cost, even (especially) within the education system, it requires students to read slowly, repeatedly, voluminously, to study languages, and meanwhile to find time for simply thinking. Students approach the discipline as a circle with no break for entrance—we must know its generalities to have any grasp of its particulars, but only through the particulars do we access the general. The undergraduate philosophy student has likely read much, but rapidly and recently. She is ill-prepared for disciplined thinking, and grinding contradictions meet her at every turn.

These papers, however, represent the overcoming of contradictions, the small exception who have summoned the combined discipline and creativity—whose difficult coexistence philosophy demands—to outwit their years. Those of you who don't follow the steamy stagecraft of the undergraduate philosophy journal *ethos* may not know that the *Geist* is one of the few publications of its kind. Perhaps a dozen philosophy journals exist in America specifically for undergraduates. "Yes," you might reply, "but no one cares what undergraduates think." Generally this is true and good—college students are beer-bathed chunks of coral for whom time doesn't extend beyond the next Dave Matthews Band concert. But these students are different. Not only do these students feel personally called by the questions whose obscurity has determined the course of history, but they have also had the dedication to craft themselves into mature intellects.

These essays represent more than admirable attempts, more than promising starts, more even than the future faces of the discipline. They are genuine contributions to an ageless conversation. They should inspire serious consideration and close reading. And, of course, enjoyment.

-Daniel Cunningham

Editorial Board

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Daniel studies the history of philosophy, especially nineteenth and twentieth century Continental. He is interested in Frankfurt School critical theory, phenomenology, Marxism, psychoanalysis, post-structuralism, and feminism.

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Jamie is a Mechanical Engineering student, focusing in robotics and control systems. His primary focus in philosophy is based in Straussian politics, and he enjoys studying analytic subjects. Upon graduation, he will be commissioned as an officer and will serve in the U.S. Navy.

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Wade is majoring in English and minoring in philosophy. He is hoping to graduate with departmental honors for his senior thesis on the theme of death in the work of Jacques Derrida. Wade's philosophical interests include 20th century continental philosophy, gender and queer studies, literary theory, post-structuralism, and transhumanism. Next fall Wade will be attending New York University to begin work on his master's in English literature.

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Alexa specializes in gender/queer theory and includes Judith Butler, Michel Foucault, bell hooks, Anne Fausto-Sterling, and Iris Marion Young among her closest friends. She also enjoys critical race theory and the New German Cinema. After graduation, she plans to do policy work with nonprofit organizations.

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Finding Specific Causal Laws in Kant's *Critique of Pure Reason*

Anna Sims, Northwestern University

Kant's response to Humean skepticism regarding causality is one of the most famous and written-about subjects of the *Critique of Pure Reason*. Hume raises three challenges, and Kant answers two of these explicitly, but his response concerning *specific* causal laws is unclear. Determining Kant's response to Hume's skepticism regarding specific causal laws should be particularly important to us, because, in our everyday lives, we want to make specific causal claims; e.g., if x happens then y must follow. Because of the perplexing nature of specific causal laws as principles only found through experience, it becomes difficult to understand how to establish their "lawfulness," or rather, their universality and necessity. Kant neither establishes the lawfulness of specific causal laws nor offers a means of verifying that our specific causal judgments are correct; however, Kant does not provide us with nothing because on his view, we are still justified in making causal judgments. Moreover, empirical scientific investigation can yield confidence, although not certainty, in such judgments.

In order to make this argument, I must discuss the following points. In the first half of this paper, I will outline Hume's skepticism regarding a) the origin of the concept of cause, b) specific causal laws, and c) the general causal principle; i.e., the idea that every object and/or event is causally determined. I will also discuss Kant's responses to a and c. The second half of this paper will examine Kant's response to b, Humean skepticism regarding specific causal laws. I will determine, on Kant's view, how we find specific causal laws, whether they are truly universal or necessary, and whether they can be verified. Doing so will show what we can know and what we cannot know regarding specific causal laws.

PART I: KANT'S RESPONSE TO HUMEAN SKEPTICISM

I. Hume on Specific Causal Laws and the Origin of the Concept of Causality

In section IV of the *Enquiry to Human Understanding*, Hume presents his doubts about causal reasoning; then in section V, he offers his solution, and, in section VII, he offers his account of the origin of the idea of causal or necessary connection. In section IV, Hume argues that we cannot prove that causal relationships govern objects. First, he argues that we cannot discover causes by mere observation because when we observe something that we take to be a causal connection between two events contiguous in time, we do not *observe* any connection, much less any necessity of that connection. As Hume writes, "All events seem entirely loose and separate. One event follows another; but we never can observe any tie between them" (Hume, *Enquiry* VII.ii.1). Despite our conviction that two events are causally connected, the actual connection never presents itself to us in experience.

Second, we cannot discover a cause by mere *a priori* reasoning. Just by knowing what qualities an object has, we cannot analytically derive any of its causal relations to any other thing or event. Hume observes, “Adam, though his rational faculties be supposed, at the very first, entirely perfect, could not have inferred from the fluidity and transparency of water that it would suffocate him, or from the light and warmth of fire that it would consume him” (IV.i.6). Another way of stating the same problem is that we cannot find the effects objects and events have on our experiential apprehension within their supposed causes. For example, the motion of a second billiard ball is a distinct event from the motion of the first; thus, “[i]n a word, then, every effect is a distinct event from its cause. It could not, therefore be discovered in the cause, and the first invention or conception of it, *a priori*, must be entirely arbitrary” (I.iv.5).

Because we cannot observe the causal connection between two things or events, discover a cause through *a priori* reasoning, or find the effect in the cause, Hume argues, we have no way of proving that a connection between the two events exists, much less that this connection is necessary or causal. In section V, Hume then explains why we are convinced things are causally related despite the fact that we have no hard evidence that they are. Our belief is based solely on custom or habit. The “repetition of any particular act or operation produces a propensity to renew the same act or operation[. W]ithout being impelled by any reasoning or process of the understanding, we always say, that this propensity is the effect of Custom” (V.i.5). We become accustomed to seeing certain events, A’s, followed by other certain events, B’s, because we repeatedly observe them to happen in succession. As a result, when we see an A, we expect a B to follow. This expectation, based on habits of observation, underlies our concept of necessity, of a causal connection between events. Our idea of a necessary connection between events is merely a projection of our subjective anticipation. The idea of cause or necessary connection originates from within us, not from the objects themselves, and, thus, we have no reason to think that our subjective conceptions actually apply to objects and events external to us.

II. Hume and the General Causal Principle

Thus far, Hume has only discussed specific causal judgments and not the general causal principle; i.e., the claim that all objects and events are causally determined. In the *Treatise of Human Nature*, Hume argues that we cannot prove the existence of the general causal principle, which he glosses as: “whatever begins to exist [. . .] must have a cause of existence” (I.iii.3.1). This definition makes it seem as if Hume is discussing only what causes things to come into existence, not what affects them when they are already existing, but he adds an addendum to his definition later that states that we are unable “to demonstrate the necessity of a cause to every new existence, *or new modification of existence*” (I.iii.3.3; italics added for emphasis).

The first reason Hume gives for his claim that we cannot know the causal principle to be true of objects is that it is not self-evident, which means that it is not governed by relations of “*resemblance, proportions in quantity and number, degrees of any quality, and contrariety*” (I.iii.3.3). Hume postulates that “all certainty arises” from these

relations, which rely on the comparison of ideas alone. As long as the ideas remain the same, the relations remain unaltered as well. For instance, we know that “no object can be completely hot and cold at the same time” because we understand that hotness and coldness are contrary to one another. We also can understand that “the color orange is closer to red than a blue” because we comprehend that resemblance relationships describe similarities between objects. The idea that “every new existence or modification of existence must have a cause,” however, does not imply any of these four relations. It does not tell us a thing about any sort of resemblance between an object or event and its beginning or their proportions to one another. The general causal principle (i.e. the beginning or modification of existence and events with agency), therefore, is not self-evident.

If the general causal principle for Hume is not self-evident, it is also not “demonstratively certain”:

We can never demonstrate the necessity of the cause to every new existence, or new modification of existence, without shewing at the same time the impossibility there is, that anything can ever begin to exist without some productive principle; and where the latter proposition cannot be proved, we must despair of ever being able to prove the former. (I.iii.3.3)

Here, Hume argues that we cannot prove that the beginning of every existence must have a cause, unless we also prove that it would be impossible to have a beginning of an existence without a cause. For Hume, we can separate the idea of causes from beginnings of existence because they are distinct events; therefore, it is not contradictory to deny that some beginnings might not have causes. As a result, we cannot prove that the beginning of an existence must have a cause. He thus denies that we can prove that the general causal principle is true of objects on *a priori* grounds.

III. Kant's Response to Hume

In his analysis of causality, Hume focuses on three aspects: first, the origin of the concept of cause, second, our ability to know that specific relationships are causal, and, third, the conception of a general causal principle. Kant answers the first and third worries, which I will demonstrate in this section.

Kant's response to Hume's first point of skepticism can be found in the Metaphysical Deduction. Kant argues that there are twelve fundamental concepts called categories, which are *a priori*; we do not derive them from experience but rather apply them to it. Their origin lies in our faculty of understanding and arises out of the logical forms of judgment. It is from these logical forms that we derive concepts concerning the nature of objects. In *Kant's Theory of Knowledge*, George Dickler explains Kant's method clearly:

A judgment or proposition has both a content and a logical form; for example, the judgment that all horses are herbivorous has the concept “horse” and “herbivorous” as its content—it can sensibly be said to “contain” these concepts.

But this proposition also has something that remains when we abstract from that content, namely, its logical form, which we can express as “All A’s are B’s” (Dicker 52).

Kant deduces the categories from the logical forms of judgment inherent to the human mind. Causality is one of these categories that originate in the faculty of understanding and are based on the logical form of hypothetical judgment. Like Hume, Kant thinks cause is a necessary connection that is not analytic; i.e., evident from the definition of cause—or effect, for that matter. Against Hume, however, Kant holds that we do, by virtue of our innate mental faculty of understanding, possess an object-oriented concept of cause: a concept that, at least in principle, aims to say something about objects instead of a concept that ultimately refers to a subjective feeling.

In the Second Analogy, Kant attempts to show that causality is an objectively valid, *a priori* concept, derived from the logical forms of hypothetical judgment. He argues that causality applies to objects and events within experience, and it does so both universally and necessarily. According to Kant, because we can distinguish between the subjective progression of our ideas and the objective time-order in which things in nature successively grow and decline, we must deem the natural world as necessarily determined, indeed as governed by the law of cause and effect. Kant shows that in order for us even to have experience of the phenomenal world, specifically in order for us to have experience of events in an objective time-order, causal connection must be true of all objects. Now let us examine Kant’s specific argument in more detail.

We constantly apprehend a succession of appearances of various substances whether they appear to be changing or remaining constant. According to Kant, my imagination “however, can combine the two states in question in two different ways, so that either one or the other precedes in time” (Kant B233). What Kant means is that the order in which we apprehend appearances tells us nothing about the way in which they actually proceed in the objective time-order of because our imagination can reorder them arbitrarily. Kant, therefore, agrees with Hume when he states that we cannot derive causal connections from our subjective sense-perceptions or the temporal successions we observe.

Moreover, Kant argues that “time cannot be perceived in itself” (B233). Because time is a form of intuition, we perceive everything as unfolding *in time* but not time itself. Since we cannot perceive time itself, “through mere perception the objective relation of the appearances that are succeeding one another remains undetermined” (B234). If I could perceive time itself, according to Kant, I would be able to determine the time order of my sense-perceptions by “matching” my perceptions to the time order or to time itself or be able to claim that things are positioned in time where we perceive them to be positioned in absolute time.

I do, however, distinguish between subjective succession (how things appear to me), and objective succession (how I judge things to proceed in nature). In order to experience an objective succession, according to Kant, “it is thereby necessarily determined which of them must be placed before and which after rather than vice-versa” (B234). We judge

that B follows A necessarily “according to a rule” (A189): the rule of cause and effect. The rule of causality, therefore, allows us to judge those representations to be necessarily connected in the objective time-order. Without this rule of causality, we would not have the experience of the objective time-order at all. Rather we would only have a subjective “play of representations, relating to no object” (B239) because it is only by employing the idea of necessary connection through judgment that we are able to make a distinction between subjective and objective succession.

Kant uses his famous house and boat examples to clarify this line of argument (A191-4/B236-9). I can look at the front of a house before we look at the back and vice-versa. My perception of the various parts of the house, therefore, is successive. So too is my perception of a boat’s changing position from upstream to downstream. The succession of my apprehensions in both cases, therefore, tells me nothing about the objective succession of what I experienced; i.e. it does not differentiate *events* or changes, such as the position of the boat, from *states of affairs*, such as the various parts of the house.

What is different between the two cases, however, is that in the case of the boat, given that we know that it is upstream, we judge that it will float downstream necessarily changing position. In doing so, we are employing the rule of necessary succession, which Kant argues, “necessitates us to observe this order of the perceptions rather than another, indeed that it is really this necessitation that first makes possible the representation of a succession in the object” (B242). To experience the house as a whole entity, however, I must only judge that the house’s parts are coexistent and integrated within the same substance.¹ I do not have to employ the concept of causality in order to apprehend the house. Similarly, I do not have to employ the concept of cause to experience the boat as an object but rather only judge its parts to coexist in the same substance as well. To experience the event of the boat moving, objectively, upstream to downstream, however, I would, in fact, have to judge it in accord with the concept of causality. Through this example, Kant shows us that it is through employing the rule of necessary succession that we are able to differentiate between events and states of affairs, or in other words, between objective successions and merely subjective successions.

We have discussed the ways in which Kant answers the first and third of Hume’s skeptical inquiries. He addresses Hume’s first concern in *Metaphysical Deduction* and then the third in the *Second Analogy*. Let us grant that these two responses are satisfactory even though questions can be, and have been, raised about them. We can still ask, however, whether Kant responds to Hume’s central questions. Can we justifiably make specific causal judgments? And once having formulated them, can we verify them by determining whether they are in fact correct?²

PART II: SPECIFIC CAUSAL LAWS

Kant’s answer to Hume’s skeptical point regarding our ability to make justified, specific causal judgments should be particularly important to us because, in our everyday lives, we want to make such *specific* causal claims. When the water boils on the stove, we want to say that the heat caused the water to boil rather than merely state that the water was

causally determined in general. We want to go beyond what the general causal principle offers us. It is unclear at first, I shall suggest, how far Kant's arguments go in explaining how I can make specific causal claims and if they can be justified. In particular, I will raise questions concerning how to find specific causal laws and what role the general causal principle plays in finding them. Furthermore, I will inquire whether Kant is able not only to establish the universality and necessity of specific causal laws but also to provide a means to verify my specific causal judgments as correct. I shall discuss these various issues in the following sections.³

I. The Problem of Finding and Establishing the "Lawfulness" of Specific Causal Laws and Verifying Specific Causal Judgments

The general causal principle and specific causal laws are different in that the general causal principle states that all events and objects are causally determined, whereas a specific causal law states that if *x* happens then *y* must follow necessarily. Importantly, specific causal laws offer specific causes that the general causal principle by itself cannot. Kant's example of the changing physical states of wax shows us the difference between the two types of law:

[I]f wax that was previously firm melts, I can cognize *a priori* that something must have preceded (e.g., the warmth of the sun) on which this has followed in accordance with a constant law, though without experience, to be sure, I could determinately cognize neither the cause from the effect nor the effect from the cause *a priori* and without instruction from experience. (A766/B794)

This passage demonstrates the precise difference between the general causal principle and specific causal laws and also suggests why Kant may have difficulty explaining our knowledge of the latter. Just by knowing that the candle is melting, I can judge *a priori* that the change must have been instigated by some cause without knowing what it is. The only way, however, I can find the specific cause of the melting is through *a posteriori* experience. I could never know that heat specifically caused the candle to melt without relying on experience. Specific causal laws, therefore, have both an *a priori* and an *a posteriori* nature. They must be universally valid like an *a priori* law, in order truly to be laws, but unlike an *a priori* law, the content of the specific law can be based only on experience.

Knowing that the wax was causally determined, thus, is not sufficient to arrive at any specific causal law regarding the wax melting. And we may well ask how it is that we can formulate a specific causal law in any justifiable manner. Kant claims that causal laws are "particular determinations of yet higher laws, the highest of which (under which all others stand) come from the understanding itself *a priori*" (A126). But, the general causal principle does not give us a way of "determining" specific causal laws. Nothing about it tells us how to find specific causal laws; therefore, how can I use the general causal principle to generate a specific causal law? Moreover, even if I could find a specific causal law, how, once I found it, could I verify or check that it was the correct causal law? While the general causal principle does not deny that A *could* cause B, nothing

about the general causal principle necessitates that A actually does cause B. Why could C not be the cause of B? The general causal principle tells me neither how I specified A as the cause of B, nor why I should choose cause C over cause A. Consequently, the general causal principle does not provide a means either to find or to choose between specific causal laws.

The same point can be formulated in a somewhat different way, concerning causal regularities. In nature, we observe empirical regularities such as the sun rising and setting. Kant assumes but does not prove that such regularities exist. He does not question this assumption because empirical regularities provide our only experience of constancy in form, substance, and action. Kant notes, “If cinnabar were now red, now black, now light, now heavy [. . .], then my empirical imagination would never even get the opportunity to think of heavy cinnabar on the occasion of the representation of the color red” (A100-A101). But such regularities are not sufficient to establish the specific causal laws we desire. We do not want to say that every time the sun rises and sets, the succession is governed by a new causal law or some other cause in general, but rather we want to establish a single specific law that governs the succession of the sun rising and setting every time it occurs. Even if I proposed a specific causal law governing a causal regularity, how would I be able to confirm whether the law applied to every instance of the regularity? Neither the causal principle nor the empirical regularity itself offers me a way of verifying that every time the sun rises, the same causal law governs the event. Given that—because we are assuming that Kant has established the objective validity of general causal principle—there must be at least some causal laws that govern the empirical regularities we experience, how can we formulate and verify these specific causal laws?

II. The Answer to the Problem of Finding and Establishing the “Lawfulness” of Specific Causal Laws and Verifying our Causal Judgments

In everyday life, the way we formulate specific causes and causal laws is through the method of induction. As previously explained in the discussion of Hume, induction is the process by which we experience events that we frequently observe and infer from the repetition of their outcomes that they must be causally determined. Kant, like Hume, however, does not believe that induction is sufficient for establishing specific causal laws: “[e]xperience never gives its judgments true or strict but only assumed and comparative universality (through induction)” (B3). As a result, generating an empirical law through induction and asserting its “empirical universality is therefore only an arbitrary increase in validity from that which holds in most cases to that which holds in all” (B4). We are unjustified in claiming that empirical laws are necessary or hold universally from induction alone. The reason is that we cannot leap from claiming that a pattern holds in a few instances to the claim that it holds in all instances, and we cannot observe an infinite amount of instances even to establish its universal application. Induction alone, thus, provides me only with how to propose specific causal laws. It does not, however, provide a means of generating the universality needed to establish a plausible causal claim. We still do not know either what role the general causal principle

plays in the inductive process or how to establish the universality of specific, hypothesized causal laws.

The role that Kant believes the general causal principle plays in the process of finding specific causal laws can be understood only by examining its various functions, which he begins to discuss in the Introduction to the Analogies. Causality is a principle of the understanding, which means that it has both a regulative and constitutive function depending on the context. The axiom of intuition states that “all intuitions are extensive quantities” (B202). The axiom is constitutive because it tells us that any and every object has extension; thus, *in relation to the axiom of intuition*, the causal principle “will not be valid of the objects (of the appearances) constitutively but merely regulatively” (A180). The causal principle, therefore, is regulative *compared* to the axiom of intuition. The general causal principle tells us that every event and object is causally determined. As a result, the knowledge that every event x must have some cause y urges us to search for y , the missing piece of information. Consequently, the general causal principle has a regulative function because it orders our search for the missing y .

The causal principle is also constitutive, here not by comparison to the axiom of intuition but in contrast to the principles of reason. In the Appendix to the Transcendental Dialectic, Kant asserts that the principles of reason (the idea of god, the soul, and the unity of nature) have “indispensable necessary regulative use” (A644/B672). These principles guide empirical investigation because “we question nature according to these ideas” (A645/B673). These ideas cannot be realized by the understanding since they are beyond possible experience, which means that their value is merely subjective because they do not posit knowledge but rather regulate and limit the way we search for knowledge. Kant argues that these principles order our concepts by “directing the understanding to a certain goal” (A644/B672), but they do not tell us what constitutes objects. The principles of understanding, including the causal principle, however, do tell us how objects are constituted. Reason, however, seeks to systematize this knowledge about objects obtained by the understanding and, thus, regulate it.

In this context, the causal principle also has another regulative function, which is not explicitly discussed by Kant but is implied within the Appendix. While the causal principle is constitutive in contrast to the principles of reason, because it plays a part in the general system that guides empirical investigation, it should be considered regulative as well. The general causal principle, in so far as it states that every event x has some cause y , urges us to find the unknown y . If we pool all of the particular instances in which we search for specific causes of objects and events, we find that the general causal principle challenges us to find specific causal laws in a more global sense.

I will advance that in order to find specific causal laws, one must employ not only the regulative and constitutive understandings of the general causal principle but also the regulative principles of reason. I will specifically be concerned with the idea of reason of nature as a whole because it is what guides our empirical investigation into nature. The “sub-principles,” which are subsumed under the principle of the unity of nature, are the “principles of homogeneity, specification, and continuity of forms” (A657-A658). Alone,

the general causal principle does not give us these concepts, since they belong to reason and not to understanding, but we must draw on them in order to find any specific causal law. First, the general causal principle does not “lead me to a higher standpoint” (A659/B687) or direct me to subsume objects and laws “under higher genera” (A657/B685). Rather, the concept of homogeneity does. If I want to produce a specific causal law that governs many things, such as the law of gravity, I employ the principle of homogeneity in order to reach a certain level of generality. Second, the causal principle, by definition, does not incline us to search for “various determinations” of causal laws. Rather, specification compels us to look for laws that govern fewer things but that provide more information about them. If I am looking to formulate a law about a specific subset of atomic particles that applies only to them and to no others, I must use the principle of specificity in order to narrow down and to limit the content of the law. Last, continuity arises “by uniting the first two, according as one has completed the systematic connection in the idea by ascending to higher genera as well as descending to lower species” (A657-A658). These concepts of reason, though, do not tell us anything about what constitutes an object because they are *only* standards of comparison. Given what we know, these three principles compel us to look in a certain “direction” toward either greater specificity or greater homogeneity. They do not provide the content of the actual law itself. While the general causal principle does not give us the actual cause of an event, it does provide a certain extent of the content because its constitutive nature tells us that every event is, in fact, causally determined.

Paul Guyer, however, discusses how it seems possible to interpret the *Critique of Pure Reason* as implying that employing the idea of systematic unity is not necessary in order to find specific causal laws. To clarify, systematic unity is “presupposed absolutely as a unity of nature” (A693/B721), under which the principles of homogeneity, specificity, and continuity are subsumed. According to this view, the categories of understanding alone unaided by the idea of systematic unity seem to “furnish both a guarantee that we can discover empirical laws applying to any empirical intuitions and all the *method* that we need to discover these laws” (Guyer “Empirical Law” 224). The reason appears to be that not only does the regulative nature of the general causal principle tell us to search for specific causal laws but also we can merely subsume the specific causal law under the category of causality once we think to have found it. What follows from this view is that the general causal principle is, in fact, sufficient for finding specific causal laws and that “reason’s idea of systematicity is necessary only to motivate the understanding and to assist it in reaching coherent results in occasional cases of its failure” (Guyer, *Claims of Taste*, 37). According to the interpretation, however, it would not be necessary to assume the idea of the systematic unity of nature in order actually to *find* specific causal laws.

If we were only to employ the category of causality, however, in finding specific causal laws, we would have a difficult time establishing that the causal connections we think to be the same are actually governed by the same causal law. In the Appendix, Kant discusses how the idea of systematic unity, particularly as manifested in the transcendental “logical law of genera” (A654/B682), demands that we encounter *kinds of things* in our experience. As a result, reason’s idea of genera gives us motive to believe that similar causal events should be classified under the same causal law because they are

the same kinds of events. As previously discussed, the causal principle alone does not give us any real reason why or how to subsume a particular causal regularity under one specific causal law; therefore, based on the category of causality alone, we have no particular method for determining why or how we should aim to find common laws. As a result, we, therefore, must employ the idea of the systematic unity of nature in finding specific causal laws if we want to have a reason for why and how to establish that the causal connections we perceive to be the same are actually governed by the same causal law.

Having discussed how the general causal principle and the idea of the systematic unity of nature, from which follow the principles of reason, help us find specific causal laws, we can now understand how they assist in the process of induction. If we see a hundred rainbows follow after a hundred rain showers, then I would be inclined by the principle of homogeneity and the regulative function of the general causal principle to claim that “rain causes rainbows.” Moreover, given the knowledge that “rain causes rainbows,” I would, after seeing that fifty double rainbows only occurred after fifty rain showers of a specific temperature, then be led by the principle of specificity to generate a more specific causal law regarding double rainbows and rain temperature.

As previously discussed, however, we know that induction by itself does not provide us with the universality needed to establish the lawfulness of specific causal laws. Even with the assistance of the general causal principle and the regulative principles of reason, we cannot establish their lawfulness because these principles are regulative and not constitutive. While the general causal principle does tell us that objects are causally determined, this fact alone does not establish that a particular proposed causal law is, in fact, a causal law or a specification of the causal principle; thus, it does not tell us that a proposed law is actually a law. Because the principles of reason are only regulative, they cannot tell us that a law is universal because to do so would be to claim something constitutive about a phenomenological event or object.

Furthermore, the regulative principles do not guarantee either that we will find the laws we are looking for or that the causal claims we make are correct. First, these regulative principles tell us what to look for (more or less homogeneity, specificity, or continuity), but what we are looking for might not be there. For instance, guided by the principle of specification, a scientist, given his knowledge of the general laws regarding the movement of sound waves, might use a variety of techniques to try to find more specific laws regarding particular sounds in precise circumstances but fail at finding them. Moreover, while we might be guided in our investigation into nature by these regulative principles, the claims we make about objects and events guided by these principles might not be correct. A law we might think governs an event or object might not be the correct law because these principles do not tell us anything about the object itself or what laws govern it. For example, guided by the principle of homogeneity, one could judge that “xenoids” are the smallest atomic particles, constituting all of matter, but in reality the smallest are “partoids.” Nothing necessitates that our judgments are incorrect, but the possibility exists that they are.

The general causal principle and the principles of reason cannot establish the universality of specific causal laws, guarantee we will find them, or ensure that our causal judgments are correct. Moreover, we cannot verify them through experimentation either. Without witnessing every single case in which a proposed causal law might hold, we cannot establish that the law is universal and, thus, verify it. Even if someone observed every single instance that supported a causal law he proposed in his lifetime, the instances from the time before or after he discovered the law would not be taken into account. It is, therefore, impossible to verify our specific causal judgments in so far as it is unfeasible to establish that specific laws hold universally and throughout all time.

III. Implications of Kant's Agreement with Hume over Inability to Establish the "Lawfulness" of Causal Judgments or to Verify Them

While someone perhaps might be disappointed that Kant provides no means by which to establish the unequivocal lawfulness of specific causal laws or to verify them, I do not believe his conclusion is entirely inadequate. While Hume affirms our right to make causal judgments because they are useful for us to negotiate life, he does not think that we are justified in thinking that these claims reflect necessary relationships between objects. As I showed in the first section, Hume asserts that we have no reason to think that any relationship in nature is actually a causal one because we cannot observe causes or derive causal relations *a priori*. Against Hume, Kant, however, argues that we are justified in thinking that our causal claims really do reflect necessity in objects (even though our causal claims might not be correct) because, on his view, the general causal principle itself necessitates that everything is causally determined; furthermore, its regulatory nature urges us to find the specific causes of the events we encounter. Unlike Hume, Kant claims we must employ the principle in order to have objective experience at all. Hume was unable to draw this conclusion justifying causal judgments because he assumed that he was justified in discussing *events as such* and did not question the nature of event-perception itself; whereas, Kant shows that in order to experience events themselves, we must necessarily employ the principle of necessary succession.

In fact, even though we cannot prove the universality of specific causal laws or verify our specific causal judgments, Kant has provided us with an account for why empirical investigation can provide more confidence in our causal judgments than induction alone. Before we can discuss why the scientific method can accomplish more than induction, though, we must discuss the nature of the scientific method itself as proposed by Kant. Kant states in the Preface to the second edition:

When Galileo rolled balls of a weight chosen by himself down an inclined plane, or when Torricelli made the air bear a weight that he had previously thought to be equal to that of a known column of water, or when in a later time Stahl changed metals into calx and then changed the latter back into metal by first removing something and then putting it back again, a light dawned on all those who study nature. They comprehended that reason has insight only into what it itself produces *according to its own design*; that it must take the lead with principles for its judgments according to constant laws and compel nature to answer its

questions, rather than letting nature guide its movements by keeping reason, as it were, in leading strings; *for otherwise accidental observations, made according to no previously designed plan, can never connect up into a necessary law*, which is yet what reason seeks and requires. Reason, in order to be taught by nature, must approach nature with its principles in one hand, according to which alone the agreement among appearances can count as laws, and, in the other hand, the experiments thought out in accordance with these principles—yet in order to be instructed by nature not like a pupil, who has recited to him whatever the teacher wants to say, but like an appointed judge who compels witnesses to answer the questions he puts to them. Thus even physics owes the advantageous revolution in its way of thinking to the inspiration that what reason would not be able to know of itself and has to learn from nature, it has to seek in the latter (though not merely ascribe to it) *in accordance with what reason itself puts into nature*. This is how natural science was first brought to the secure course of a science after groping for so many centuries. (Bxii-xiv; italics added for emphasis)

In this passage, Kant describes the scientist as formulating hypotheses based upon “reason’s own determining.” Using reason, scientists *design* hypothetical causal models that have the ability to *predict* what might happen before it actually does. Thus, when the scientist sets out to discover how nature actually proceeds and if it matches the hypothetical model, he is not merely learning from experience through induction. Rather he is proceeding in accord with rationally proposed laws concerning what would happen if these laws were actually laws of nature. He determines if his empirical observations are “in conformity with these principles.” We cannot verify any law completely because, as previously discussed, universality requires that it apply to every instance of an event, and we cannot observe an infinite amount of cases. We can, however, assume the law is true until we find a single counter-instance in which case the law will be falsified because the law is clearly not universal if it does not apply to *all* cases.

The method of scientific investigation proposed by Kant is better than induction alone, which can be demonstrated using the following example. A sailboat is moving downstream, and I want to know what is causing it to do so. First, I will only use induction to examine this situation. I see this sailboat a hundred different days, and on the days I do not see it move very much, it is not windy outside, and on the days I do see it move a lot, it is very windy; therefore, I conclude that the wind causes the sailboat to move faster or slower depending on its strength.

Now let us compare the sturdiness of this conclusion to one yielded from a well-designed experiment. Given the knowledge gathered from everyday induction, I think I have reason to believe that wind causes the boat to move. I then devise a hypothetical law using reason that states that the stronger the wind blows, the faster the boat will move. This hypothetical law predicts that the weaker the wind, the less the boat will move, and the stronger the wind, the faster the boat will move. I then go observe the boat and test if, in fact, the boat does move faster as the wind blows harder and vice versa by measuring the wind speed as well as measuring the boat’s speed.

The latter scientific method is better than pure induction alone because induction only abstracts from experience; thus, the natural law it yields makes the problematic inference from a *finite* set of cases observed to an *infinite* set of instances. The scientific method solves this issue because reason rather than experience generates a hypothetical law with predictive power that, if true, would apply to every instance of the event or object it governs. The proposed law, in fact, is assumed to apply to every object it proposes to govern until we find a counter-example in which the law should apply but does not. It is important to note that everyday induction might be the grounds for thinking that there might be a causal connection between two events or objects. I am inclined to design an experiment and generate a hypothesis because I have observed the experiential connection previously on repeated occasions; however, my rational construction of a scientific experiment to gather data and test my hypothetical law transforms the process of induction. I am no longer inferring universality from random particulars because the law itself is derived from reason rather than from experience alone. Furthermore, my approach to the experiment itself is in accordance with the rationally proposed law because I am seeking evidence to support or falsify it. The observation is not merely accidental. Thus, the scientific method yields more confidence that specific causal laws are, in fact, laws than induction alone.

IV. Specific Causal Laws as Necessary Conditions of Experience?

Thus, it appears that Kant has given us a complete account of how to find specific causal laws, answered whether we can establish the universality and necessity of specific causal laws, and, furthermore, explained whether we can verify our specific causal judgments. If, however, we look at this problem again, we might find it to be somewhat different, and more serious, than we had previously thought. In his proof of the objective validity of the causal principle, Kant claims that if I see a ship driven downstream, “[m]y perception of its position downstream follows the perception of its position upstream, and it is impossible that in the apprehension of its appearance the ship should be perceived downstream and afterwards upstream” (B237). In order to have this experience of the ship going downstream, Kant argues, I must have employed the general causal principle in that I must have presupposed that the ship was downstream after being upstream according to a the rule of necessary succession. The general causal principle, however, is not sufficient for determining *where* specific events and objects go within the objective time-order because it only tells us that objects and events in general *are* causally determined.

It appears that in order to place events and objects in their correct positions within the objective time-order, I would need to apply specific causal laws because the task of actually psychically ordering our event- and sense-perceptions appears to be left to specific causal laws. They can give us actual information we need to use, in order to establish a determinate, objective time-order, such as “the melting of wax necessarily follows its exposure to heat” rather than “the melting of the wax is causally determined.” Given this difference, we have exercised not just the causal principle (as Kant suggests) but also specific causal laws regarding the oars, the wind, and the water’s currents to

situate the one before the other in the objective time-order. Guyer describes this problem as follows:

[I]t is only if we are in possession of causal laws which dictate that in the relevant circumstances—that is, not in general, but in the particular circumstances of wind, tide, setting of the sails, and so forth, which are assumed to obtain—the ship could only sail downstream that we actually have sufficient evidence to interpret our representations of it to mean it is sailing downstream. (*Claims of Knowledge* 252)

Kant's proof of the utility and function of the general causal principle, therefore, seems to presuppose that we already employ specific causal laws. Since the causal principle cannot provide the means by which to determine the specific placement of events within the objective time order, its usefulness is dependent on the simultaneous employment of specific causal laws.

Thus, it appears that we cannot employ the general causal principle without employing specific causal laws. Does this supposition render the general causal principle alone empty and meaningless? Furthermore, does it elevate the specific causal laws to the status of the general causal principle as primary conditions of experience?

We can answer this question easily by restating what has been previously discussed concerning the regulative use of reason, its relationship to the concept of causality, and our inability to verify specific causal laws. First, as argued above, on Kant's view, we are able to prove the objective validity of the general causal principle but are unable to verify our specific causal judgments. Therefore, the general causal principle is meaningful because unlike specific causal laws, it can tell us something that is true of all events and objects, and that we know *a priori*. Second, the general causal principle has the regulative function of compelling us not only in specific instances to seek out specific causes of events and objects in nature but also more generally to seek specific causal laws. This regulative function is invaluable because it compels us actually to propose specific causal laws. These two responses answer, however, only the question of why the general causal principle is not an insignificant tool for us. They do not explain why specific causal laws are not elevated to the status of the general causal principle as conditions of experience, the question to which I turn now.

V. Solution to the Problem of the Specific Causal Laws as Necessary Conditions of Experience

The fact that we must employ specific causal laws to order our experience of events in an objective time-order leads Guyer to believe that specific causal laws should be elevated to the status of conditions of experience along with the general causal principle. This conclusion is not, however, necessary. As Henry Allison explains,

[W]e are obviously able to recognize many instances of objective succession without being able to subsume that succession under a causal law. For example, is

it really the case that there can be no “objective experience” of water freezing apart from a knowledge of the causal condition of this change? Surely human beings have experienced (and continue to experience) countless tokens of this event type without knowledge of its conditions, that is, without being able to subsume the event under the appropriate causal law. (256-257)

This point is very important because it shows us that in fact we do not employ specific causal laws every time we employ the general causal principle. Guyer seems to think that we can have an objective experience only if we possess the correct specific causal laws. If Guyer is correct, then it would place a very high demand on us to know all the causal laws governing every objective experience we have. This cannot be the case, however, because we can, in fact, have experience of the ship’s going downstream without employing specific causal laws. The fact that many times we judge something to be objectively successive without knowing the specific causal relationship shows that we can use the general causal principle in a more *general* way. I may judge the sun to rise and set in objective succession without knowing the specific causal laws that govern this succession. After having this objective experience, I might propose a claim that the earth’s rotation is the cause of this succession. This hypothesis, however, is not necessary to have the objective experience itself of the sun’s rising and setting successively, which means that specific causal laws are not necessary conditions of experience. Without specific causal laws, it is difficult at first to see how we are able to order events and objects within the objective time-order because the general causal principle does not give us the means to establish their objective positions in time. To experience the ship’s movement, objectively, from the position upstream to the position downstream, however, I do not have to subsume the sequence under any specific causal law. Instead, I can simply judge that the latter event is taken to be necessarily determined by the earlier one “according to a rule” (Kant A189); i.e., a rule of necessary succession. As a result, in order to have an objective experience of an object changing from state A to state B, I judge only that the latter state necessarily follows upon the former state. Contrary to what Guyer claims, in this process, I have not employed any specific causal laws in order to have an objective experience of an event as constituted by an object’s changing states. Specific causal laws are not necessarily needed to place objects or events within the objective time-order because judging that two states follow upon each other necessarily in an object is sufficient for establishing their positions within the objective time order.

VI. Conclusions

Kant has not provided us with either a means to prove that specific causal laws are universal or necessary or a way of verifying our specific causal judgments. Through scientific experimentation, however, aided by the general causal principle and the regulative principles of reason, we can generate hypothetical specific causal laws that we can assume to be universally valid until proven otherwise. This method provides us with more confidence that the specific causal laws we propose are actually “lawful” because it avoids the fallacy of induction, which infers the universal applicability of a specific causal law from a few particular instances in which the law appears to hold. Furthermore, while at first it might appear that specific causal laws should be elevated to the level of

necessary conditions of experience along with the general causal principle, it becomes clear upon further analysis that we can dismiss this troublesome claim. Kant himself, therefore, provides a meaningful account of how to find specific causal laws in the *Critique of Pure Reason*.

Unanswered questions do remain, though. We can only make claims about objects and their appearances through judgment; therefore, what type of judgment do we actually use to determine specific causal laws? Since we do not know the universal under which to subsume the particular causal laws we find, are the judgments we make in regards to specific causal laws different from those judgments made about particulars, whose subsuming universal we *do* know? Given that we have wrung the *Critique of Pure Reason* dry of its knowledge of specific causal laws, we must look now to the *Critique of Judgment* “to bring human reason to full satisfaction in that which has always, but until now vainly, occupied its lust for knowledge” (A855/B883).

NOTES

1. The First Analogy discusses how substance, insofar as it is appearance, is permanent. Kant argues that the reason is that if we perceive an object of appearance as changing, I must judge that something in the appearance remains constant, or I would not identify the appearance as the same appearance throughout time. This thing that persists is substance (A182-A189).

2 When reading commentary on the Second Analogy, many come across the idea of “irreversibility” frequently. Kant states, “My perception of [the boat’s] position downstream follows the perception of its position upstream, and it is impossible that in the apprehension of this appearance the ship should first be perceived downstream and afterwards upstream” (A192/B238). Because of the language Kant uses here, some scholars such as P. F. Strawson take this to mean that Kant is, in fact, claiming that the subjective order of events is rendered objective by means of the fact that it is irreversible (Strawson 137). This interpretation, they claim, is problematic essentially because we know that the imagination can reverse our subjective perceptions. This fallacy, however, is not one that Kant actually makes but rather is the result of misinterpretation. The correct way in which to interpret the idea of irreversibility of an event is not that it is a criterion for establishing a time-order as objective but rather that it helps us to verify after-the-fact that the time-order is actually objective because we cannot reverse the order in which we perceived the change of states that comprises an event.

3 Scholars such as Henry Allison and Rachel Zuckert address Kant’s views of specific causal laws in regards to the First Introduction to the *Critique of Judgment* where Kant explains that we must take specific causal laws to be necessary in an *a priori* sense even though we might not be able to determine *a priori* what their particular form of necessity might be (Allison 80-92; Zuckert 90-94). I, however, would like to examine only the content of the *Critique of Pure Reason* in order to see how far this text alone can take us in answering these questions.

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Brain Steroids: Ethical Concerns Regarding Cosmetic Neurology and Psychopharmacology

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Consider the following examples:

You are an undergraduate student aspiring to go to medical school. You have been studying for the MCAT for the last 3 months of summer, grinding for eight hours per day. The test day finally comes, and you do well and score 30 out of 45. Your friend, meanwhile, has been enjoying his summer—going to the pool, to the beach, and hardly studying. Four weeks before the exam, however, he started taking a new pill, with no known side effects, that improved his attention and short term memory. His big day came and he scored a 33.

You have discovered that your spouse has just been diagnosed with a brain tumor. Surgery is very risky with minimal chances of survival. Two doctors in the area are willing to perform the surgery. Your friend from college is one of the surgeons. He tells you that he has been taking the same pills throughout medical school and even takes them now during surgeries—they improve his memory, concentration and focus, and reduce the natural tremor of the hands (effect proven through research trials). The other doctor that is willing to do the surgery is “normal” and refuses to take such a drug due to his desire to be “natural.” Which surgeon do you pick?

Most people have a different emotional response to the same person of each scenario. Many would view the friend in example one as “cheating” or taking the “easy way out” without putting in effort; they would be against the friend using the enhancement pill because it is “unfair.” In the second scenario, however, most people would side with that same “cheater” and would effectively choose the friend surgeon to operate since he improves the chances of the spouse’s survival. What is the difference between the two situations?

These examples raise a variety of difficult ethical questions in relation to the emerging field of psychopharmacology. As Walter Gannon writes in *Defining Right and Wrong in Brain Science*, “the oldest and most difficult of these questions is how to weigh the potential benefits of psychotropic drugs against the risks (233). Since the brain is the most complex and least understood organ in the body, “there may be unforeseen adverse effects of altering neurons and neural systems” (233). Many “psychotropic drugs can have both positive and negative effects on the brain and mind” (233). Although the “general aim of psychopharmacological intervention in the brain is to restore dysfunctional systems responsible for psychiatric or neurological disorders,” many techniques are being used to enhance already normal brain function (233). Currently, “a number of pharmaceutical and nutritional supplement companies are interested in selling drugs that...allow individuals to go without sleep for longer periods of time than they

otherwise could or herbal substances that allegedly improve memory” (Caplan, 272). Scientists realize that “a drug capable of helping an Alzheimer’s patient retain memory function might also provide some enhancement to those who simply have poor memory skills and that the market possibilities for selling a drug such as a memory enhancer are huge” (Caplan, 272). Many students, for example, “are keenly interested in any drug that might improve their ability on tests or in musical, dramatic, or athletic performances by allowing for increased short-term memory, greater attention span, or reduced anxiety” (Caplan, 273).

Should society have rules against psychopharmacological enhancement, particularly in academia? If so, on what should the rules be based? I will argue that there should be no major restrictions against enhancement itself, although drugs that are blatantly harmful (e.g., death or serious injury) should be prohibited as with therapeutic drugs. In Part One, I will provide arguments in favor of psychopharmacological enhancement. In Part Two, I will describe and refute arguments against such enhancement. Finally, in Part Three, I provide some conclusions and final thoughts about psychopharmacological enhancement and brain science in general.

I. Arguments for the Use of Psychopharmacological Enhancement

Psychopharmacology has always had great potential. As Martha Farah states in *Emerging Ethical Issues in Neuroscience*, “the enhancement potential of some psychiatric treatments is, in itself, nothing new” (20). In reality, pharmacological enhancement has begun and “is arguably being practiced now in several psychological domains: enhancement of mood, cognition, and vegetative functions, including sleep, appetite, and sex (20). Of special interest are the manipulations that “alter cognitive abilities, including attention and memory” (22). Attention includes “active use of working memory, executive function, and other forms of cognitive control” (Farah & Wolpe, 50). It also includes sustained effort and resistance to distraction and is “primarily modulated by dopamine and norepinephrine” (Farah, 22). In addition to providing a therapeutic effect for children with ADHD, stimulants such as Adderall and Ritalin may induce cognitive changes in normal individuals: they may enhance “vigilance, response time, and higher cognitive functions, such as novel problem solving and planning”—an effect many healthy individuals have discovered and are utilizing. (Farah, 22). In some school districts “the proportion of boys taking [Ritalin even] exceeds the most generous estimates of ADHD prevalence” (Farah & Wolpe, 50). Meanwhile, current advances in neuroscience are paving the way for a variety of new therapeutic techniques to fight dementia or Alzheimer’s disease. Although they are developed to treat memory-related disorders, “many of them will be put to use—and will be efficacious—in people who are not ill,” proving to be of special interest to normal people (Ackerman, 77). One drug specifically developed to treat narcolepsy, for example, can actually “prolong alert wakefulness for days” (Farah, 23). Recognizing the “desire of most people for quicker, sharper, and more reliable memories,” many researchers are “explicitly pursuing drugs or pharmacological agents that might improve our ‘normal’ capacity to remember, that might enhance the cognitive performance of both underachievers...and overachievers,

and that might prevent, halt, or reverse age-related memory decline” (President’s Council on Bioethics, 237-8).

So what is the problem if college students use Adderall to study for the MCAT? They are, in effect, improving their cognitive functions. Such drugs can be beneficial for a person’s individual well-being. He/she will become more attentive with greater memory functions; “memory enhancement could benefit individuals by enabling them to access a broader base of factual and conceptual information, as well as to process this information more effectively in decision making and other cognitive tasks” (Glannon, 265). This may help him/her to be more capable, to reach specific goals in life, and to overall live a happy and successful life.

Psychopharmacology may also be seen as advantageous for the well-being of the community and for the public good. Students and individuals may become better, more attentive citizens, engineers, doctors, and lawyers; society as a whole may benefit. Doctors who are more attentive and alert may save more lives; scientists who can stay awake longer may have more breakthroughs. Humanity is always trying to move forward and improve, and this is certainly one way of improving humanity, the quality of life, and the standard of living.

There is also the issue of autonomy and individual right. It would appear to be an infringement on personal freedom to restrict access to safe enhancements (if they are too risky, however, it may be interpreted as beneficence). If a free individual decides to tamper with his/her own brain, it should be generally allowed. After all, that brain is the property of that person. If a person wants to and is allowed to tamper with and augment breast size, why can’t a person be allowed to augment his/her brain?

II. Arguments against the Use of Psychopharmacological Enhancement and Refutations

Despite all the aforementioned benefits of psychopharmacology, there still seems to be “something wrong” with it. As Farah writes, “most of us would love to go through life cheerful and svelte, focusing like a laser beam at work and enjoying rapturous sex each night” (24). Yet most people “also feel uneasy about the idea of achieving these things through drugs” (24). What can this gut feeling be attributed to?

The first potential problem that springs up is the “possibility of serious side effects for the individual, including long-term or delayed effects that might evade current FDA safeguards” (Farah, 24). Even more risky is the “off-label use” or the use of drugs for “purposes for which [they] were not originally designed and for which they did not initially receive FDA approval” (Gannon, 233). If allowed, will psychopharmacology be detrimental to the well-being of the individual? After all, these neuroscience-based enhancements intervene “in a far more complex system,” the brain, than other enhancements for the body (Farah & Wolpe, 52). As a result, we are “at greater risk of unanticipated problems when we tinker” (Farah & Wolpe, 52). A young, ambitious pre-medical student may get into Harvard Medical School and attain a prestigious job thanks to enhancement. He may also get a chance to save many lives and benefit society.

However, this early success may unfortunately be followed by a “middle-age of premature memory loss and cognitive decline” (Farah, 22). If the enhancement drugs are taken at too early an age, they may have some detrimental effects: “empirically, prodigious memory is linked to difficulties with thinking and problem solving, and computationally, boosting the durability of individual memories decreases the ability to generalize” (23). Would “endowing learners with super-memory interfere with their ability to understand what they have learned and relate it to other knowledge” (Farah & Wolpe, 52)? It appears that “normal forgetting rates may even “be *optimal* for information retrieval” (Farah, 25). In other words, if you remember too much or if you have too much clutter stored, you might have difficulty retrieving specific information. That is part of the reason why interest in memory enhancement has thus far just “been confined to the middle-aged and elderly, whose memory ability undergoes gradual decline in the absence of dementia,” even when healthy (Farah 23; Farah & Wolpe, 50). Although “few consider memory enhancement for the young to be a goal,” it is still important to consider the possible ethical implications. Drugs aimed at enhancing attention, however, can be aimed at children or young adults.

Despite all the recent advances, still very little is known about the complex brain and even less is known regarding which limitations “are there for good reason” (Farah, 22). From an evolutionary standpoint, there might be “hidden costs” to enhancement; since we “understand little about the design constraints that were being satisfied in the process of creating a modern human brain,” we do not know “which ‘limitations’ are there purposefully” (Farah, 24). Walter Glannon echoes this idea and states that “the limits we have in our capacity to remember only so many facts or events may be part of a natural design that is critical for our survival” (266). Sometimes forgetfulness is beneficial and allows a human being to cope with stressful or traumatic experiences (in addition to the aforementioned effect of improving ability to retrieve information, generalize, and problem solve in kids). If a person lived and intensely remembered all the bad that has happened, he/she would be constantly tormented.

The brain remains “the most complex organ we possess”; no other system “has so many roles and consists of so many interoperating parts” (Leshner, 76). This “interconnectedness of its parts and the multitasking nature of [the brain’s] individual structures means that any intervention, however small or precise we try to make it, is unlikely to have a single consequence” (Leshner, 76). Cognitive functioning, for example, is part of an “interconnected system in the mind” that involves emotional processing so “trying to enhance cognitive processing could impair emotional processing,” making an individual indifferent and unable to experience life’s pleasures (Glannon, 268). Altering the brain may have several other effects in other areas, some that we cannot even imagine today.

None of these potential risks to the individual, however, warrant complete restriction on the use of pharmacological enhancement, although it is true that long-term consequences have not been fully investigated. It is possible that the long-term effects will not be known for a long time since clinical trials are very slow and expensive—is it worth waiting to find out the possible effects (if any)? This involves potentially great cost-

benefit tradeoffs. Furthermore, “a concern with long-term or hidden side effects is not unique to enhancement but applies to therapeutic treatments as well” (Farah, 24). That implies that psychopharmacological treatments for dementia, Alzheimer’s, or narcolepsy would all have to be outlawed. In reality, “drug safety testing does not routinely address long-term use, and relatively little evidence is available on long-term use by healthy subjects” (Farah & Wolpe, 52). It is important to note, however, that “although safety is a concern with all medications and procedures,” our “tolerance for risk is smallest when the treatment is purely elective” or is for enhancement purposes (Farah et al., 294). Different people will also be willing to take different degrees of risk to achieve the enhancement they desire.

Short-term consequences, on the other hand, are being studied and it is possible to counteract and prevent them through the use of other drugs. Psychopharmacology has always been considered for enhancement but hardly implemented solely for the reason of safety. The enhancement aspect has remained the same but what has changed is the side effect and risk aspect of the treatments: “with our growing understanding of neurotransmission at a molecular level, it has been possible to design more selective drugs with better side-effect profiles” (Farah, 20). Prozac belongs to a class of drugs named “SSRI” in which the first letter stands for “selective” (Farah & Wolpe, 47). Farah states that “adjuvant therapy with other drugs is increasingly used to counteract the remaining side effects” (20). The result of both new and adjuvant drugs is the same: “increasingly selective alteration of our mental states and abilities through neurochemical intervention, with correspondingly less downside to their use by anyone, sick or well” (Farah & Wolpe, 48). It is important to keep in mind that even “normal” drugs against illnesses or disorders have side effects; anti-depressants may even increase the risk of suicidality in young adults or children yet these drugs are not restricted (Leon, 1787). Similarly, psychopharmacologically-enhancing drugs should not be prohibited. However, people do need to be educated and informed about the possible side effects so that they can make informed risk-benefit analyses, decide which risks are “acceptable in view of a drug’s benefits,” and determine whether to take the drugs or not (Farah et al., 295). Of course, more research is necessary to determine all the possible risks. Contrary to popular belief, however, Farah and Wolpe state that so far, medications and stimulants “have good safety records, and their long-term effects may even be positive” (52).

Paul M. Matthews states in *Transforming Drug Development Through Brain Imaging* that novel testing techniques in the future, including brain imaging, may speed up the long, tedious, and expensive process that entails “develop[ing] a compound, test[ing] it in the laboratory and then in clinical trials, and finally obtain[ing] approval for it as a new drug” (153). A faster process may result in more drugs being more thoroughly tested and may, in effect, reduce the negative side-effects, making more drugs safer and more efficient. However, as Henry T. Greely states in *Knowing Sin: Making Sure Good Science Doesn’t Go Bad*, we cannot make “*primum non nocere*, ‘first do no harm,’ a binding obligation” since too often harm will occur” and inevitably does (93). Nonetheless, “doing no harm can be an inspiration” and researchers and physicians still need to “think about the ethical, social and legal consequences of [their] work” so that

enhancement medicine, for example, does not become riddled with negative side effects, whether they be physiological, social, or ethical in nature.

The third main argument against psychopharmacological enhancement in academia stems from potential harm to society if use becomes widespread. There are worries that these enhancements or drugs will not be fairly distributed or may create more separation between the classes. As Donald Kennedy states in *Neuroscience and Neuroethics*, “perhaps it is our belief that the playing field should be level—we worry about the students who can’t access the drug” (59). It is “likely that the wealthy and privileged will have the choice of self-enhancement and the less privileged will not” (Farah, 25). Ritalin use by normal healthy people, for example, is highest among college students, an overwhelmingly middle-class and privileged segment of the population” (Farah et al., 295). There will be “cost barriers to legal neurocognitive enhancement and possibly social barriers as well for certain groups” (295). Others in opposition to neurological enhancement are concerned that allowing such enhancements to be undertaken will result in higher levels of normalcy that will put others—those who choose not to enhance or those who cannot choose to enhance, including the poor—at a disadvantage. This, in effect, would be a form of indirect coercion. “Employers will recognize the benefits of a more attentive and less forgetful workforce” while “teachers will find enhanced pupils more receptive to learning” (Farah et al., 295). Merely competing against “enhanced coworkers or students exerts an incentive to use neurocognitive enhancement,” whether it be to keep a job or stay in school (Farah et al., 295). As Chatterjee points out in *The Promise and Predicament of Cosmetic Neurology*, some people might be coerced “to make use of every possible advantage, including enhancements, just to stay in place” (307).

If these are seen as potential harms that justify prohibition, then many other activities that are normally accepted should be restricted also. As Farah states, “our society is already full of such inequities” and unequal access itself “is generally not grounds for prohibiting neurocognitive enhancement, any more than it is grounds for prohibiting other types of enhancement, such as private tutoring or cosmetic surgery, that are enjoyed mainly by the wealthy” (Farah, 25; Farah et al., 296). Kennedy echoes this response by asking “what about the kids who can’t afford a preparatory course for taking a standardized test?” (59). MCAT classes are certainly not evenly distributed at a price of almost \$2,000, yet they are still allowed. What differentiates MCAT classes from a pill if “both raise the same questions about distributive justice” (Kennedy, 59)? Both seek to enhance cognitive functions and both can be successful; “the brain makes no distinction between psychopharmacology and experience” since both are able to cause physical changes in the brain (Ackerman, 57).

Nobody seeks to “prohibit private schools, personal trainers, or cosmetic surgery on the grounds that they are inequitably distributed” (Farah, 25). If anything, these activities stem from our capitalistic society; some people get ahead, pursue, and hope to attain further opportunities to excel. Moreover, in the United States, “wide disparities in access to and quality of health care and education are tolerated” (Chatterjee, 306). If such atrocities are tolerated and if there is unequal access to these “life enhancers,” how is pharmacological enhancement any different?

Also, consider the alternate to the idea of coercion of the poor: people living in poverty may choose to spend their money on these drugs in an attempt to get out of poverty; “in principle there is no reason that neurocognitive enhancement could not help to equalize that opportunity in our society” (Farah et al., 296). In comparison with other forms of enhancement, from good nutrition to high-quality schools, “neurocognitive enhancement could prove easier to distribute equitably” (Farah et al., 296). If these drugs succeed in increasing memory and performance in school, this might be “the way out” of poverty. As Walter Glannon states in *Psychopharmacology and Memory*, memory enhancement “could promote greater opportunity for individuals to have better education and more lucrative employment” (265). Janet Radcliffe Richards had a similar argument against those who believe organ transplants exploit the poor which I adapt to psychopharmacological enhancement: “as we contemplate with satisfaction our rapid moves to...protect the poor, we leave behind one trail of people who [simply want to enhance], and another of people desperate [and willing enough to take the medications to get out of poverty]” (533). This intervention thus seems “in direct conflict with all our usual concerns for life, liberty, and the pursuit of happiness” (533).

Radcliffe further states that “coercion is a matter of reducing the range of options there would otherwise be”; in other words, coercers come and take away options until the best available is the one they want (535). Offering enhancement medicine for academic purposes, however, does *not* restrict the range of options; it actually may provide a vehicle to get out of that poverty. Even if the widespread use of enhancement drugs does serve as an act of coercion on the non-poor, it would be as “much of an infringement on personal freedom to restrict access to safe enhancements for the sake of avoiding the indirect coercion of individuals who do not wish to partake” (26). It is also worthwhile to “consider a scenario in which the entire populace is given full and equal access to Ritalin, Prozac, and other enhancers” (Farah, 25). Even if the drugs are proven to be completely safe, most people would still feel uneasiness, so it is more than likely that their “qualms about enhancement” are not linked to equal opportunity (Farah, 25).

The final concerns regarding psychopharmacological enhancement in academia stem from the belief that it goes against some widely-shared intuitions. This group of concerns results “from the many ways in which neuroscience-based enhancement intersects with our understanding of what it means to be a person, to be healthy and whole, to do meaningful work, and to value human life in all its imperfections” (Farah & Wolpe, 52). First, “brain steroids” lead to the moral objection to “gain without pain.” As the common saying “no pain, no gain” demonstrates, most people in our society “feel that there is value to earning one’s happiness, success, and so on” and that “accomplishments in life are made meaningful partly by the efforts they require” (Farah, 25; Farah & Wolpe, 53). Some argue that engineered improvements in performance, however, “are not authentic, not earned, and therefore not morally commendable” (Caplan, 273). Enhancement may be seen as a “moral shortcut” that “undermines the natural development of the human being to become self-reliant and to overcome obstacles” (Ackerman, 16, 57). If a student takes Adderall to study for the MCAT, it might be interpreted as “cheating,” “taking the easy way out, and lacking dignity or value;” Adderall enables him/her to study for less

time and absorb about the same amount of material. Enhancement as a whole may reduce the effort needed for personal accomplishment.

Although people “recognize the value of earning life’s rewards, our lives are [still] full of shortcuts to looking and feeling better” (Farah, 25). For example, “we do not disapprove of people who dislike vegetables improving their health by taking vitamin pills” (25). “Nor do we begrudge” medical school applicants their MCAT books or Kaplan classes (25). As Farah states, psychopharmacological enhancement “can therefore be seen as fitting in with an array of practices that are already accepted and widespread” (25). Although it does feel exciting to achieve our goals after testing our limits and “striving, struggling, and working to overcome innate boundaries,” it is *also* “very satisfying to have benefits that simply come from out of the blue or through good fortune” (Caplan, 275). Life is full of those pleasures and, consequently, “we do not always have to ‘earn’ our happiness to be really and truly happy” (Caplan, 275). Even if the “no pain, no gain” idea was held up, it would be difficult to determine “who decides which pains should be suffered to build character and which can be reasonably avoided,” something that would be necessary to transform this concern into public policy (Chatterjee, 306).

Some proponents of restriction on enhancement in academia argue that “the happiness or satisfaction achieved through engineering is seductive and will lead to a deformation of our character and spirit” (Caplan, 273). They also state that “to accept enhancement for our children will undermine and deform the role of the parent” (Caplan, 273). The President’s Council argued that enhancement will “distort or deform our character” and asked this question: “why would one need to discipline one’s passions, refine one’s sentiments, and cultivate one’s virtues—in short, to organize one’s soul for action in the world—when one’s aspirations to happiness could be satisfied by drugs in a quick, consistent, and cost-effective manner?” (Caplan, 273). In essence, if we enhanced ourselves and “our achievements and enjoyments came easy, why would we continue striving to be good and virtuous people?” (Caplan, 274) These critics seem to appeal to virtue ethics, claiming that through the use of enhancement, people will cease to desire to be good, honorable, hard-working individuals with good traits of character. Furthermore, if people “seek to perfect” their children through enhancement, the kids will no longer be seen as “gifts”—now possibly an appeal to religious ethics—and the parents may not be taught humility or be as “open to the unbidden” (Caplan, 276).

This argument, however, falls short in many aspects. As previously mentioned, there are already many people taking shortcuts—not necessarily neurological—that may be looked down upon but aren’t. In fact, we “generally encourage innovations that save time and effort, because they enable use to be more productive and to direct our efforts toward potentially more worthy goals” (Farah et al., 296). In addition, “laying the blame for vice at the foot of enhancement ignores the inconvenient fact that the desires for quick returns, easy money, and instant gratification have nothing at all to do with enhancement” (Caplan, 274). Instead, they are “traits of many, if not most, human beings” (Caplan, 274). Even if enhancement is prohibited, individuals will probably still desire to “cheat” or take “shortcuts.” If children cannot take a pill to focus and memorize more for the test, they just might look over and copy someone else’s answers. Just because a person is

enhanced with a better attention span or memory does not mean he/she will not be ready for challenges in the real world or will be “weak and spineless” (Caplan, 274). These characteristics are innate and improving performance “is not necessarily toxic to virtue” (Caplan, 274). Regarding the enhancement of children, a parent “can accept a gift, embellish, tweak, noodle, and modify it in order to improve it, and still cherish what was given as a gift” (Caplan, 276). It should not be necessary to accept a “random draw of the genetic library” or accept a “random point mutation” simply to learn to value and “abide the unexpected” (Caplan, 276). Overall, “should the state be allowed to interfere in how parents choose to raise their children?” (Greely, 92) In our free, capitalistic society, many believe that “it is their right to do whatever they can to minimize their distress and maximize their achievement. They may believe it is their duty to give their children every advantage” (Ackerman, 62).

Since psychopharmacology changes brain function and the brain is generally associated with the “self,” other pro-restriction arguments state that such drugs would undermine the commonly held idea that “persons endure over time” (Farah & Wolpe, 53). Although some of their characteristics may change, “there is a self that remains constant for as long as the person can be said to exist” (Farah & Wolpe, 53). What makes the brain so special “is that it is the seat of the mind”; it is the “essence of the ‘self’ and, therefore, “altering how a person’s brain works may be altering *who* that person is” and his/her “essential being” (Leshner, 76; Gannon, 233). If you change your brain and mind, are you actually changing yourself and your personhood? Since the brain is the final common path for the experience and expression of mental activity, “any intervention in our brains raises the specter of not only causing potential physical disability but also changing our cognition, emotion, or even our personalities” (Leshner, 76). Some people thus argue that “the changing of abilities, memories, and mood at will by swallowing a pill may undermine the idea of a constant ‘self’” and, consequently, is wrong (Farah & Wolpe, 53).

A similar objection to such enhancement stems from the Natural Law theory. Altering brain structure and function, specifically for enhancement purposes, is not natural (it is, after all, an *enhancement* of the human condition). The same issue arises with other types of enhancement. Gregory Pence mentions in *Re-Creating Medicine* how in medicine today, “many naysayers warn that we must accept natural limits...that we are too materialistic...that we are narcissistic in wanting better bodies than we inherited...and that all the above show our warped priorities” (161). This line of thought opposes enhancements of the mind and body and considers improvements improper.

After further investigation, however, this argument falls short of justifying restriction on psychopharmacological drugs in academia. There are plenty of current practices that are similarly unnatural and change the self and personhood. If drugs that alter the brain and, in effect, alter the self should be prohibited, then anti-depressants, for example, should be outlawed since they also change the self (from a depressed individual to a happier individual). That treatment, however, can be argued as therapy to normalize a “deviation,” so another example is necessary. Martha Farah and Paul Root Wolpe in *Monitoring and Manipulating Brain Function* state that “the attempts of human beings to use chemical substances to alter normal affective and cognitive traits is as old as the

drinking of alcohol” (48). Shouldn’t alcohol be prohibited if it temporarily changes the self, making some individuals polar opposites from their normal, sober selves? There are also a plethora of other procedures being done that are not natural. Consider “cosmetic surgery and the use of human growth hormone for healthy children who are *naturally* short” (Farah & Wolpe, 51). Although they do not specifically affect brain function as do psychopharmacological drugs, they are nonetheless enhancements that are generally accepted. Is laser eye surgery, a procedure that “sometimes can give eyes better than 20-20 vision” immoral or wrong (Caplan, 271)? Caffeine can also act as a stimulant (and some people do indeed use it for academic purposes) yet it is not prohibited. Meditation, tutoring, and psychotherapy are all enhancement techniques, although non-neuroscience-based, that affect brain function and the person and yet are not seen as objectionable (in fact, these are “often seen as laudable”) (Farah & Wolpe, 52).

Further opposition to enhancement states that maximizing performance of healthy individuals through such drugs is in a sense commodifying human abilities. A commonly shared intuition is that “persons have a kind of value that is independent of any commodity or capability they bring to the world”—Kantian ethics (Farah & Wolpe, 53). People have value “independent of how well they do what they do” (Ackerman 81). We do not value a spouse or a child “because of how well he or she performs,” like we would a car. We value them “because of some essence of their personhood that we care about—the very essence that we instinctively feel comes under threat of distortion or replacement whenever a medical intervention touches the brain” (Ackerman, 81). By taking the drug and altering our neurochemistry, it is almost as if we are improving our performance and abilities “the way we would improve the performance of a car, opening the hood and going in and tinkering” (Ackerman, 81). Psychopharmacological drugs can indeed maximize the performance of an already healthy, functional person and this “can be viewed as commodifying human abilities” (53).

This idea is again contradicted by the number of other practices that similarly commodify human abilities; it is not simply “unique to Ritalin-enhanced executive ability” (Farah et al., 297). It is probably more baldly on display “in books and classes that are designed to prepare preschoolers for precocious reading, music, or foreign language skills, but many loving parents seek out such enrichment for their children” (Farah et al., 297). If such activities are not prohibited based upon the idea that they “commodify” human abilities, then there is no reason to justify the restriction of enhancement psychopharmacology.

III. Conclusions & Final Thoughts

Although some of the arguments against brain enhancement are valid, I do not believe they are sufficient to restrict the use of enhancing psychopharmacological drugs in academia. As Arthur Caplan states in *Staining their Brains: Why the Case Against Enhancement is Not Persuasive*, “each argument carries some emotive force but is not a sound basis for rejecting choices that individuals might make to improve or optimize themselves or their children” (273). It is true that there “may be unforeseen adverse effects of chronically altering brain circuits with psychotropic drugs” but I believe it is up to the individual to “weigh their short-term benefits against their long-term risks”

(Gannon, xvi). It will be up to the person to decide whether “the benefits of performing better on exams or having better memory [are] worth any risk to other mental functions” (Gannon, xvi). Nonetheless, these concerns do not warrant restriction. William Safire in *Visions for a New Field of 'Neuroethics'* asks “what is there to stop us from using such a ‘Botox for the brain’” to make a person more “intellectually attractive” (10)? I believe the only factor that will warrant restriction has to do with safety; only if studies show a severe and dangerous correlational or causative effect of the drugs on the body or brain, will restriction on *that particular* drug be enforced. Restriction on enhancement in academia itself, however, will not come to fruition.

From a practical viewpoint, it would be hard to regulate psychopharmacological enhancement in academia (for example, to prevent “cheating”). Millions of prescriptions are written every year for drugs that act on the brain yet, as Sandra Ackerman writes in *Hard Choices, Hard Choices*, “it is startling to remember that there are no objective tests for mental disorders” (55). Farah states in *Emerging Ethical Issues in Neuroscience* that “the line between healthy and sick is a fuzzy and perhaps arbitrary one” (21). It will be difficult to distinguish between kids with ADHD who need stimulant medication for therapy and normal, healthy kids who might want it for enhancement: “as with affective disorders, it is difficult to locate a discontinuity between normal attentional functioning and ADHD” (22). If doctors intervened too “high up” on the continuum, they would be practicing enhancement. Farah even states that “pharmacological enhancement of children’s attention is routine in some communities” (22). Parents are eager to “give their children every edge in school” and “press their pediatricians for medications” (22). Teachers, meanwhile, “often welcome the greater orderliness in a classroom of attentive students” (22). And since ADHD in children is “diagnosed primarily on the basis of parent and teacher questionnaire responses, it can be difficult to free the diagnostic process from the values and standards of the respondents” (22). This difficulty to separate enhancement from therapy will make monitoring and restriction of psychopharmacological enhancement very difficult.

If a law was to be developed, what features would the “FDA take into account when weighing whether or not to approve a drug that might be taken by healthy people to augment or improve some aspect of themselves” (Ackerman, 59)? How sure can we truly be that the medicine is safe and how much benefit outweighs the risks? The safety criterion is an issue in itself since testing has to be done on healthy people who may just end up getting sick. Whether healthy people “will risk endangering their health for the sake of mental improvement remains to be seen” (Ackerman, 59). And, in an extreme case, will society “be willing to relax the safety standards for an enhancement drug that produces a very substantial effect, catapulting the user from, say, average intelligence to brilliance in one dose” (Ackerman, 59)? All of these issues will make the development of regulations very difficult.

Enhancement of cognition in normal people has become and “is now a fact of life, and the only uncertainties concern the speed with which new and more appealing enhancement methods [with less adverse side effects] will become available and attract more users” (Farah, 24). Overall, I feel the public fear or feeling that brain enhancement

and manipulation is wrong and dangerous will pass. It is a possibility that our innate fear of the new and novel leads to the questions and concerns about psychopharmacology. As Donald W. Pfaff writes in *A Brain Built for Fair Play*, this fear may then manifest in and serve as a basis “for the human instinct for fair play” (41). Are we trying to protect the vulnerable because “at some time in our lives, we will all be vulnerable” (Ackerman, xii)? Are we simply afraid and do not want others to propel ahead of us in academia, for instance? This fear may cause us to apply the Golden Rule and then use the inequity reason as a basis for rejecting enhancement.

There were many novel trends that were historically looked down upon but are currently widespread. Paradigms change as do standards in society; as Mark Waymack states in *Philosophy of Medicine*, “history is replete with medical innovations that were reviled, contested, and that some medical authorities tried to prevent, but which we now gladly accept as valuable, appropriate, and perhaps even at the core of good medical practice” (91). Gregory Pence, in *Re-Creating Medicine*, points out that as late as the mid-19th century “it was considered unprofessional (and unethical) for a physician to visually examine a woman’s genitalia” (91). For many years, “women in childbirth were not offered painkillers” (91). These practices were thought morally wrong but were adopted as time progressed. A “similar uneasiness” was even “evident in the early discussions of the human genome project”; it is a “control issue and a fear that at some point scientists are going to unalterably change the fundamental sense of what it means to be human or to control one’s world” (Ackerman, 114). Most people accept the “augmentation of our facilities on the outside of the skull, comfortably wearing glasses or contact lenses or even cochlear implants, yet feel uneasy at the prospect of someone tinkering with the equipment inside” (Ackerman, 113). I believe this barrier partially has to do with a shortfall in the public understanding of science, so educating the public to allow them to perform more realistic risk-benefit analyses is critical. With education and time, I believe society will adapt to the use of psychopharmacology for enhancement as it has to the plethora of other treatments or activities.

As I hope to have shown with the example at the beginning of the paper, the decision about whether using “enhancement drugs” is ethical “does not require long thought or debate when the life of someone we care about might hang in the balance; an ethics of enhancement would play no part in this choice” (Ackerman, 75). Not all enhancement is bad and if a person wants enhancement, it does not have to be bad (Caplan, 285). Instead of “looking inward to our own nature...to see what is or is not permissible,” we need to “look outward to the world that we create, to the institutions that shape our societies, and to the relationships, especially the most intimate and enduring relationships in our lives—those with our parents, our partners, and our children—those relationships that are so central to our flourishing—and to ask, ‘What will be the likely impact of any particular enhancement technology on the possibility of fulfilling those relationships’” (Ackerman, 76).

I have come to the conclusion that there would be no detrimental consequences and, consequently, psychopharmacological enhancement should not be prohibited or restricted. This does not imply, however, that individuals should not think for themselves

and perform risk-benefit analyses about whether to take specific enhancement medication or not. It is essential that consumers do not take “unknown risks for scientifically dubious but well-advertised benefits” (Greely, 90). We, as a society, must also not become over-reliant on drugs to make us better or to fix our problems (which, consequently, may eliminate the intimate doctor-patient relationship.)

I believe the practice of cosmetic neurology is inevitable. Many people are “predicting that the 21st century will be the century of neuroscience. Humanity’s ability to alter its own brain function might well shape history as powerfully as the development of metallurgy in the Iron Age, mechanization in the Industrial Revolution, or genetics in the second half of the twentieth century” (Farah et al., 289). There is always the possibility that good science aimed at the treatment of neurological disease may be applied for enhancement purposes. We must never cease to examine the “benefits and dangers of neuroscience-based technology, or ‘neurotechnology,’ and consideration of whether, when, and how society might intervene to limit its uses” (Farah et al., 289). Until we have “disentangled the *a priori* from the empirical claims, and evaluated the empirical claims more thoroughly, we are at risk of making wrong choices” (Farah et al., 297). Thinking about and considering such neuroethical problems “may help us maximize the benefits and minimize the harms of the revolution in brain science” (Greely, 94). When we deal with brain science, we are “dealing with the organ that makes us unique individuals, that gives us our personality, memories, emotions, dreams, creative abilities, and at times our sinister selves” (Ackerman, xii). We, as a society, must remain careful and attentive since the brain is, after all, “the seat of what we consider our humanity” (Ackerman, ix).

Psychopharmacological enhancement will go on to challenge current philosophical beliefs as it already has. As Farah and Wolpe state, “brain-based enhancement [is] forcing us to confront the fact that we are physical systems. If specific abilities, personality, traits, and dispositions are manifest in characteristic patterns of brain activation and can be manipulated by specific neurochemical interventions, then they must be a part of the physical world” (54). This realization and idea, however, “does not mesh easily” with our intuitions about personhood and the traditional ideas regarding the soul or the “nonmaterial component of the human mind” (Farah & Wolpe, 54). If the self or soul can be changed physically and chemically, is it truly immaterial?

Regardless of the answer to that question, we should not be afraid to challenge current beliefs and progress. As Pence states, “we are in the age of exciting new frontiers in medicine” (290). “Medical advancement can reshape what it means to be human: better athletes through enhancement medicine, brighter and funnier children through cloning, and three careers instead of one-plus-retirement as longevity increases” (180). Instead of being fearful, we need to embrace this “exploding knowledge” that “is giving us new opportunities, if not for ourselves, then for the next generation” (180). Hippocrates once said that “life is short, science is long; opportunity is elusive, experiment is dangerous, judgment is difficult.” Psychopharmacological enhancement has a possibility to increase opportunity and make our judgment sharper, making science easier and our lives longer, better, and more pleasant.

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The Motivational Apparatus of Free Agents

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In his *Essay Concerning Human Understanding*, John Locke provides a comprehensive account of the motivational apparatus that directs the will of the agent to the execution of voluntary actions, where a voluntary action is the result of “an act of the Mind directing its thought to the production of any Action, and thereby exerting its power to produce it”¹. Locke is concerned with making his account compatible with his conception of the free agent as one who is motivated to pursue the maximum good, i.e. his happiness, and acts accordingly. The free agent is the picture of rationality. He is focused on his pursuit of happiness, and is impervious to those compulsive, destructive desires whose satisfaction brings him no closer to that aim, and is herein distinguished from the bound agent. His primary desire for happiness exhaustively informs the content of his secondary desires.

However, Locke's account of the motivational apparatus that directs the will of the agent is incomplete. Though Locke admits the agent's evaluation of the good as a factor in the ultimate direction of his will, it bears no *necessary* connection to the content of his desires, which, according to Locke, is what ultimately informs his will. Therefore, the agent's will is determined not only by his evaluation of the good, but also by some mysterious other factor whose nature is never made clear, but whose influence on the agent's will in many cases overwhelms that of his evaluation of the good. Locke's account leaves a black box between the agent's rational evaluations and his will, such that the bound agent can never know what steps to take in order to guarantee his freedom, and the free agent can never know precisely how he came to be free. This conclusion is unsavory not only in light of our intuitions on the issue of freedom (where we view freedom as something to be attained by the agent, rather than mysteriously visited on him), but also in light of Locke's own views on moral accountability and the possibility of self-betterment.

I will attempt to offer an account of the agent's motivational apparatus that solves the mystery in Locke's account of what other factor determines the agent's will besides his evaluation of the good. Under this alternative account, I will propose that the agent's desires are determined not only by his evaluation of the good, but also by his assessment of the likelihood that the projected good of a voluntary action be realized given his performance of that action.

I. Locke's account of the motivational apparatus and human freedom

In regard to what determines the will, Locke writes “I am apt to imagine it is not, as is generally supposed, the greater good in view: But some ... *uneasiness* a Man is at present under”². Locke further defines “uneasiness” as a mind's desire for want of some absent positive good. So the agent applies his will to the relief of some uneasiness under which he presently finds himself. In case the agent finds himself under many uneasinesses, he

applies his will to the relief of the most pressing of those uneasinesses that he judges himself capable of relieving.

So for Locke, the content of the agent's desires can be influenced by his evaluation of the good, but is ultimately independent from it, and frequently diverges from it³. That there is no necessary connection in Locke's account between the agent's evaluation of the good and the content of his desires explains how it is possible for the agent to experience weakness of will, where he carries out actions that contradict what he believes would be best for him to do.

The converse of the agent who experiences weakness of will is the free agent. According to Locke, freedom is the power the agent has "to think, or not to think; to move, or not to move, according to the preference or direction of his own mind"⁴. That is, the agent whose desires are rationally determined is free. Locke also presumes that the agent's primary rational aim is the pursuit of his own happiness, which Locke defines as the greatest possible good for that agent. That means the "preference or direction" of the agent's own mind is always directed toward this aim. Therefore, the agent is free to the extent that the content of his desires is informed by his pursuit of happiness.

II. How the agent's evaluation of the good can exert itself on his desires

A tension exists between Locke's account of the agent's motivational apparatus and his conception of the free agent. For if the agent's evaluation of the good bears no necessary connection to the content of his desires (which is the feature of Locke's account that allows it to accommodate for cases in which the agent experiences weakness of will), then his desires are determined by some mysterious other factor⁵. And if the free agent is defined by the utter consistency between his evaluation of the good and the content of his desires, then he has freed his motivational apparatus from the influence of that mysterious other factor. But the *Essay* provides no clues as to how he could have done so, or what that mysterious other factor is. Locke tries to address this tension by introducing some tools into his account with which the agent can bring his evaluation of the good and the content of his desires into stricter alignment. But upon closer examination, these tools, however powerful they be in the hands of the agent, will prove yet unable to guarantee that the agent's desires be aligned with his evaluation of the good.

a. The power of due consideration and examination: First, Locke proposes that by "due consideration and examining" of the goods proposed, it is in the agent's power to raise his desires proportionally to reflect those goods⁶. However, it is obvious from our experience that this power is not always effective in that task. For example, the agent may know very well the good that will result from following a healthy diet, but he may nevertheless order the pizza. In fact, it seems the disturbing feature of cases of weakness of will is that the agent may have thoroughly contemplated the projected good of a prospective application of his will, but yet decides to do the opposite. The famous passage from Ovid's *Metamorphoses*, which Locke quotes in his discussion of such cases, puts the matter succinctly: "Video meliora proboque, Deteriora sequor"⁷. Also, crucially, there is no guarantee that the execution of this power will work at all, given

Locke's account. The agent who already comprehends the projected good of a prospective application of his will, but experiences a disproportionately low desire for want of that good, may dutifully commit himself to further consideration and examination of the fact of that good, but to no avail. For according to Locke, the agent's evaluation of the good bears no necessary connection to the content of his desires.

b. The power of suspension: A second, perhaps mightier tool that Locke's account makes available to the agent is the power to suspend his desires before their exercise on the will. However, Locke does not provide a clear description of how that power is motivated, or of its precise function in the motivational apparatus. These obscurities of the power of suspension must be carefully examined, for that power is key to the viability of Locke's theory of human freedom. The following passage elucidates Locke's views on the matter:

This is the hinge on which turns the liberty of intellectual Beings in their constant endeavours after, and a steady prosecution of true felicity, that they can suspend this prosecution in particular cases, till they have looked before them, and informed themselves, whether that particular thing, which is then proposed, or desired, lie in the way to their main end, and make a real part of that which is their greatest good⁸.

If the power of suspension is indeed the hinge on which the liberty of the agent turns, it is critical that Locke's account detail exactly what it would take for the agent to refine his power of suspension. For otherwise he is lost in his pursuit of freedom.

First, we must determine what motivates the power of suspension. The act of suspending one's desires appears to be a voluntary action, in which case under Locke's account, it would need to be motivated by some pressing uneasiness. But it is unclear what that uneasiness would be. One possibility is that the power of suspension is actually not a voluntary action, but rather it is unique in the agent's arsenal of powers. But this would complicate things a great deal; Locke would have to give an account of this *sui generis* mode of action, and explain how it fits into his general theory of power. We might want to reject this possibility in order to preserve the parsimony of Locke's original account.

Another possibility is that the power of suspension is motivated by the agent's uneasiness for want of his own happiness. The following passage suggests that such an approach may be consistent with Locke's views:

Though this general Desire of Happiness operates constantly and invariably, yet the satisfaction of any particular desire can be suspended from determining the will to any subservient action, till we have maturely examin'd, whether the particular apparent good, which we then desire, makes a part of our real Happiness⁹.

So Locke believes that the agent's primary desire for happiness makes him free with regard to his secondary desires, insofar as he executes his power of suspension to examine his secondary desires to ensure their consistency with his primary desire for

happiness. In this way, the content of the agent's desires, which are otherwise divorced from his evaluation of the good, can be brought into alignment with it through his execution of the power of suspension, which is motivated by his primary desire for happiness. Under this account of the power of suspension, it is clear why Locke thinks it plays such an important role for the free agent, for it *alone* can close the gap between value and desire left open in his account of the motivational apparatus. The free agent, then, is likely in the practice of executing his power of suspension on a very consistent basis. Some scholars have indeed taken this interpretive approach; the case of the agent's desire for happiness is viewed as an isolated instance of a cognitively structured attitude of the agent exerting direct influence on his will. The case of the agent's desire for happiness lies in contrast to the cases of the agent's secondary desires, whose influence on the will is not a matter of reason¹⁰.

The issue of the precise function of the power of suspension in the motivational apparatus must also be resolved. One possibility is that the power of suspension allows the agent to reevaluate the projected goods of the applications of his will under consideration. However, this approach would make the power of suspension a very weak one, for we earlier saw that the agent's evaluation of the good bears no necessary connection to the content of his desires, which means that under this approach, there is no guarantee that the execution of the power of suspension will ultimately influence the agent's will, no matter how successful the agent is in the reevaluation of the projected goods of the applications of his will under consideration. However, Locke's suggestion that after the agent executes his power of suspension, he has the opportunity to "examine, view, and judge of the good or evil of what we are going to do" seems to support this approach¹¹. So perhaps the power of suspension allows the agent to remind himself of the good or evil of what he is about to do, and hope that his desires recalibrate themselves accordingly. One might also claim that experience supports this approach to the power of suspension, for while the agent can perhaps exert direct control over his rational evaluations of good and evil, we might hesitate to say that he can directly manipulate his desires.

Another possibility is that the power of suspension allows the agent to recalibrate the strength of the desires he is currently experiencing. This approach gives the agent who executes the power of suspension *direct* access to his will. This approach seems also to have experiential support, as it is often not for want of seeing the good or the evil of an action that an agent experiences weakness of will. So if the power of suspension is to be of any utility in such cases, it must act directly on the agent's desires.

These obscurities in Locke's account of the power of suspension may have no resolution, but perhaps they pose no threat to Locke's overall theory. Whatever its precise function, it seems clear that the ultimate utility of the power of suspension lies in the recalibration of the agent's desires into alignment with his pursuit of happiness. Desires have direct, exclusive influence on the will, and if the power of suspension is to be of any use at all, it should serve to influence the course of the agent's voluntary actions. However, some more disturbing issues remain, which must be resolved if Locke's account of the motivational apparatus is to be consistent with his account of human freedom. First, if it is true that the agent's execution of his power of suspension is motivated by his primary

desire for happiness, and that his desire for happiness issues *directly* from his evaluation of the good, it seems to follow that he would execute his power of suspension before every application of his will. However, as it is clear that the agent does *not* suspend his desires before every application of his will, the set of conditions that would motivate his execution of the power of suspension must yet be outlined. Locke, however, provides no such outline (as it would presumably clash with the features of his theory which enable it to accommodate cases of weakness of will), which means there is no way for the agent to learn how to become a consistent executor of the power of suspension, which is necessary for his becoming free. And any who would insist that the agent indeed suspends his desires before every application of his will must at least admit that not every execution of the power of suspension results in a successful recalibration of the agent's desires (for if it did, there should be no cases of practical irrationality). Again, Locke provides no outline of the conditions under which an execution of the power of suspension will be successful. This deals another blow to the agent who wants to be free, for that power on which his liberty is supposed to turn is only variably successful, and he can never know what measures to take to guarantee its success.

III. The problem of Locke's account of the motivational apparatus and human freedom

There is a fundamental tension between Locke's account of the agent's motivational apparatus and his conception of the free agent. His account of the agent's motivational apparatus is designed to accommodate for those pesky cases of weakness of will, so he cannot provide a stable set of criteria for when the agent would deploy those powers so necessary to his freedom. Locke leaves a black box between the agent's evaluation of the good and the content of his desires. That he believes there exist certain tools such as the power of suspension that the agent can use to attempt to bring his desires into stricter alignment with his evaluation of the good is no comfort to the agent who aspires to be free; the fact that the agent's desires are not *simply* functions of his evaluation of the good means no matter how mighty be his power of suspension, his desires may nevertheless diverge from his evaluation of the good. This is a disturbing conclusion, because Locke posits the power of suspension as the hinge on which the agent's freedom turns.

IV. An alternative motivational calculus

In an attempt to provide a complete account of what determines the agent's will (and to thereby solve the mystery in Locke's account of what other factor could determine the agent's will besides his evaluation of the good), I propose an alternative account of the motivational apparatus. Under my account, the agent chooses between prospective applications of his will on the basis of two criteria: the projected good of an act, and the likelihood that the good be realized through that act. I propose that these two criteria exhaustively determine the agent's desire, and therefore his will. This account is actually just a reformulation of an axiom of probability theory, which holds that when made to decide between gambles, rational agents choose the one with the maximum expected value, where expected value is the product of the value of that gamble and its probability. It may seem odd to conceive of voluntary actions as gambles, but actually it makes sense. We often act to realize some projected good, but then the good is not realized. So when

the agent applies his will to some act, he is gambling that its projected good will be realized.

a. How the likelihood criterion is determined: The likelihood that the projected good of an application of the will be realized bears a tight relationship to the temporal distance between the particular application of the will under consideration and the realization of its projected good. As the temporal distance increases, the likelihood diminishes for two reasons.

First, as the temporal distance increases between the particular application of the will under consideration and the realization of its projected good, so do the number of elements in the causal chain between them and, in turn, so do the number of opportunities for forces that lie outside the agent's control to intervene and interrupt the causal chain. For example, the agent who is choosing between applying his will to going to the tavern for a drink and going to his AA meeting would need to consider (among other things) the projected positive good of feeling pleasantly drunk against the projected negative good of having a terrible hangover the next morning. He might determine the likelihood of feeling pleasantly drunk, the projected positive good of the application of his will under consideration (the act of going to the tavern for a drink) whose realization is more temporally proximate to that application of his will, to be greater than the likelihood of having a terrible hangover the next morning, its projected negative good whose realization is more temporally distant from that application of his will. This is because while there can be very little standing in the way of the agent feeling pleasantly drunk after applying his will to the act of going to the tavern for a drink (indeed, it is practically an *immediate* consequence thereof), many things could happen such that his act of going to the tavern for a drink would not lead to his having a terrible hangover the next morning. The agent might meet a friend at the bar who wants the agent to accompany him to a different venue, in which case the agent might have only a few drinks at the bar before leaving, or the agent might get struck by a sudden bout of sleepiness and decide to go home after having just one drink, etc.

Second, as the temporal distance increases between the particular application of the will under consideration and the realization of its projected good, so do the number of voluntary actions to which the agent must commit in order to realize that projected good. Therefore, the causal force of the particular application of the will under consideration to realize its projected good diminishes, because each element in the causal chain provides the agent an opportunity to interrupt it. Returning to the example of the agent who is choosing between applying his will to going to the tavern for a drink and to going to his AA meeting, he might determine the likelihood of feeling pleasantly drunk to be greater than the likelihood of having a terrible hangover the next morning because it is necessary that after the first drink he apply his will to many subsequent acts of drinking in order to have a terrible hangover the next morning; simply applying his will to going to the tavern for one drink will not produce such an effect. Though it be perhaps likely that the agent will apply his will to many subsequent acts of drinking as a consequence of applying his will to the act of going to the tavern for the first drink, the agent nevertheless has the *power* to interrupt the causal chain by *not* applying his will to those subsequent acts of

drinking, and so he may judge the likelihood of having a terrible hangover the next morning to be low.

b. How expected value is calculated: Now we are in a position to understand how the expected value of a particular action can be calculated. It should be noted, however, that due to the overwhelming complexity of considerations that are involved in everyday decision-making, the precise mathematical formulation of expected value cannot be taken too seriously when we consider how the agent chooses between prospective applications of his will. Unlike betting on horses, for example, where the projected good (monetary earnings on bets) is simple and explicit and the agent can easily rank-order the bets in terms of their expected values, choosing between prospective applications of the will in everyday situations requires that the agent consider a mess of projected goods, where the likelihoods of their respective realizations is often uncertain. The value of positing expected value calculus as a mathematical analogue to decision-making is in providing a guide for us to make sense of the decision-making process as a case of reasoning under uncertainty, wherein the projected goods of various alternatives must be considered *alongside the likelihoods of their respective realizations*. Roughly, we can say that the agent sums the products of the projected goods and the likelihoods of their respective realizations (where the goods can be either positive or negative):

Expected value of a given course of action = projected good₁ X probability₁ + projected good₂ X probability₂ ...¹²

Let's see how the calculation is carried out in the case of the agent choosing between applying his will to going to the tavern for a drink and going to his AA meeting.

First, the agent considers the expected value of applying his will to going to the tavern for a drink. He considers the magnitude of the projected positive goods of that application of his will, such as the feeling of being pleasantly drunk. He then considers the likelihoods of those projected positive goods being realized by that application of his will. He also considers the magnitude of the projected negative goods of that application of his will, such as having a terrible hangover the next morning. He then considers the likelihoods of those projected negative goods being realized by that application of his will.

Next, the agent considers the expected value of applying his will to going to his AA meeting. He considers the magnitude of the projected positive goods of that application of his will, such as the benefits of leading a sober life. He then considers the likelihoods of those projected positive goods being realized by that application of his will. He also considers the magnitude of the projected negative goods of that application of his will, such as having a dull evening. He then considers the likelihoods of those projected negative goods being realized by that application of his will. The agent then chooses to either go to the tavern for a drink or to go to his AA meeting, depending on which action corresponds to the highest expected value.

V. Weakness of will

We can now provide a clear account of cases of weakness of will, without resorting to the mystifying assertion, as Locke must, that at times the agent's desires will inexplicably diverge from his evaluation of the good. Under my account, cases of weakness of will can be explained by the agent's assessment of both the projected good of a prospective application of his will, and the likelihood that it be realized given that application of his will. For example, if the agent chooses to go to the tavern for a drink instead of to his AA meeting, a possible explanation of his choice given by my account would be that though the agent anticipates a greater projected good from a sober life than from having a drink, he knows the likelihood that the good to be gotten from having a drink be realized by his going to the tavern is extremely high – he will feel good as a direct consequence of having a drink, while he knows the likelihood that the good to be gotten from living a sober life be realized by his going to his AA meeting is much lower – he must make a whole series of lifestyle changes over the course of at least several months before he will start enjoying the good of a sober life. So he goes to the tavern, and maybe he tells himself that he will go to next week's AA meeting.

Under my account, the strength or weakness of the agent's will is in part a function of his commitment to the various actions involved in the process of realizing a projected good. The more committed he is to those actions, the more likely it is that the projected good will ultimately be realized. My account allows us to conceive of the factor of likelihood as a *control* on the influence of the magnitude of the projected good of a prospective application of the will on the agent's decision-making; the agent can forgo actions with significant projected goods if the likelihoods of their respective realizations are sufficiently small. The greater be the likelihood that a projected good be realized, the larger that good looms in the mind of the agent. The smaller be that likelihood, the blinder is the agent to the magnitude of that good.

Much of my account seems to hang on the long-term course of action versus immediate action distinction. One might object that weakness of will is not always like this. But actually, to understand cases of weakness of will in terms of the distinction between long-term versus immediate action makes conceptual sense; we often speak of the will being weak when the agent seeks “instant” gratification. When the will is strong (as in, when we speak of the agent as having “good willpower”), then the agent can commit to long-term goals. For example, we don't consider the action of going to the tavern for a drink to require any willpower; rather, the will is tested when the agent applies his will to an action whose fruits he cannot immediately enjoy.

The idea that cases of weakness of will can be understood in terms of the distinction between long-term versus immediate action is also grounded in much textual support from the *Essay*. Locke suggests that when the consequences of an action are immediate, “a Man never chuses amiss [since] Things in their present enjoyment are what they seem”¹³. However, the real value of projected goods is obscured in the case of actions which “carry not all the Happiness, and Misery, that depend on them, along with them in their present performance; but are the precedent Causes of Good and Evil, which they draw after them, and bring upon us, when they themselves are passed”, and the agent instead sees only “the greater Good *appearing* to result from that choice in all its

Consequences, as far as at present they are represented”¹⁴. To understand Locke’s view, we might imagine the consequences of our actions as situated at varying temporal distances from our vantage point, as if they were spread through the length of a road ahead of us. As we travel towards them in our movement through time, their real values become more apparent, just as distant objects that appear small gradually reveal their true dimensions as we approach them.

So my account integrates the element of time, which Locke acknowledges to be an influence on our ability to perceive the real value of projected goods, into the agent’s motivational apparatus itself by translating the element of time in terms of its effect on the agent’s assignment of likelihoods to the realization of projected goods. In a way, in his observations on the systematic influence of the element of time on the agent’s desires, Locke solves the mystery we earlier encountered of what *else* determines the agent’s will besides his evaluation of the good. The more temporally distant be the projected goods of an action, the less able is the agent to see their real value. But Locke’s solution leaves open questions about the mechanics of the agent’s motivational apparatus. We cannot be satisfied with Locke’s comparison of temporal distance to spatial distance as an explanation of why we are blind to the real values of projected goods which lie in the temporal distance, for there are many cases in which we are quite attuned to the real values of such goods. According to Locke, the “weak and narrow constitution of our minds” explains our inability to perceive the real values of projected goods that are temporally distant from us¹⁵. But this explanation is superficial. The question remains—what about a weakly and narrowly constituted mind makes it less apt to perceive the real value of temporally distant goods? My account answers this question—the agent is less apt to perceive the real value of temporally distant goods because he assigns lower values to the likelihoods of their realizations.

Locke actually acknowledges that in the operation of the agent’s motivational apparatus, he will at times assign varying likelihoods to the realizations of projected goods. However, according to Locke, factoring such considerations into decision-making is a case of judging amiss. He writes, “when we judge, that though the Consequence be of that moment, yet it is not of that certainty, but that it may otherwise fall out; or else by some means be avoided, as by industry, address, change, repentance, etc. That these are wrong ways of judging, were easy to shew.”¹⁶

However, the alternative account, besides explaining weakness of will (which perhaps could be called a case of judging amiss), also explains instances of good decision-making. The alternative account makes sense of why the agent does not spend his time pursuing ludicrously out-of-reach goals. For example, the agent might evaluate the projected good of life as a famous actor to be quite great, but because he assigns such a low likelihood to the realization of that good, he does not pursue it. This could certainly be considered a case of good, prudential decision-making.

VI. Freedom under the alternative account

Under this alternative account, the agent's evaluation of the good necessarily determines his will, though its effect is tempered by his assessment of the likelihood of the realization of that good. Gone is the black box of Locke's account between the agent's evaluation of the good and his will that had made his conception of the free agent so problematical. So perhaps Locke's project of explaining how the agent attains freedom can be better effectuated under this alternative account, wherein the agent can employ reason to *directly* influence his desires, and thereby his actions. As Locke writes:

Whatever false notions, or shameful neglect of what is in their power, may put Men out of their way to Happiness, and distract them, as we see, into so different courses of life, this yet is certain, that Morality, established upon its true Foundations, cannot but determine the Choice in any one, that will but consider: and he that will not be so far a rational Creature, as to reflect seriously upon infinite Happiness and Misery, must needs condemn himself, as not making that use of his Understanding he should¹⁷.

But we have already seen how the agent's understanding, which serves to inform his evaluation of the good, is not the sole determinant of his will under Locke's account. His explanation of cases of weakness of will allow that the agent's desires inexplicably and at times radically diverge from the evaluation of the good that issues from his understanding. The agent with a consummate conception of the good may nevertheless spend his life acting on demented desires. Locke attempts to provide the agent with tools to bring together his understanding (evaluation of the good) and his desires, such as the power of suspension, but we have already expounded the myriad deficiencies of this capricious power. Indeed, the agent's understanding and his desires seem to be incurably separate under Locke's account. By contrast, under the alternative account, the agent can employ his reason to fine tune either his evaluation of a good or his assessment of the likelihood of its realization to *directly* determine his will to those voluntary actions most conducive to his pursuit of happiness. The alternative account allows us to describe precisely what the agent must do to attain freedom.

It might seem that the alternative account has no room for the notion of practical irrationality, as all the determinants of the will are purported to issue *directly* from reason. We would then be forced to consider cases of weakness of will as cases of rational behavior, when it is clear that the act of going to the tavern for a drink instead of to an AA meeting, for example, would *contradict* the agent's highest rational aim for happiness. However, it is not necessary that we consider all assessments that issue from the agent's faculty of reason to be themselves "rational". In the strictest sense of the word, perhaps all assessments issuing from a faculty of reason are necessarily "rational," but the word may have a more nuanced significance in the context of considerations of "practical irrationality." As in, we might want to consider any assessments issuing from a faculty of reason to be themselves subject to a *further* standard of rationality to be determined by considerations of that highest rational aim: the pursuit of happiness. By such a standard, assessments are rational to the extent that they compel the agent who holds them to act in ways that are conducive to that pursuit. Therefore, we can consider the agent who goes to the tavern for a drink instead of to his AA meeting to be acting

irrationally, as his assessment of the expected values of going to the tavern and going to his AA meeting compels him to act in a way that is not conducive to his pursuit of happiness, but rather damaging. Assuming the agent assigns a higher value to the projected good of going to his AA meeting than to going to the tavern for a drink, this means that the agent's assessment of the likelihood of the realization of the projected good of going to his AA meeting is *irrationally* low.

So the agent attains practical rationality, or freedom, by learning to appropriately assess the likelihoods of the realizations of projected goods to result from applications of his will. The agent's assessments of the values of those likelihoods decreases as the amount of temporal distance grows between actions and their projected goods, which means that he can attain practical rationality by learning to feel comfortable with that temporal distance. We previously established that as the temporal distance increases between the particular application of the will under consideration and the realization of its projected good, so do the number of voluntary actions to which the agent must commit in order to realize that projected good. So the agent whose assessment of the likelihood of the realization of the projected good of going to his AA meeting is irrationally low, for example, can raise his assessment of that likelihood and thereby choose to go to his AA meeting rather than to the tavern for a drink by deciding to commit to those intervening voluntary actions necessary to realize that projected good. He might remove all the alcohol from his home, or cut off contact with his alcoholic friends, etc.

But attaining freedom is not simply a matter of assigning high values to the likelihoods of the realizations of projected goods. As we earlier observed, the agent who assigns low values to the likelihoods of the realizations of the projected goods of ludicrously out-of-reach pursuits is an agent who is prudent in his decision-making. So attaining freedom is about striking a balance; the agent should ideally assign the highest values to the likelihoods of the realizations of the projected goods of attainable goals, but he should assign lower values to the likelihoods of the realizations of the projected goods of ludicrously out-of-reach pursuits. That way, the agent will spend his time chasing neither fleeting pleasures nor fantastic dreams, but rather he will pursue just those things that will bring him closer to happiness.

Notes

1. John Locke, "An Essay Concerning Human Understanding", edited by Peter Nidditch, Oxford University Press, 2.21.28
2. 2.21.31
3. The only exception to this characterization of our desires is the case of velleity, which is the lowest degree of desire that Locke posits as necessarily correspondent to some evaluation of good. However, this does not contradict the independence of an agent's will from his evaluation of the good because, as Locke later points out, velleity for some good "carries a Man no farther than some faint wishes for it, without any more effectual or vigorous use of the means to attain it" (2.20.6). So this theoretically necessary connection between an agent's evaluation of good and his desires is meaningless, because velleity is

a species of desire which apparently has virtually no effect on the will, and so cannot influence an agent's voluntary actions.

4. 1.21.46

5. One of the reasons why Locke revised his final editions of the *Essay* to include this feature was precisely to account for cases of weakness of will. See:

Chappell, Vere. Locke on the Suspension of Desire. *Locke Newsletter* 29 (1998): 23-38

6. 1.21.45

7. "I see and approve the better course, but I follow the worse." Ovid, *Metamorphoses*, VII, 20-1

8. 2.21.52

9. 2.21.71

10. see Magri, Tito. Locke, Suspension of Desire, and the Remote Good. *British Journal for the History of Philosophy* 8 (2000): 55-72

11. 2.21.52

12. The following is a mathematical formulation of expected value in the context of a betting situation:

$$E(\text{winnings}) = (\text{cost of bet} \times \text{probability of losing}) + (\text{potential earnings} \times \text{probability of winning})$$

The context of decision-making in everyday situations complicates the formula in two ways:

1. In the context of a bet, the agent either wins or loses. In the context of most everyday decisions, however, the agent must consider a mess of projected goods.
2. The distinct projected goods are often mutually dependent, such that the likelihoods of the respective realizations of certain of the projected goods are undefined until certain others of the projected goods are either realized or not.

For this reason, we cannot take the precise mathematical formulation of expected value too seriously when we consider how the agent chooses between prospective applications of his will. Another obvious complication to applying the formulation to the context of everyday decision-making is that evaluations of the good and assessments of likelihoods in that context are not quantifiable, but we may simply take this to be a consequence of the inherent vagueness of the decision-making process in everyday situations.

13. 2.21.37

14. 2.21.38

15. 2.21.63

16. 2.21.66

17. 2.21.70

Determining Principles of the Will: Reason and Desire in Kant's Theory of Action

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Much has been said about ethics proper in Kant's ethical theory, but there has been comparatively little discussion on his underlying theory of action. To be sure, Kant thinks that the good and free will hinges only on reason. Nonetheless, it would be a mistake to think that we can safely ignore any role desire might have in his theory of action. If anything, Kant acknowledges the practical relevance of desire for the imperfect will, one that we as humans share. Recognizing this, I think an in-depth and critical examination of how reason and desire influence the will, and in particular, the free will, is in order. In this paper, I set out to do just this. First, I present Kant's account of the will and how it acts on the basis of maxims in accordance with a determining principle. Next, I discuss the implications of his theory of action on freedom and morality. Since the free will acts only on laws that it legislates for itself and subjects itself to, its determining principle is reason rather than desire or inclination. But in fact, the same will acts on the basis of the moral law, which is what morality consists in. Finally, I explore two concerns about reason and desire that arise from this account. In the first place, I investigate what the role of desire is in the good and free will, in light of the fact that such a will has reason, not desire or inclination, as its determining principle. And in the second place, I delve more deeply into the tension between reason and desire by converging on the question of what distinguishes reason from desire, if there is a distinction between them at all.

We can find most of Kant's theory of action in his *Critique of Practical Reason*, the *Metaphysics of Morals*, and the *Theory of Religion*. Central to his theory of action is the *will*, which is the causality we assume of all rational beings (*Critique of Practical Reason* 120-121). It is the capacity to act based on practical principles in accordance with a determining principle, especially reason (35). At any point in time, the will's *principle of determination* ("ground of determination") is either reason itself or something other than reason, such as desire or inclination. Borrowing no more from his metaphysics than is necessary, the will is in the *noumenal world*, which is the rational world in which we conceive of ourselves as subject to the laws of reason. *Reason*, which is transcendent when it plays a merely speculative role, as in pure reason, but immanent when it is an efficient cause, as in practical reason, alone resides in the noumenal world. The noumenal world stands in contrast to the *phenomenal world*, which is the empirical world in which we conceive of ourselves as subject to the laws of nature¹. For the most part, *desire* or *inclination*, which is defined as habitual desire, resides in the phenomenal world.

To complicate things, Kant distinguishes between two narrow senses of the will (265-268). In both senses, the will is founded on the *faculty of desire*, which is the capacity for desire ("the faculty of being by means of one's ideas the cause of the objects of these ideas")². One of these two senses also relies, in particular, on the *faculty of doing as we please*, which has desire as its determining principle. Whereas the *elective will* (*Willkühr* [*arbitrium*]) is the faculty of doing as we please combined with the consciousness of the capacity to actualize an object of desire, the *rational will* (*Wille*) is simply the faculty of desire whose inner determining principle is reason³. The elective will, on the one hand, is

the faculty of desire in relation to action, and is determined by a motive (“spring”) for action. The rational will, on the other hand, is the faculty of desire in relation to what determines the elective will, having itself no determining principle. It is directed only to the law, not action, and is in fact practical reason itself. Unfortunately, this distinction is far from clear, and has as a result been the source of some debate. Fortunately, Henry Allison provides a much-needed clarification here that will be particularly helpful when I discuss freedom of the will later in this paper (129-133). According to Allison, both the elective will and the rational will constitute a single unified will in the broad sense. In the narrow sense, the elective will is the executive part of the unified will, while the rational will is the legislative part. Understood this way, the rational will, as reason itself, presents the elective will with laws, which either command or prohibit certain actions. The elective will then is the part of the will that acts by choosing. Whereas the rational will concerns itself with legislation, the elective will concerns itself with actions themselves and maxims that incorporate actions. Taken together, the rational will provides the elective will with a norm that the elective will chooses to either accept or reject. If the elective will accepts a norm, then the norm becomes a determining principle of it.

In general, the will operates on the basis of maxims, where a *maxim* is a practical rule which proceeds from the elective will and contains a determining principle of the will (105-108).⁴ As a subjective principle of action, a maxim has the form “Perform action A in circumstance C for the end E,” where the end E is the motive for performing the action. A maxim has both form and content, each able to provide a determining principle of the will (114-115). On the one hand, the *form* of a maxim is universal to all maxims and is a determining principle of the will through reason alone. So reason as a determining principle of the will is different in kind from all other such principles. On the other hand, the *matter* of a maxim is the end or motive for performing an action, and can thus also provide a determining principle (41-42). Crucially, the determining principle of the will distinguishes between different kinds of maxims. When a maxim determines the will by its matter, the determining principle involves an object of desire from which we derive pleasure or pain, as in self love and private happiness. As a material principle of action, such a maxim is called an *empirical maxim*. But because it is purely subjective, an empirical maxim is valid only for an individual will and can never be a *law*, which must be an objective maxim (123). Instead, only a maxim that has reason as the determining principle is valid for every will. Only such a maxim can be a law, and in particular, a moral law. Unlike natural law or physical law, which proceeds from the phenomenal world, the *moral law*, which proceeds from the rational will in the noumenal world, is a maxim adopted as a law by the elective will (114, 120-122). As a formal principle of action, the moral law is valid for every will. In contrast to an empirical maxim, the moral law as an objective maxim determines the will by its form alone (167-175). Reason, upon which the moral law is based, also produces *respect* for the moral law as a moral feeling, which means that the moral law itself becomes a motive for action⁵. When the motive for performing an action is the moral law itself, then we perform the necessary action not merely according to duty, but also from duty.

Two closely related notions rely crucially on the roles of reason and desire in the will: freedom and morality. Freedom, and in particular, freedom of the will depends on the

theory of action just outlined. *Freedom of the will* refers to freedom of the elective will, since the rational will cannot be free or unfree. Accordingly, the free will is just the *autonomous will*, which is determined by reason alone (122). The free and autonomous will is free in both the negative sense and the positive sense: it is negatively free in that it is free from any determining principle of the phenomenal world, such as desire or inclination, and it is positively free in that it determines itself noumenally. In such a will, every maxim is adopted as a law to which the will is subject. This will both legislates its own laws and then subjects itself to those same laws. Under the framework of the elective will and the rational will I outlined earlier, we can understand this as follows. As the determining principle of the elective will, the rational will legislates by making objective maxims the supreme law. Thus, reason initiates such legislation, which has two components, a law and a motive (274-275). First, the law makes an action that conforms to it a duty by incorporating it into an objective maxim. Second, the motive associates the necessary action, or duty, with the determining principle of the elective will. Taken together, the law makes duty itself the motive for performing an action. Since reason is its determining principle, the free and autonomous will is itself a cause: it causes objects in the phenomenal world (116-117). This stands in sharp contrast to the unfree and heteronomous will, which is, on the other hand, an effect: it is caused by objects in the phenomenal world. As such, it relies on a determining principle such as desire or inclination. Whereas the animal elective will is the elective will determinable only by inclination, the human elective will is the elective will that is influenced by but not necessarily determined by inclination⁶. The human elective will is in this sense impure, but nonetheless can be determined by the “pure will,” which is, presumably, the rational will.

Naturally, two related questions arise from this conception of free will. First, can the will ever fail to act freely?⁷ Second, can the will act without acting on the basis of a maxim? I think Kant’s response to both of these questions is fairly straightforward. To answer the first question, we need to clarify the meaning of the term “act,” which refers to two things. In the first case, it refers to the adoption of a maxim by the will, and in the second case, it refers to an action itself. So we need to break this first question into two parts, namely “Can the will *not* choose to accept or reject a maxim” and “Can the will fail to perform an action freely?” Incidentally, Kant’s answer to both is “No.” In the first place, Kant maintains that although the will is free to accept or reject a maxim, it must do one or the other. The will is in this sense forced to take a side. It cannot be indifferent to the adoption of a maxim. In the second place, an action is always performed freely in that it is itself undetermined by any cause other than the will. While the will itself can be free or unfree, its actions are always performed freely. As such, we judge its actions to be an “original exercise of the elective will.”

This leads us on to the second question, the answer to which, as far as I know, Kant does not state explicitly. But if the will can act (in the sense of performing an action) independently of any maxim, then it follows that it can act without specifying a circumstance in which to act or even a motive for acting. In an everyday sense, we understand an involuntary action, such as a reflex action, to be precisely this kind of action. There are no *specified* circumstances in which I can redden my cheeks (even if

they do in fact involuntarily redden under certain circumstances, as when I am embarrassed). Similarly, I have no motive to act when my cheeks redden, or at least not one that I am conscious of. An involuntary action as such seems to be an action that cannot be incorporated into any maxim. But Kant's theory of action seems to have no place for such an action. As far as his account is concerned, an involuntary action is not an action at all. So the will cannot perform an action alone without incorporating it into a maxim (Morrisson, 23). Recall that the elective will relates an action with a *motive*. In the jargon of contemporary theory of action, Kant supposes that all actions are *intentional* actions directed towards ends (Wilson 2007). This account is thus consistent with the rest of Kant's philosophy, especially his account of both moral and natural teleology (Ginsborg 2005). Taken together, the freedom to adopt maxims, the freedom to perform actions, and the fact that actions are always incorporated into a maxim, makes room for moral accountability. After all, it makes little sense to attribute moral worth to maxims that we do not choose to adopt or to actions that we do not perform freely. Intuitively, we attribute moral worth to a person who volunteers at the soup kitchen because she could have chosen not to do so, but nonetheless, freely chooses to do so. In short, freedom is what makes morality meaningful at all.

For Kant, morality consists in the will's free adoption of the moral law as a motive for action. This moral law can be formulated as the following: "Act so that the maxim of thy will can always at the same time hold good as a principle of universal legislation" (119). The moral law demands that the will act only on universalizable, objective maxims that determine the will through reason. Strictly speaking, only an act—the adoption of a maxim or the performance of an action—has moral status. In particular, the moral worth of an act depends entirely on the will's determining principle or motive for action. Of course, an action can conform to the moral law, as when one acts according to duty, without being performed for the sake of it. But an action has genuine moral worth only when it is performed both according to duty and from duty. And, as mentioned earlier, to act from duty is to act out of respect for the moral law, such that the moral law itself is the motive for action, and the associated determining principle is reason.

Let us pause for a moment to retrace our steps. We now have a general account of how reason and desire influence the will. Reason alone determines the will noumenally, whereas desire or inclination determines it phenomenally. Taken together, the way in which reason and desire motivate the will to act is to be its determining principle. While reason and desire can both *influence* the will, what seems to matter most is which one *determines* it. This means we can understand a determining principle to be a causality of the will. However, there are still two concerns about the respective roles of reason and desire that I want to address. The first concern is whether the will's determination by reason requires the complete rejection of desire. Essentially, this concern asks "Can the will be free if desire influences it?" The second concern addresses the eerie relationship between reason and desire I pointed out in an earlier footnote but have so far avoided. This concern asks "Given that reason and desire seem to be such polar opposites, what makes them different, if they really are different?"

In addressing the first concern, it is clear that morality consists in the determination of the will by reason alone. But what is less clear is what this requires of desire. A common criticism of Kant is that he seems to require the complete rejection of every desire, lest it in any way weaken reason as the determining principle. Kant notes that the “least empirical condition would degrade and destroy [reason’s] force and value” (112). However, I think the criticism that Kant requires us to be cold-hearted robots is misguided. Critics are correct to point out that reason prescribes the avoidance of any motive that negatively influences the will’s strict adherence to reason (164-171). Indeed, Kant says that it is even “dangerous” to allow other motives to cooperate. The free will not only does without inclination, but actively checks whether inclination opposes the moral law, and rejects any sensible impulse. The removal of any resistance to reason or the moral law strengthens its own influence. However, I think the key point to note is that the will’s mastery of desire and inclination implies only disregard for them, not complete independence from them. Provided that desire or inclination does not determine the will, its influence leaves intact the will’s freedom and goodness. We can mediate the tension between reason and desire by taking no account of desire, without having to renounce it. More importantly, freedom and goodness of the will hinge on the subordination of desire to reason (154-155). So long as reason subordinates desire to it, and not the other way around, the presence of desire poses no threat to the free and good will. This understanding thus resolves any remaining confusion about moral worth, and in fact, clarifies a mistake often made. According to Kant, a big mistake is to attribute moral worth to what seems good, which is often associated with desire and its associated pleasure (148-149). But the present understanding suggests that far from moral worth deriving from the good, it is the good that derives from moral worth.

Nonetheless, the role of desire is not quite as clear cut as it may seem. On the one hand, it seems as though desire for the most part is pushed aside, since reason, as expressed through the moral law, demands that it alone determine the will. On the other hand, Kant suggests that reason is itself a desire, and in particular, a higher desire (109-112). I find this suggestion extremely surprising—even shocking—not because there is a distinction between higher and lower desires, but because reason is a desire at all. To be sure, there is a clear distinction between reason as a desire in the noumenal world and empirical desire in the phenomenal world. So we cannot compare empirical desires or empirical maxims determined by such desires based on the *kind* of desire they are. Instead, we can only compare them based on the *degree* to which they are “agreeable,” with such criteria as the magnitude of the pleasures we derive from those desires. Clearly, a lower desire cannot determine the free will. But a higher desire, namely reason, is not only consistent with, but even required to determine the free and good will (112). Further, desire is connected with pleasure, the susceptibility to which is feeling (Kant, *Critique of Practical Reason* 265). The free and good will has respect for the moral law, which is a moral feeling. And pleasure, as a feeling derived from desire, plays a role too. Kant allows for intellectual pleasure, which derives from reason, as a “sense-free inclination” (however, it is not, strictly speaking, from inclination). But all this suggests that reason and desire are not so different after all. Reason cannot conflict with every desire if reason itself is a desire to begin with.

On the face of it, the identification of reason as a desire is unacceptable. Philosophers from Aristotle to Hume have always drawn a sharp distinction between them. One might be tempted to conclude that Kant abuses terminology such that reason is only a desire in a non-literal sense, and that the identification is, strictly speaking, inaccurate. However, I argue that this identification becomes much more plausible when we reflect just what the will is, to the extent that it even follows from Kant's conception of the will. Fundamentally, the faculty of desire is constitutive of the will. So the distinction between reason and desire is more nuanced. We need to distinguish between desire in the broad sense and desire in the narrow sense (Morrisson, 28-34). As Iain Morrisson suggests, desires in the narrow sense differ from one another "on the basis of their origins, the frequency with which they are experienced, and the kinds of consciousness that accompanies them" (29). However, both reason and desire are desire in the broad sense: "they are also identical in that they are [both] ways of bringing things into existence." I think this characterization is basically correct. Specifically, I think that a crucial distinction is that while empirical desire as a lower desire is phenomenal, reason alone as a higher desire is noumenal. But I suggest further that yet another criterion may be at play, that of dependence on time. This criterion distinguishes reason as a higher desire from lower desire because reason determines the will independently of time, that is, at every point in time, whereas inclination or impulse as lower desire determines the will dependent on time. Inclination depends on time in that it is *habitual* desire, and impulse depends on time in that it arises in the spur of the moment for only a short period of time. I think that this criterion fits well with Kant's own characterization of reason as an absolute and unconditional determining principle, but of lower desire as a contingent and conditional one. Thus considered, the naïve distinction between reason and desire is, upon closer examination, a false dichotomy. Though, to be sure, there is much equivocation of the term "desire." To address the analogous criticism of the association between morality and feeling, Kant has this to say: "even though respect is a feeling, it is not one received through any outside influence but is, rather, one that is self-produced by [reason]; hence it is specifically different from all [other feelings]" (14). Further, "when reason of itself determines the will..., it is really a *higher* desire to which that which is pathologically determined is subordinate" (112). So in fact we should do the exact opposite regarding the initial temptation to regard the identification of reason as a desire an inaccurate one that holds only in a non-literal sense. By understanding that reason is itself a desire in the strictest sense, and contrasts with desire insofar as the contrasting desire is a lower desire, we mediate the tension between reason and desire.

In conclusion, I have presented a less controversial, general account of reason and desire in Kant's theory of action, as well as a more controversial, specific account of how they determine the will. The general account maintains that the will acts on maxims, which specify the performance of actions under certain circumstances for specific ends. The will adopts maxims based on its determining principle. When desire or inclination determines the will, the will adopts only subjective maxims. Such a will is unfree, although it is free to perform actions and adopt maxims that incorporate them. In contrast, reason determines the free will. Such a will adopts objective maxims as laws in accordance with the moral law, and acts both according to and from duty. In the more specific account of reason and desire, I addressed two concerns that arise from Kant's theory of action. In

addressing the first concern, I concluded that although reason as the determining principle of the will requires independence from the influence of desire, it does not require the complete rejection of it. But I reached a more general, and strictly speaking, correct, conclusion in addressing the second concern. In investigating the distinction between reason and desire, I concluded that reason and desire are both desire in the literal sense. Understanding them as both desire in the broad sense, there is no genuine conflict between them. Rather than arising from reason and desire per se, I suggested that the real conflict arises between reason as a noumenal, higher desire and empirical desire as a phenomenal, lower desire.

Notes

1. A caveat here would be to note that it is unclear whether these two worlds are two ontologically distinct worlds or merely two aspects of the same world.
2. In my translation by Thomas Kingsmill Abbott, it is actually called the “faculty of appetite” in the *Introduction to the Metaphysics of Morals*, but “faculty of desire” in the *Critique of Practical Reason*. However, I follow the lead of Henry Allison in *Kant’s Theory of Freedom* and Iain Morriison in *Kant and the Role of Pleasure in Moral Action* in identifying them with one another. I stick with the “faculty of desire” moniker for the sake of clarity.
3. This suggests an eerie relationship between reason and desire, one that is admittedly quite surprising, and even shocking. I return to explore this relationship in more detail later in the discussion.
4. Strictly speaking, a maxim is a subjective principle of action, whereas a law is an objective principle of action. However, I generally refer to any principle of action as a maxim to avoid confusion with a principle of determination of the will.
5. *Feeling* is the capacity to have pleasure or pain, and the actualization of this capacity is *pleasure* (108-109). While a *practical pleasure* is pleasure derived from an object of desire, an *intellectual pleasure* derives from reason. This is the second time we encounter a relationship between reason and desire, so this only increases the sense of urgency in addressing it.
6. There seems to be an inconsistency in Kant distinguishing between the human and animal wills. After all, only rational beings can have a will. Either Kant now suggests that animals each have a will too, or he suggests that the will of rational beings can somehow degrade into a mere animal will when it is determinable only by inclination, but it is not clear at all how this could ever happen. Both of these suggestions are problematic.
7. Note that this is a distinct question from “Can the will itself fail to *be* free?” As I discussed earlier, the will can, of course, be free (and autonomous) or unfree (and heteronomous) according to its determining principle.

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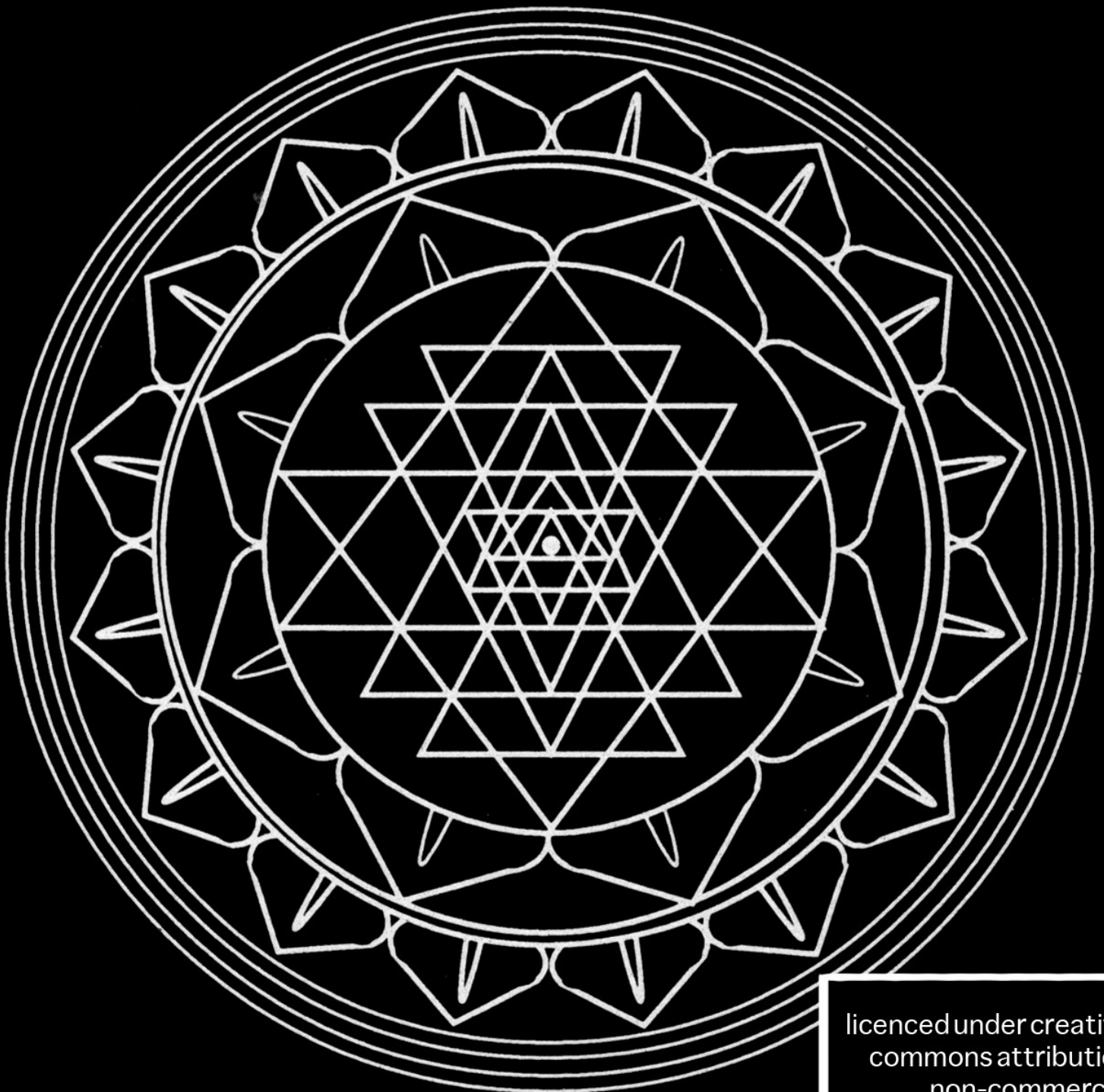
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