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The Journal of Mind and Behavior (JMB) is dedicated to the interdisciplinary approach within psychology and related fields. Mind and behavior position, interact, and causally relate to each other in multi-directional ways; JMB urges the exploration of these interrelationships. The editors are particularly interested in scholarly work in the following areas: □ the psychology, philosophy, and sociology of experimentation and the scientific method □ the relationships among methodology, operationism, and theory construction □ the mind-body problem in the social sciences, psychiatry and the medical sciences, and the physical sciences □ philosophical impact of a mind-body epistemology upon psychology and its theories of consciousness □ critical examinations of the DSM-biopsychiatry-somatotherapy framework of thought and practice □ issues pertaining to the ethical study of cognition, self-awareness, and higher functions of consciousness in nonhuman animals □ phenomenological, teleological, existential, and introspective reports relevant to psychology, psychosocial methodology, and social philosophy □ historical perspectives on the course and nature of psychological science.

JMB is based upon the premise that all meaningful statements about human behavior rest ultimately upon observation — with no one scientific method possessing, a priori, greater credence than another. Emphasis upon experimental control should not preclude the experiment as a measure of behavior outside the scientific laboratory. The editors recognize the need to propagate ideas and speculations as well as the need to form empirical situations for testing them. However, we believe in a working reciprocity between theory and method (not a confounding), and in a unity among the sciences. Manuscripts should accentuate this interdisciplinary approach — either explicitly in their content, or implicitly within their point of view. (Note: we typically do not publish empirical research.)

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Detecting Animal Deception

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By witnessing displays of deception, experimenters may be able to determine whether contemporary (alive today) non-human animals possess a theory of mind. Higher-order deception, in particular, requires the deceiver to be capable of second-order intentionality. The purpose of this essay is to demonstrate the inherent difficulty in scientifically determining whether animals employ higher-order deception. After examining such difficulties, I provide an explication of higher-order deception as “cause-causation with a mental state.” This explication will allow us to better determine whether animals are capable of employing such deceit.

Keywords: deception, theory of mind, animal cognition

The use of deception seems to have played a significant role in the evolution of the mind. The animal that is better able to deceive those in his social group may also be better able to reproduce and gain resources. Thus, the smart individuals that detect the deceit (and perhaps employ counter-deception) will gain a competitive advantage. These individuals will be able to end their former exploitation, thereby furthering their own genetic success, perhaps through deceptive acts of their own. This struggle between deception, detection, and counter-deception may have engendered a “cognitive arms race,” in which a powerful trait for genetic success is to be slightly more intelligent than the conspecifics that share your lot (Tomasello and Call, 1997).

I do not doubt that the ability to deceive (and to detect deception) would engendered such an “arms race.” What is suspect, however, is the extent to which contemporary (alive today) non-human animals are able to deceive. This, as we will see, is a terribly tricky thing to determine. There is an inherent difficulty in scientifically establishing whether animals employ higher-order deception.

I would like to thank Robert Schroer, Radu Bogdan, Raymond Russ, and two anonymous referees for their helpful comments on earlier versions of this essay. Correspondence concerning this article should be addressed to Shane D. Courtland, Ph.D., University of Minnesota, Duluth, Department of Philosophy, 1121 University Drive, Duluth, Minnesota 55812. Email: scourtda@d.umn.edu

Why concern ourselves with higher-order deception? The goal, *ultimately*, is to find evidence that animals possess a theory of mind. According to Heyes, an “animal with a theory of mind believes that mental states play a causal role in generating behavior and infers the presence of mental states in others by observing their appearance and behavior under various circumstances” (1998, p. 102). Currently, there is a significant and intransigent divide: some theorists claim that animals possess this ability, while others remain skeptical.¹

The goal of this essay is not to defuse or overcome this divide. Instead, it is to examine the difficulties that are incumbent upon one particular method of ascertaining if animals possess a theory of mind: establishing whether they employ higher-order deception. Since higher-order deception presupposes a theory of mind, evidence of such deception would, *ipso facto*, constitute evidence for an animal theory of mind. As this essay will attest, there are significant conceptual quagmires that must be bypassed in order to successfully employ such a method.

Before proceeding, it is important to acknowledge two caveats to this work. First, this essay is primarily concerned with the conceptual issues that arise when determining whether animals are able to employ deception. It will not focus on the actual, empirical studies that have been conducted. This does not, however, render this work irrelevant or superfluous. Any study that has been conducted, or will be conducted in the future, should address the arguments in this essay. Second, I am not claiming that the detection of higher-order deception is the only way of ascertaining whether animals possess a theory of mind; rather, it is one of many. As Heyes (1998) writes, “The most commonly cited evidence in support of this view comes from studies of imitation, self-recognition, social relationships, *deception*, role-taking (or empathy), and perspective-taking” (p. 102, emphasis added). It is quite possible that we might determine that animals possess a theory of mind through other means (e.g., studies of imitation).

¹Robert Lurz (2011) emphasizes this divide. He writes the following:

For over thirty years now, there has been a sustained and heated debate over the question of whether any species of nonhuman animal is capable of attributing mental states. The field is presently divided between those who claim that there is empirical evidence to support the hypothesis that some animals are mindreaders and those who deny this. . . . [T]he debate has stalled in that both sides are content with a handful of arguments that, I believe, fail to support the rather strong claims that they are used to make. Contrary to what either side holds, the question of whether animals are mindreaders is in no way a settled matter. (pp.1-2)

Likewise, in Heyes (1998), this divide is heavily stressed. She writes, “In spite of nearly 20 years of research effort, there is still no convincing evidence of theory of mind in primates” (p. 102). Just as there have been many who have claimed that animals can possess some semblance of a theory of mind (see, for example, Braüer et al., 2004; Byrne, 1994; Call and Tomasello, 2008; Cheney and Seyfarth, 1990, 1992; de Waal, 1991; Emery and Clayton, 2009; Gallup, 1982; Hauser and Wood, 2010; Jolly, 1991; Whiten and Byrne, 1991); others remain skeptical that animals have satisfactorily demonstrated this ability (see, for example, Penn, Holyoak, and Povinelli, 2008; Penn and Povinelli, 2007; Povinelli, 1996; Povinelli and Eddy, 1996; Povinelli and Vonk, 2006; Premack, 1988; Vonk and Povinelli, 2006).

The Concept of Deception

Strategic Deception

Robert Mitchell (1986) provides a clear and comprehensive method for describing different notions of animal deception. He divides deception into four levels.² Each consecutive level assimilates the characteristics of the level before it.

Mitchell's first level of deception applies to some animals' ability to mimic the appearance or actions of other animals. Defining this level, he writes, "At this level, the actions of the receiver have no influence on the deceptive actions of the sender, at least during the lifetime of the sender. However, the actions of the receiver may have an effect on the population of the sender's species such that more deceitful senders will have greater representation in subsequent populations than will less deceitful senders" (1986, pp. 21–22). There is a certain rigidity in this notion of deception; the animals that employ it seem to be "programmed" to "always do p" or "always look like p." In other words, the deceptive act never changes and thus remains constant for the duration of the animal's life. Changes would arise via selective pressures. The species might alter (over a period of many generations) its deceptive act or appearance due to deleterious selective pressures and/or beneficial adaptations (Mitchell, 1986).

There are many examples of this level of deception in nature. First, there are butterflies with wingtips that look like the heads of their predators. Many predators are deceived by such an appearance, a mistake that allows the butterfly to escape predation. Second, there are some plants whose parts mimic the appearance of the reproductive organs of a particular type of bee. A confused male bee might mistake this part of the plant for a female. When the bee attempts to reproduce with what it believes to be a female, the bee instead pollinates the plant (Mitchell, 1986).

The behavior associated with Mitchell's second level of deception is more flexible than the first. Describing this level, he writes, "At this level, an organism's acts can still be described as programmed, but they appear programmed to the organism's registration of acts of another organism" (p. 24). The organism is still programmed by selective pressures to elicit a particular appearance. However, we get a conditional structure: "do p given that q is the case" (where p and q are actions of the sender and receiver, respectively)" [p. 24].

At the second level, the animal's actions are more flexible than they were at the first level because the animal is not forced to constantly engage in deception. However, once the organism is stimulated in a certain fashion (q), it invariably conducts the deceptive act (p). Take, for example, the angler fish. This fish has a worm-like lure protruding from between its eyes. However, the lure only moves

²In a later work, Mitchell (1993) employs different levels. Instead of four levels, his new account contains six. In addition, some of the contents of the various levels have been altered.

once the fish's prey is present. The prey is tricked by the lure, and the angler fish gets a meal. This is not a maneuver that the angler fish learns; it is a behavior that all members, *ceteris paribus*, of the species possess (Mitchell, 1986).

Complex Deception

The third level's key difference is that it requires learning on the part of the deceptive organism. Mitchell (1986) writes that the "organism's actions are the result of an open program, but this program, unlike that of level two, can be modified by the results of the actions of, and by the observations of, the organism" (p. 25). As with the second level, this level requires the registration of some outside event (e.g., observance of another's action). In the third level, however, the organism's program is more flexible than it was in previous levels. Here, the organism acts under a program such as the following: "do any action p given that this p has resulted in some desired consequence q in our past" (p. 25). Essentially, the organism learns (via repeated trials) that a particular deceptive act yields a desirable outcome.

Since the third level involves learning, it must, unlike the previous levels, contain a time component. In order to learn (via trial and error, observation, instruments, etc.), the organism must be able to recognize the connection between the particular act (p) and the desired effect (q). Granted, some organisms are able to learn faster than others. Thus, for these organisms, the time it takes to learn the connection is shorter. An important rule of thumb, however, is that if an organism takes a sufficiently long period of time to adopt a particular deceptive act (perhaps months, years, etc.), it is probably employing trial-and-error learning; via differential reinforcement, the organism comes to understand that some acts "pay" better than others (Hauser, 2000; Tomasello and Call, 1997).

There are many examples of the third level. First, after a period of time, a dog might learn that it will be pet more often if it appears to have a hurt foot. When around humans, such a dog will limp and then gain the reward for its deceptive act (Mitchell, 1986). Second, a certain primate may get attacked every time it attempts to mate while a rival is in sight. After some time, the primate could develop a strategy in which it would only attempt to mate while the rival is not in sight or if the rival's line of sight is precluded by a rock or some other object (Tomasello and Call, 1997).

An important point to understand about the third level is that it does not require that the deceptive animals (senders) have any beliefs about the belief states (second-order beliefs) of those they are attempting to deceive (receivers). The sender is merely attempting to bring about a state of affairs in the world; it wants to elicit a desirable effect by performing the deceptive act (Mitchell, 1986). It does not, however, understand that it is manipulating the mental states of the deceived (receiver), nor does it intend to.

Animals that are merely conducting level-three deception do not have to be described as second-order intentional systems. Dennett (1978) defines a second-order intentional system as “one to which we ascribe not only simple beliefs, desires and other intentions, but beliefs, desires, and other intentions about beliefs, desires, and other intentions” (p. 273). To think that a particular animal possesses second-order intentionality, we must ascribe to it mental states like “S believes that T desires that p, S hopes that T fears that q, and reflexive cases like S believes that S desires that p” (Dennett, 1978, p. 273). The behavior that is witnessed with level-three deception does not warrant a second-order ascription.

The problem, then, with third-level deception is that the animals who engage in it view the receiver merely as an object. Granted, this object (as viewed by such animals) is quite complex: it is animate and behaves in a complicated fashion. However, there is nothing about these animals that forces us to ascribe beliefs about the receiver’s mental states to their behavior. A deceptive act cannot be classified as higher-order deception until the sender deliberately attempts to manipulate the mental states of the receiver.

The fourth level of deception, what I refer to as higher-order deception, is separated from the other levels by two prominent features: *metaprogramming* and the *intention to deceive*.³ Mitchell (1986) writes the following:

The fourth level of deception involves an open program which is capable of programming and reprogramming itself based upon the past and present actions of the organism being deceived. . . . [A]t this level of deception the sender actually *intends to deceive* the receiver. When the sender has a deceptive strategy which is malleable with respect to the known current behavior of the receiver and which takes into account the receiver’s past behavior, and when the sender’s actions appear intelligible only if the animal is described as having planned the deception prior to its actions (in contradistinction to its having planned to manipulate, as may be true for level-three deceivers), then one has an example of intended (or self-programmed) deception. (p. 26)

Like the third level, the fourth level contains an open program. What is added, however, is metaprogramming (thinking or planning): the ability to have representations about representations. In other words, the sender is able to “mentally rehearse” various plans of action and, in light of this rehearsal, is then able to decide which plan to enact (Bogdan, 2000, p. 15). Another important feature is that the sender can represent the receiver as having particular mental states

³As mentioned above, Mitchell (1993) provides a modified list of these levels in a later work. In that list, there is a level that precedes higher-order deception. At this new level, the animal is described as possessing the ability to employ pretense and imaginative planning. Mitchell writes, “Given that imaginal pretense is necessary for intentional deception, organisms should exhibit evidence of pretending to be another before we can assume that their deceptions are intentionally deceptive” (pp. 72–73). I agree that pretense/planning is a necessary condition for higher-order deception (intentional deception). As I will demonstrate in the section discussing deception and cause-causation, I view level-three deception as a “broad church.” It can include, in my view, pretense/planning and even some instances of causal knowledge.

(Mitchell, 1986). The receiver's states, then, become the target of the sender's manipulation. The sender can thus be described as intending (by means of a deceptive act) to instill false beliefs (via playing upon desires, playing upon hopes, etc.) into the receiver. Therefore, with this level of deception, we refer to the sender as having "intentionally deceived."

Level-four deceptive acts lack the rigidity found in lower levels. In the first two levels, the deception is invariably conducted by every member of the species. These animals seem to be reflexively conducting particular deceptive acts. Fourth-level deception, on the other hand, requires that the sender "planned the deception prior to its actions" (Mitchell, 1986, p. 26). In other words, fourth-level senders are "free" to engage in various forms of deception. They, however, have the innate *capacity* (via metaprogramming) to engage in deception. These deceivers can only be described, in a parsimonious fashion, as having "chosen" a particular deceptive act as the most efficacious (according to the deceivers) method to meet the deceivers' ends.

Unlike those in the previous three levels, fourth-level senders are able to represent the mental states of the receiver. Level one, two, and three senders treat the receiver as a complex object that is to be manipulated in order to achieve the sender's ends. In essence, the sender does not appear to treat the receiver as though it has any mental states at all. With fourth-level deception, the sender is directly trying (intending to deceive) to manipulate the mental states of the receiver. The senders, on this level, are described (at the very least) as being second-order intentional systems.

Humans, most would contend, are the paradigmatic example of entities that engage in level-four deception. An open question, however, remains as to whether any other animal is capable of this kind of deception. It is this question that the remainder of this essay will focus on. I will not, however, answer the question via the presentation of new empirical data. Instead, I will discuss the difficulties that any such answer must avoid.

The Problem

Anecdotal Evidence

Often, researchers who attempt to demonstrate that particular animals can engage in level-four deception employ anecdotal evidence of deceptive, albeit infrequently observed, behavior. Instead of directly testing for level-four deception, these researchers often test other hypotheses (or, while the observation was occurring, not directly testing anything at all). They then, perhaps by chance, stumble upon behavior that seems to fit (in a *prima facie* fashion) a level-four description. Since the particular observation(s) seems to fit such a description, these experimenters then cite the observation as evidence.

Tomasello and Call (1997) cite a particular methodology, in which the central form of evidence is anecdotal. Tomasello and Call (1997) write the following:

Whiten and Byrne . . . were concerned that many primatologists had observed instances of tactical deception, *but because they were relatively isolated examples*, they were not published. A compendium of such observations might reveal some important patterns. Consequently, the two investigators contacted a large number of primatologists (mostly through membership roles in scientific organizations) and asked them for any observations they might have made over the years that implied tactical deception. They then sifted through the resulting reports (that met the basic functional definition of deception in that one animal did something and another perceived a situation wrongly as a result) and classified them in various ways with an eye to the cognitive mechanisms involved. (p. 234, emphasis added)

In this case, Whiten and Byrne were directly concerned with deception (tactical deception as opposed to primarily level-four deception) and conducted their research with that particular goal in mind. However, the actual evidence (the particular observations) used to further their research is anecdotal. The vast majority of their observations come from primatologists who were not primarily concerned with the notions of tactical deception. In fact, Whiten and Byrne were worried that these observations were so “isolated” in nature, that they might not have ever been published (Tomasello and Call, 1997, p. 234).

Irwin Bernstein (1988) harshly criticizes the anecdotal method Whiten and Byrne used to conduct their research. He writes, “It is indeed disturbing to find Whiten [and] Byrne dismissing studies in which an independent variable is manipulated. To suggest that deliberate manipulations make results suspect is to dismiss most of science without examination. . . . The plural of ‘anecdote’ is not ‘data’” (p. 247). Byrne, however, defends this type of methodology. He writes, “Nearly all of the available data on primate deception are anecdotal, in the sense that they were collected during the course of other studies, ad lib, with no easy means of evaluating frequency against any proper control. However, they are not anecdotal in the pejorative sense; they are not the casual observations of inexperienced observers, embellished by multiple retelling and rife with implicit interpretation” (1998, p. 135). Byrne then cites the following examples of acceptable anecdotal evidence (in the “non-pejorative” sense): “Goodall, 1971; Menzel, 1974; de Waal, 1982, 1986; Byrne [and] Whiten, 1985; and the records of many observers collated in Whiten [and] Byrne, 1986, and in Byrne [and] Whiten, 1990” (1998, p. 135).

Nonetheless, the use of anecdotal evidence is troubling. Of particular interest to this essay is why Byrne feels he must resort to mere anecdotal evidence. He writes, “Conversely, the rarity, spontaneity, and subtlety of tactical deception have hindered experimental analysis of the phenomenon, and little advance has been made in this direction since the pioneering work of Menzel (1974) and papers in Mitchell and Thompson (1986)” [1998, p. 136]. In essence, Byrne claims that the use of anecdotal evidence must be accepted due to the difficulty of observing

deceptive behavior. By explicating what is required in such deception (provided it truly reaches level-four deception), this essay should also show why, as Byrne claims, higher-order deception is difficult to study.

Frequent Observations

The evidence for higher-order deception may come in forms other than infrequent anecdotal observations — via numerous observations, for example. Even if this is the case, however, there are still some potential problems. For instance, if only one deceptive act is both witnessed constantly and present in every member of a particular species, it is most likely not level-four deception. When every member of a species displays the exact same deceptive behavior, it is probably an adaptation, thus most likely a level-one or level-two deception. Since I doubt that this is contentious, I will not discuss it further.

What is contentious is whether certain deceptive acts merit a level-four description — as opposed to a mere level-three description. These acts are frequently observed, but not every member of the species practices them; they, then, are most likely not innate. Also, due to the complexity of this type of deception, these acts seem to merit a level-four description. In essence, experimenters can describe this type of behavior as belonging to (at least) a second-order intentional system that is attempting to manipulate the mental states of another animal. What is problematic, however, is that experimenters have *not* precluded a plausible level-three description.

Dennett (1978) presents an example of a dog that “deceives” her master:

One evening I was sitting in a chair at my home, the *only* chair my dog is allowed to sleep in. The dog was lying in front of me, whimpering. She was getting nowhere in her trying to “convince” me to give up the chair to her. Her next move is the most interesting, nay, the *only* interesting part of the story. She stood up, and went to the front door where I could still easily see her. She scratched the door, giving me the impression that she had given up trying to get the chair and had decided to go out. However as soon as I reached the door to let her out, she ran back across the room and climbed into her chair, the chair she had “forced” me to leave. (pp. 274–275)

It seems (at least *prima facie*) that the dog is engaged in level-four deception. The dog could be attributing mental states to her owner, and then attempting to manipulate such states. We could ascribe to the dog the intention that her “master *believe* she *wants* to go out” (Dennett 1978, p. 275). By intentionally manipulating her master’s belief, the dog employs level-four deception and is able to sit in the chair.

To ensure that it is not merely a random confluence of events, suppose that this particular behavior is frequently observed. Of course, the first time it happened, the owner was truly deceived. But after that, the owner allowed the same act to occur over and over again. He went on to document the dog’s behavior. Is the

owner, provided this evidence, justified in asserting that the behavior is more than mere level-three deception?

Dennett argues, and rightfully so, that the dog ought not to be viewed as rising above level-three deception (though he does not use this term). He writes, “[The dog] may simply believe, as a good behaviorist, that she has conditioned [the owner] to go to the door when she scratches. So she applies the usual stimulus, gets the usual response, and that’s that. [The owner’s] case succumbs . . . [to] the more modest hypothesis . . . that the dog believes her master is conditioned to go to the door when she scratches” (1978, pp. 275–276). Dennett is offering a killjoy explanation. This deception does not require that the sender ascribe any mental states to the receiver. Desiring to get into the chair, the dog merely engages in behavior that will allow her to achieve her desired end. The dog, in carrying out this behavior, never has to ascribe beliefs to the owner.

The point I am advancing is that in order to ensure that the witnessed behavior is more than level-three deception (and thus level-four), experimenters must preclude the likelihood that the act was *merely learned* over a period of time (via trial and error). Certain animals, such as the dog, may have learned over time that certain behaviors yield certain responses. When desiring the response, these animals then participate in the behavior that yields that response. They would *never* have to attribute mental states to others.

To determine that an action is not merely a result of trial-and-error learning, experimenters must witness a significant variation in the animal’s behavior. For example, the dog must engage in significantly variable behavior in order to accomplish the same result. Instead of only scratching the door, the dog would have to do something like “running to the window and looking out, growling suspiciously” (Dennett, 1978, p. 276). Variation is required because it is the only thing that precludes a level-three description (or less). In order for a behavior to count as evidence of level-four deception, the only likely explanation for that behavior must be that the animal planned (ahead of time) to manipulate the mental states of those it deceived.⁴ If the behavior is not significantly variable (such as the normal behavior of an animal that is frequently observed), then a level-three description has not been properly excluded.

We should now be able to see the problem that any research regarding level-four deception must avoid. Significantly variable behavior must be witnessed in order to ensure that the animal is not merely engaging in level-three deception.

⁴Although humans are well known for engaging in planned acts of deception, I am not making the stronger claim that they only engage in planned deception (nor would I require that of animals). In sports, for example, players often employ “deceptive techniques [that] are likely to be scripted” (Mitchell, 1996, p. 833). They learn various feints and ruses that become second nature when practiced over time. We even assign names to such common forms of deception (in basketball, for example, “head fake,” “stutter step,” “the cross over,” etc.). In fact, when engaging in such frequent and repetitive acts of deception, athletes may not be giving much thought to engaging in deception — their behavior is, in a sense, automatic (Mawby and Mitchell, 1986).

However, from the perspective of the animal, significantly variable behavior may not always be in pursuit of a deceptive goal. This presents a problem: significantly variable behavior may be just a random confluence of events. The animal in question may be acting in a variant and deceptive fashion only due to happenstance. The researcher, then, must ensure that the witnessed behavior is more than merely a string of events associated by chance.

In order to provide the above necessities, the researcher must employ a controlled experiment that would allow for frequent observation of the variable (but connected) behavior. If the animal frequently performs a particular deceptive act (which would preclude a “chance” description), a likely explanation would be that the animal learned the deceptive act via trial and error, thus casting into doubt the attribution of anything higher than level-three deception. To warrant a higher ascription, we need an experiment that shows that the animal engaged in significantly variable behavior, all the while in pursuit of a particular deceptive end.

Variant Deceptive Behavior: Cause–Causation with Mental States

Cause–Causation — Recognizing Causal Relationships

To determine if a behavior fits a level-four deception, experimenters need to observe an animal frequently employing “cause–causation” while it is representing, and subsequently manipulating, a particular mental state of the animal it is deceiving. In other words, studies need to show that the sender has causal knowledge of the receiver’s mental states and that the sender is intentionally manipulating such states.

Let us examine what sort of behavior warrants an ascription of causal knowledge of an object to an animal. This object could be anything, and “knowledge” could vary from the causal knowledge of a stick to the casual knowledge of a conspecific’s mental states. What kind of observed behavior, then, provides the observer with a sufficient justification that a particular animal is able to recognize the causal properties of an object?

Radu Bogdan (2000) provides three different types of causal behaviors:⁵

(A) Agent acts → outcome

(B) Agent acts with implement → outcome (p. 45)

[C] Agent acts on → [object → desired outcome] (p. 47)
 Cause 1 → Cause 2

⁵ “→” denotes cause; “[...]” denotes “represented by the agent.”

Causal behavior (A) is present in all of the animal kingdom. According to this script, an animal moves its body, and, as a result, there is an outcome. Observation of (A) merely requires a researcher to watch an animal pursue a goal in a causal fashion. Due to its ubiquitous nature, I will not cite any examples. All that the reader has to understand is that the thing acting can be described in a “goal-pursuing” fashion (it is an agent) and that its actions (while pursuing such goals) entail outcomes (Bogdan, 2000).

It is implausible to think that every time an animal moves its body, as in (A), the animal knows that it is employing a causal relationship. Granted, an animal’s action might entail an outcome. This, however, does not provide evidence that the animal recognizes or understands that the action is connected to such an outcome. Bogdan (2000) writes, “Most species do not recognize action–outcome relations as causal. They simply act, outcomes follow causally, and the successful pattern is learned or naturally selected and wired in” (pp. 46–47). There are other plausible explanations (e.g., conditioning and hardwiring via natural selection) that account for the observed behavior. Due to the ubiquity of script (A) and the likelihood of other plausible explanations, one cannot claim that (A) provides a sufficient justification for the attribution of causal understanding (Bogdan, 2000).

Causal behavior (B) occurs when an animal uses something other than its body to bring about a certain outcome; it moves its body in conjunction with an instrument that helps it achieve its goals. For example, a rat may be trained to press a certain lever in order to get food. The instrument, in this case, is the lever. The rat acts *with* the lever in order to gain its desired outcome, food (Bogdan, 2000). Fewer animals are observed employing (B) than (A).

Although (B) escapes the problem of ubiquity, it still does not warrant the ascription of causal understanding. Bogdan (2000), referring to the example of the rat, writes the following:

The rat need not recognize that its action causally relates to an object (the lever) that causally relates to still another object (the food). The rat simply acquires a new instrumental-action pattern that causes culinary satisfaction. An instrumental action is more complex than a simple action, yet it remains tightly attached to its implement, as an extension of it. It is the rat’s action with an implement causing an outcome that is trained by the experiment, not the rat’s *recognition* that an implement acted upon causes something else. (p. 46)

In essence, the “implement” in (B) might be merely viewed by the agent (the rat) as an extension of its body (an extension of its paw). The rat may just be “habituated” to new actions that happen to involve an instrument (a lever). Since this plausible explanation remains, we are not warranted to ascribe to the rat an understanding of the causal connection between the lever and the food (Bogdan, 2000).

Causal behavior [C], on the other hand, is qualitatively different from the other two forms of causal behavior. Only [C] requires causal knowledge on the part of the acting agent. This script requires the agent to represent (in its mind) the second cause. Bogdan (2000) writes, “Cause₁ is causation produced by acting, cause₂ is the causation caused by the action in question. . . . Only [C] requires causal knowledge, because it requires the agent to represent distinctly the causation that her action causes. Most organisms are causal agents, simply because they act, but not causal knowers” (p. 47). Script [C] agents act deliberately “to cause a further causation” (p. 47, emphasis in original). The agent understands (recognizes or represents) the causal properties of the object that it is acting upon. In order to achieve a goal, the agent acts (cause 1) on an object that it recognizes (or represents) as causally related (cause 2) to such a goal. Type [C] is the causation we are interested in; it is *cause-causation* (Bogdan, 2000).

In order to gain a clearer understanding of [C], we will look at an example. Say I desire to ram another bumper car with the bumper car I am driving. It can be parsed as follows:

Agent acts on pedal → [Car 1 → Car 2 is rammed]

According to the above script, I recognize (or represent) Car 1 as causally related to Car 2. My desired outcome is to have Car 1 ram Car 2. I understand that the relationship between Car 1 and Car 2 can be enacted by pressing the gas pedal of Car 1. I press the pedal and ram the second car. The important part is the section enclosed in brackets. This denotes the point at which I recognize (or represent) the causal connection between Car 1 and Car 2.

Bogdan, in addition, presents two conditions that are intended to further distinguish [C] from (B). The first condition is *generality* — the agent is able to use the particular implement in a variety of fashions and in a variety of contexts. For example, in one instance, I may use a stick (implement) to “fish for termites”; in another instance, I may use the stick to beat a conspecific. In yet another instance, I might use the stick to lift a heavy rock. Such a variety of uses and contexts seems to imply that I *recognize* some of the causal properties of the stick. I can use the stick in different manners because I understand what the stick “does.” To demonstrate the satisfaction of this condition, we must witness the agent use the implement (e.g., a stick) in many different fashions/contexts (Bogdan, 2000).

The second condition is *separability*. When describing this condition, Bogdan (2000) writes, “The [causal] knowledge is . . . separate from the specific action utilized (e.g., which hand or finger is used) or particular type of action undertaken (say hand versus nose movement, if the hand is not available)” [p. 48]. The agent must demonstrate that it understands that the implement has causal properties that are distinct from the particular action(s) that activates such properties.

Pretend that I, similar to a chimpanzee, am termite fishing with a particular stick. To possess an understanding of the causal properties of the stick, I must know how the stick interacts with the world in a manner that is separate from me merely “bobbing” the stick with my hand. I must understand that the stick will behave in the same manner (have the same causal properties) regardless of what bobs the stick (e.g., a hand, a foot, someone else’s foot, etc.). To demonstrate the satisfaction of this condition, then, we must witness, in a variety of manners, the agent causing the particular implement to bring about the same effect (Bogdan, 2000).

Higher-Order Deception as Cause–Causation

To recap, in order for an animal to be believed to have a casual understanding of an object, it must interact with the object in a cause–causation manner (script [C]). In other words, observation of the animal’s behavior must warrant the claim that it satisfies two conditions: generality and separability. For the former, the agent is able to use a particular implement in a variety of fashions and in a variety of contexts. For the latter, the agent must have knowledge of the causal properties of the implement, separate from it being acted upon (Bogdan, 2000).

Next, I will apply cause–causation to deception, particularly higher-order deception, in which the sender is intending to deceive the receiver. The sender can represent the receiver as having particular mental states (Mitchell, 1986). These states become the target of the sender’s manipulation. The sender, then, can be described as intending (with the deceptive act) to instill false beliefs (playing upon desires, playing upon hopes, etc.) into the receiver.

The connection between cause–causation and higher-order deception can now be articulated. When particular outcomes are desired, the sender intentionally manipulates the mental state of the receiver, entailing these outcomes:

[D] Agent acts on → 1 [Mental State X → 2 desired outcome]

The brackets indicate the mental representation of the sender. The sender is modeling the mental state of the receiver (a particular representation of the receiver) and the causal connection of such a state to a particular outcome. To gain the desired outcome, the sender acts in a certain fashion (cause 1) to bring about Mental State X. The sender does this action (cause 1) because it understands the connection between X and the desired outcome (the representation of cause 2). The sender, then, can be described as intending (with the deceptive act, cause 1) to instill misrepresentations (playing upon desires, playing upon hopes, etc.) into the receiver. This is level-four deception.

Of course, to reach [D], an agent would have to possess the ability to employ some form of planning, problem solving, event anticipation, etc. At the core of this is the ability to employ imagination. According to Bogdan (2000), imagination is

the “ability to envisage alternative, nonfactual situations, whatever the manner of envisaging — motor or mental images, symbolic representations, whatnot” (p. 58). The ability to employ imagination is a necessary condition for [D]. It is not, however, a sufficient condition. An animal could have this ability yet not be a causal knower. Thus, the behavior in question could fail to reach [C] and, ipso facto, [D].

The ability both to employ imagination and to be a causal knower, though, is still not sufficient to reach script [D]. To see this, it is important to understand the shortcomings of the following script:

[E] Agent acts on \rightarrow 1 [Autonomous Agent X \rightarrow 2 desired outcome]

In [E], the sender has a causal understanding of the receiver as an autonomous agent. In other words, the sender recognizes that the receiver is a goal pursuer and an autonomous originator of causes. This recognition (and subsequent causal exploitation), however, does not warrant a level-four description. In order to reach level four, the sender must recognize more than the mere fact that the receiver is a self-caused agent. In addition, the sender must further recognize that the receiver is an autonomous agent that has representations about the world. It is the recognition and manipulation of such representations that defines level four. [E], at its best, would provide for level-three deception.⁶

Of course, in order for an animal’s behavior to be described via script [D], its behavior must indicate that it satisfies the generality and separability conditions. This is important and I cannot stress it enough: the observation of the fulfillment of the generality and separability conditions is only required to resolve an epistemic problem. This is meant to establish that a particular animal (whose capabilities are in doubt) can, in fact, engage in higher-order deception. It is possible, then, that an animal can engage in higher-order deception, all the while its behavior not showing that it has met the generality and separability conditions. We are not warranted, however, in ascribing the ability of higher-order deception to an animal until there is some record of these conditions being met.

One may be tempted to object by claiming that I am employing a double standard. After all, I would not require the observation of the generality and separability conditions in order to justifiably ascribe higher-order deception to a particular human — yet I would require the satisfaction of such conditions in the case of an animal. This double standard is justified, however, as the cases are quite different. For animals, we are looking for a genuine case of (possibly) the

⁶Level-three deception requires that the entity is capable of learning from past behavior. This ability can come in different forms, and learning it can involve planning and imaginative pretense. With more cognitive complexity, the ability to plan (and to learn via such plans) will be enhanced. Eventually, we may be warranted in claiming that a particular entity is capable of understanding causal properties, as in scripts [C] and [E]. However, an entity, in my view, has not reached level four (higher-order deception) until it is capable of a particular sort of causal understanding, via script [D].

first ascription of higher-order deception. The satisfaction of such conditions, then, is required to defuse killjoy objections. With humans, on the other hand, we have access to other lines of evidence (e.g., inferences from introspection). These other lines allow us to relax the requirement that our observations satisfy the generality and separability conditions.

Tomasello and Call (1997) provide an example of how the generality and separability conditions might be expressed in animals:

To take a hypothetical example: Suppose that a subordinate individual has been excluded from a watering hole by more dominant individuals. Now suppose, by chance, a rock rolls down a cliff leading to the water's edge and scares away the drinkers. The subordinate, far enough away not to be frightened by the rock, then precedes to drink in peace. Perhaps the same scene repeats itself a few times over the course of several weeks. From these experiences the observing subordinate may come to understand that the falling rock reliably predicts the scattering of others, but it is questionable whether it understands that the rock leads to fear in others, which then leads to their scattering. Most observers of nonhuman primates would be astounded, we believe, if one day the subordinate individual climbed the cliff and deliberately rolled the rock down toward the others to get them to scatter, since the rolling rock was not something originally produced but observed. . . . It would be even more astounding if the subordinate individual found some novel way to make its groupmates fearful and so scatter, for example, by making some other noise from behind the cliff. A creative strategy such as this would imply that it had understood that the fear of the others was the "mediating variable" (to use Whiten's, 1993, term) and that manipulating that variable in some way (not necessarily involving the rock that had led to the result previously) would also be effective. (p. 386)

The situation would fail to elicit a level-four description had the subordinate merely pushed the rock down the cliff. At best, such behavior warrants a level-three description. The animal might lack understanding of the "mediating variable." In order to warrant a level-four description, the subordinate must manipulate his conspecifics in a significantly variable fashion. If his behavior is sufficiently variable, then he probably understands the causal properties of the mediating variable (fear).

The variable behavior in the above example is an application of the separability condition. Essentially, the subordinate is demonstrating that it has knowledge of the causal properties of the implement (e.g., mediating variable, Mental State X, fear, etc.) separate from his knowledge of the implement being acted upon. The subordinate demonstrates such knowledge by activating the same outcome in different manners. Since the subordinate understands the causal properties of fear as well as the fact that fear plays a role in the behavior of the scattering conspecifics, the subordinate is able to activate the causal properties of the implement (fear \rightarrow scattering) in a diverse fashion (making a noise behind the cliff as opposed to merely rolling the rock).

It would also be simple to imagine a situation in which the aforementioned subordinate satisfied the generality condition. Essentially, the subordinate

would have to use the particular implement (mediating variable, Mental State X, fear, etc.) in a variety of fashions and contexts.⁷ Instead of merely manipulating the mediating variable to achieve an uninhibited drink of water, the subordinate would have to use the mediating variable to achieve different things at different times. For example, he might activate the mediating variable (fear) in order to protect a food source, gain access to a female, or escape from a violent conspecific. Such a variety (of uses and contexts) would imply that the subordinate recognizes some of the causal properties of fear — in other words, that he understands what fear does.⁸

Once these conditions have been satisfied by the subordinate, we can then plausibly describe its behavior via script [D]. The subordinate could be described as possessing a causal understanding of its conspecifics' mental states. This is level-four deception as cause-causation with a mental state.

Notice that by describing higher-order deception in this manner, I am better able to explicate what researchers ought to be focusing on in experiments. Essentially, researchers should aim to frequently observe animal behavior that indicates the same mental state is being manipulated in a variety of fashions and contexts. This would be a combination of two components: the frequently inferred mediating variable and the observed variations.

The variability comes via the observed satisfaction of the generality and separability conditions. In order to fulfill the former, we need to witness the agent use the particular implement (e.g., stick or mental state) in many different fashions and contexts. In order to satisfy the latter, we must witness the agent use the particular implement in a variety of manners to bring about the same effect (Bogdan, 2000). The observation of the behavior that satisfies the aforementioned conditions allows the researcher to describe the animal's behavior as higher-order deception. Of course, what I have just described is not meant to be taken as a formal experiment. It is merely meant to provide a basic idea of what phenomena we are trying to witness.

The satisfaction of these conditions requires the observation of variable behavior; however, this does not mean that such behavior is random. It is not

⁷Mitchell (1993) seems to recognize the generality condition. He writes, "But by the time one is an adult, one's interpretation of the pretense is in terms of the other's thoughts and beliefs, and the fakeout sequences can become highly variable. This finding suggests that the gorilla who faked window-slams enjoyed her game because she wanted to see if her fakes could *startle* people, not just because she wanted to see if her fakes could make the people *move* in a particular way" (p. 81).

⁸Of course, this is simplifying matters quite a bit. It may turn out that animals cognize the internal states of conspecifics in different manners than humans do. Fear, for example, may not be a unified concept — thus, for a particular animal, there may be many types/variations of fearful states. All that is required to reach [D] is that an animal possesses a causal understanding of the mental states of its intended deceptive target. The animal would, then, be employing a theory of mind to deceive. However, the content of that theory of mind might very well be different from our own. If an animal's theory of mind is too different, however, we might not be warranted in claiming that it does, in fact, possess a theory of mind. Thanks to an anonymous commentator for bringing these concerns to my attention.

as if an animal merely does things outside of its normal behavior and then researchers claim that the animal is able to commit higher-order deception. Instead, the variable behavior that is a part of the two aforementioned conditions must have a reoccurring theme. Essentially, the animal must manipulate the *same* implement in a variety of fashions, a behavior that must be constantly witnessed in order to describe it as level-four deception.

Researchers ought to observe animals for their frequent and variable manipulation of the same implement. A researcher, thus, would also frequently observe the animal manipulating the same implement to achieve its desired ends. After observing sufficient variation of such manipulations, eventually the only plausible explanation will be that the animal has a causal understanding of the particular object it is manipulating. Since this variation (regarding the same implement) would be frequently observed, it would most likely not be a mere random confluence of events.

I realize that there are additional complexities that remain regarding the study of level-four deception in animals. My discussion was not meant to resolve all of these complexities. Instead, my concern was to show (conceptually) what would be required to warrant an ascription of higher-order deception to an animal. By viewing level-four deception as cause-causation with a mental state, I have presented a first approximation of such a solution.

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Race and the Copernican Turn

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The Enlightenment is said to be an era of moral equality, but the historical evidence suggests that few men, and even fewer women, were ever actually equal. The racism and sexism evident throughout much of modern philosophy has been ignored or dismissed as unfortunate but are, in fact, relevant to central philosophical claims of the period. Despite the hope that such offensive attitudes are simply a product of their authors' personal biases, good reasons exist to believe that modern racist attitudes are as much an outgrowth of the epistemic difficulties those philosophers encountered and are, consequently, grounded in core philosophical doctrines. The Cartesian turn inward toward ideas of the mind creates a situation in which epistemic objectivity is necessarily grounded in a radical subjectivism. As a result, philosophers such as Hume and Kant find it necessary to grant epistemic authority only to those who reason according to proper methodologies, which, in turn, has consequences for moral agency. The result is that, by the end of the Enlightenment, rationality and personhood are no longer the possession of every human being.

Keywords: Kant, Hume, race

The Age of Enlightenment is also known as an Age of Equality. It is the era in which we find the first assertions of the equality of men. It is also the era in which some of the very same philosophers who argue for the universality of moral rights explicitly deny women's equality and disparage non-Whites. Well known are the principle ideas of the Enlightenment: all men (literally, men) are born equal; objective truth is obtainable; man is capable of perfecting himself through the use of reason; the path to knowledge requires freeing oneself from ignorance and superstition. This list may not be complete, but it should be familiar. What is missing, however, is an explicit statement of how narrowly these ideas apply. For example, Thomas Jefferson, the very same person who found men's equality to be self-evident, himself owned slaves. Of course, this hypocritical stance is not unique to Jefferson; in fact, it is the rule rather than the exception. Throughout the Enlightenment, many of the people who are central

in arguing the moral and political equality of men are the very same people who explicitly denigrate women and non-Whites, denying them rights and denying them the status of persons. The most egregious example is Kant, who champions the ultimate worth of each rational agent and who nevertheless speaks of “the fair sex” and of “negroes” in less than glowing terms. This repeated and pervasive disconnect is anything but accidental.

Of course, feminist philosophers have for decades been raising concerns about Enlightenment philosophical concepts. Genevieve Lloyd (1984) points out that during this period reason comes to be not simply “a distinguishing feature of human nature, but . . . an achievement — a skill to be learned, a distinctively methodical way of thinking, sharply differentiated from other kinds of thought.” She goes on to add that “something happened here which proved crucial for the development of stereotypes of maleness and femaleness” (p. 39). Something also happened which proved crucial for the development of stereotypes of race. This “something” is the modern epistemological turn inward. As reason comes to be understood as a faculty dependent only upon itself, as epistemological justifications come to be dependent solely on internal ideas and cognitive structures, the threat of subjectivism looms large. The domain of reason comes to be circumscribed so tightly as to exclude anyone conceived to be different in epistemically relevant ways. And, unfortunately, skin color (as well as having female body parts) comes to be an epistemically relevant feature, albeit inferentially. The connection between the rise of racism and the Enlightenment’s pursuit of universal knowledge and moral equality is not accidental — and between them lies the modern concept of reason.

The significance of race is surely tied to the attitudes and biases of the philosophers who develop the concept, but this significance also arises out of theoretical concerns with the subjectivism inherent in the Copernican turn. Descartes originates this turn by transforming the focus of philosophy away from the world and toward the inner realm of the mind. Kant then completes the turn and formally establishes that knowledge can be had only through very human ways of cognizing. Because this shift is well understood, I begin with merely a brief overview of its Cartesian origins and the ways in which Humean and Kantian conceptions of reason respond to its subjectivist implications. These responses hold the key to understanding why racist remarks during that time are not simply incidental to core philosophical theses. What Hume and Kant understand is that if reason can rely on nothing outside of itself, then it is either capable of justifying its own processes or it is not. Each grabs an opposite horn of this dilemma: Hume largely denies the authority of reason while Kant asserts it with a vengeance. However, with respect to race, each ends up in a similar place, defending the superiority of Whites. This happens as each makes epistemic and moral moves intended to ground objective knowledge in the subjectivity of internal ideas, but these moves also serve as a theoretical basis for their racist

attitudes. As it turns out, the theoretical ground Kant offers for his understanding of race is far more developed than is Hume's, but Hume's attitude stems equally from his core philosophical beliefs. In the end, the racist remarks of both these philosophers are tied to central philosophical doctrines developed in response to the threat of subjectivism. Even if Kant's attitude toward race is on more solid theoretical ground than is Hume's, both philosophers diminish the capacity of non-Whites to achieve epistemic and moral standing.

To make the case, I begin with an overview of the paradox created when modern philosophers place the ground of objective knowledge within a subjective realm of ideas. Specifically, I consider the responses of Hume and Kant to this paradox, arguing that the way each cuts off the threat of subjectivism provides the conditions necessary for a theoretical ground of racism. Given these epistemic concerns, I then discuss their relevance to Hume's discussion of a standard of taste. Even though his empiricism cannot establish the necessity of a racial hierarchy, he nevertheless seeks to establish a universal standard accessible only to certain sorts of people (most notably, those who are White and European). Kant, on the other hand, can and does allow for the necessary inferiority of non-Whites and non-males, arguing quite explicitly that skin color and body parts affect one's capacity to act according to principles. Finally, I consider the quite serious moral implications of the Enlightenment's epistemological concerns, namely the ways in which the concept of humanity is decoupled from the concepts of rationality and personhood. The unfortunate outcome is that the Copernican turn originated by Descartes and completed by Kant narrows the domain of personhood and restricts the application of so-called universal moral concepts such as equality and justice only to those who reason in the right sort of way.

Modernism's Subjective Paradox

During the Enlightenment, rationality comes to be an acquired skill, one that requires following a specific procedure for obtaining knowledge. To follow this procedure means that one is capable of freeing oneself from bias, prejudice, and unfounded belief, thereby assuring objective knowledge, particularly with respect to the natural world. As the spotlight of epistemology turns inward, reason requires a detachment from material and emotional aspects of the world and a rigorous commitment to understanding the logical structure of the world. The result is that individual minds become autonomous arbiters of truth, provided they follow a method that dissects and analyzes internal operations of mind according to certain rules. With the notable exception of Hume, whom I will discuss shortly, philosophers of the modern era assert thoroughly authoritative, procedural accounts of rationality as not simply a luxury but as a necessity. Why? Because at the heart of modern philosophy lies a paradox in which the path to

knowledge of the world is through an exclusive focus on the ideas in one's own mind: radical objectivity comes to be intelligible and accessible only through radical subjectivity (see Taylor, 1989, pp. 175–176). And because the origin of all knowledge is suddenly subjective, philosophers must explain how human beings come to be devoid of subjectivity. As Wittgenstein (1958, §293) was to highlight a couple of centuries later, when we each look inward toward the ideas in our own minds, we need some assurance that each of us is starting with the same ideas and procedures for relating and connecting those ideas; otherwise, we lack any basis for objective knowledge. While Wittgenstein externalizes this assurance through practices and language-games, the moderns take the individual knowing subject to have precedence in the generation of knowledge. If subjects cannot be counted on to be identical to one another in all relevant respects, then we lose any guarantee of objective knowledge. What counts as a “relevant respect” is an open question, but we all know that, contrary to their oft stated position, Enlightenment philosophers do take material conditions like skin color or body parts to be relevant to one's ability to achieve rationality.

This story of modern reason has been told and retold, as has the story of how such procedurally governed concept invokes “images of domination, oppression, repression, patriarchy, sterility, violence, totality, totalitarianism, and even terror” (Bernstein, 1986, p. 187). As postmodernists, feminists, and other critics of the Enlightenment have repeatedly argued, the Enlightenment is not all sunshine and light. The story, however, that is less well told is how this transformation in our understanding of reason motivates an exclusive — and exclusionary — account of reason. In other words, we recognize what Enlightenment reason is and we understand the destruction it wreaks for many; what is often overlooked, however, is how the very development of the modern concept demands marginalization, at least if the objectivity of knowledge is to be sufficiently defended. The question is, why?

The emphasis on subjectivity comes with a radical, if artificially conceived, skepticism. What makes Cartesian skepticism so transformative is the insistence on doubting reason itself. Aristotle may ask for a level of precision appropriate to the area of inquiry, but Descartes asks for certainty: pure, simple, and beyond all doubt whatsoever. As Étienne Gilson (1930) summarizes,

From the point of view of medieval philosophy, someone who plays the role of the *indisciplinatus* takes pride in insisting on the same degree of certainty in every discipline, no matter how inappropriate. In a word, he [Descartes] no longer recognizes an intermediary between the true and the false; his philosophy radically eliminates the notion of “the probable.” (p. 235)¹

The result is a quest for certainty that adopts an all-or-nothing approach which in turn diminishes any way of thinking that fails to achieve this peculiar kind of certainty. For Stephen Toulmin (2001), Descartes' exclusive emphasis on “the

¹Translation mine.

rigor of theoretical arguments . . . [and] the need for technical terminology based on abstractions” (p. 32) causes reason to become unbalanced. Yet Descartes needs this exclusive emphasis. Alternative procedures would undermine the confidence we can have in *our* ways of reasoning. The result is not simply that Cartesian rationality shuts down the possibility of alternative ways of thinking but that it must do so. The light of reason, which guides all our reflections, “cannot in any way be open to doubt” (Descartes, 1641/1984, p. 27).

By contrast, Greek rationality was always able to remain largely unthreatened by conceptual diversity since whatever account of the world one wanted to come up, it ultimately had to face the tribunal of an ontologically real and independent reality. The same is not at all true for the moderns. As the connection between the realm of inner ideas and the realm of objects in the world becomes more tenuous, the need for cognition to have a strictly logical order becomes more evident because we have only our own wits upon which to depend. The subjectivist implications of this leaves philosophers with two obvious choices: give up the authority of reason (i.e., Hume) or assert it with a vengeance (i.e., Kant). Hume and Kant both discern the tension between asserting infallible access to internal ideas and the necessity of grounding those ideas in a world beyond the ideas themselves. Both understand that the loss of metaphysics puts the veracity of our representations into doubt. But each responds in a different manner, and each response entails a narrowing of epistemology and value theory in ways that ultimately reflect on race. Epistemologically, Hume is entirely honest about the implications of Cartesianism for an empiricist: reason must be less an authoritative faculty and more a natural instinct. Aesthetically, Hume is less honest. When it comes to matters of taste, he seeks universal principles that are unattainable for some. Kant, on the other hand, accepts the force of Hume’s empirical arguments, but he also understands that if experience worked along Humean lines, we would have little hope of ever surmounting the problem of explaining how the world hangs together in some orderly and objective way. Thus, Hume must be leaving out something important. The authority of reason must have an *a priori* source, both epistemically and morally.

By the time Hume arrives on the scene, representational epistemologies have precious little to re-present. He recognizes that a commitment to sensation and reflection as the only sources of knowledge means that the connection between our ideas and an external world is essentially unknowable. He recognizes that even though philosophers attempt to distinguish fleeting perceptions from objects with continued existence, the attempt to do so is “only a palliative remedy” (1738/1978, p. 211). For Hume, we can never establish that our sensory impressions are grounded in stable, external objects for “it follows that we may observe a conjunction or a relation of cause and effect between different perceptions, but can never observe it between perceptions and objects” (1738/1978, p. 212). The order among our

ideas must come from internal operations of our minds. In fact, more than any other Enlightenment philosopher, Hume understands that we can't get outside the system and see what the world is like independently of what we think it is like. And this lack of outside constraint on cognition means that our justifications of epistemic norms must actually presuppose those very norms.

Again, all this is familiar and appears entirely disconnected from any sort of racist observation. Quite to the contrary, it may very well seem that a philosophical theory based on empirical principles allows for more openness to difference. After all, cognitive principles are for Hume (1738/1978) merely probabilistic: "reason must be consider'd as a kind of cause, of which truth is the natural effect; but such-a-one as by the irruption of other causes, and by the inconstancy of our mental powers, may frequently be prevented. By this means all knowledge degenerates into probability" (p. 180). He further explains that reason can offer only subjective assurances: "'Tis not solely in poetry and music, we must follow our taste and sentiment, but likewise in philosophy. . . . When I give the preference to one set of arguments above another, I do nothing but decide from my feeling concerning the superiority of their influence" (1738/1978, p. 103). Not exactly the authoritativeness Descartes had in mind when he introduced a methodological account of reason. And not exactly the words one would expect from someone who denies civilization among non-Whites. What is left out in these remarks, however, is a further commitment to the uniformity and regularity of reason and taste, which guides us through the world of experience. Even though the only assurance we can have of the universality of reason is through empirical observation, it is an assurance on which Hume ultimately relies. It is also an assurance that uneasily grounds his observations concerning race. For now, I turn to Kant.

Given the strong and thoroughgoing skepticism Hume expresses concerning the nature of reason, it is little wonder that Kant awakens from his dogmatic slumber. However, rather than reject Hume's conclusions outright, he acknowledges this powerful motivation for skepticism, then attempts to overcome it. He may consider it a scandal that metaphysics is dead, but he also understands the epistemological shift in which the governing principles of the world are henceforth to be found only within reason itself. Ultimately, what he objects to are not Hume's arguments concerning the nature of empirical knowledge but the incompleteness of these arguments in providing a satisfactory explanation for the regularity of experience. As a result, Kant seeks to reestablish the authority of reason through the discovery of a priori principles of cognition. But in removing contingency, he also lays the seeds for a much more virulent form of racism than could ever be established through empirical arguments grounded in taste or sentiment.

To reestablish the epistemic authority of reason, Kant builds an a priori foundation for Hume's a posteriori edifice. What Hume misses, says Kant, is the importance of

a transcendental structure for experience. Consider the A-Deduction of the first *Critique* (which begins at 1781/1929, p. A120). In it we are told that perceptions are appearances conjoined with consciousness and that these perceptions are atomistically isolated, requiring cognitive activity to bring them together into a “object of knowledge.” We are told that it is impossible for us to produce a connection of impressions “were it not that there exists a subjective ground which leads the mind to reinstate a preceding perception alongside the subsequent perception to which it has passed, and so to form whole series of perceptions” (Kant, 1781/1929, p. A121). In other words, the connection among perceptions follows subjective principles. Nothing in this tale of mental activity thus far distinguishes the Kantian from the Humean story. In fact, Kant’s summary reflects Hume’s claim that “there is a principle of connexion between the different thoughts or ideas of the mind, and that in their appearance to the memory or imagination, they introduce each other with a certain degree of method and regularity” (Hume, 1748/1975, p. 23). By the end of the argument, however, Kant makes a quite non-Humean declaration: the principles that allow for the connection among ideas cannot all be subjective. Where Hume offers, at best, universality through empirical observation, Kant (1781/1929) claims that we must “also [have] an objective ground which makes it impossible that appearances should be apprehended by the imagination otherwise than under the condition of a possible synthetic unity of this apprehension” (p. A121). Stated plainly: reason itself provides a necessary structure for how the world hangs together, and this necessity allows for the possibility of objective experience because it is, well, necessary. Since reason must operate according to this structure, Kant thereby dissolves the threat of subjectivism and Humean skepticism, at least in theory.

Epistemologically, this result may appear quite comforting. We need not worry that experience will be cohesive and regular because the nature of cognition itself guarantees a systematic unity. We can rest assured that nature operates according to regular principles that we can discover; after all, these principles stem from reason itself. Nevertheless, such epistemological contentment is gained at the expense of alternative conceptual schemes, a result that philosophers have, over the past century, been quite eager to point out. Less noticeable are the moral implications of such a narrow and methodological conception of reason. These implications have been, and still are, anything but comforting for those who fail to reason in the “right way.”

When it comes to morality, Hume and Kant both accept the division between reason and some variation of sentiment or desire. And they both recognize that conforming the will to moral principle is quite different from knowing the difference between right and wrong. That is, becoming moral is as much of an achievement as is becoming rational. Of course, the significance each accords these distinctions is quite different. Still, Kant and Hume do agree on one thing:

any connection between moral law and will must be shown to be necessary. Says Hume (1738/1978),

‘Tis one thing to know virtue, and another to conform the will to it. In order, therefore, to prove, that the measures of right and wrong are eternal laws, obligatory on every rational mind, ‘tis not sufficient to shew the relations upon which they are founded: We must also point out the connexion betwixt the relation and the will; and must prove that this connexion is so necessary, that in every well-disposed mind, it must take place and have its influence; tho’ the difference betwixt these minds be in other respects immense and infinite. (p. 465)

Of course, Hume rejects the possibility of such a necessary connection while Kant embraces it. In the case of Hume, passions are not conformable to reason, so morality becomes a matter not of intellect but of taste, the very same taste which lies at the heart of some key remarks on race. Reason is to be distinguished from taste insofar as “the former conveys the knowledge of truth and falsehood: the latter gives sentiment of beauty and deformity, vice and virtue” (Hume, 1738/1978, p. 294). Hence, morality and taste stand in opposition to reason; morality is “more properly felt than judged of” (p. 470). And in a line that must have made Kant absolutely cringe, “reason alone can never be a motive to any action of the will” (p. 413).

Kant, by contrast, insists that reason does guide us toward the satisfaction of our desire, if only unreliably. That is, he stands with Hume insofar as emotions can be heteronomous influences on action (see Kant, 1785/1996, p. 51). Yet Kant simply cannot accept Hume’s skepticism toward the power of reason. The heteronomy of emotion should be no obstacle to reason in its a priori function, for reason must be the motive toward an action of the will if that action is to have moral worth. Reason acts freely only when it excludes desires as relevant considerations for choice and operates solely according to principle. In making this move to radicalize autonomy, Kant asserts the authority of reason to act independently of desires, which, in turn, eliminates subjectivity from the realm of morality. Unlike Hume, he need not assume everyone shares the same sentiments. Because moral motivation can never stem from sentiment or desire but must come instead from the necessity of acting according to a law that reason gives itself, Kant can establish an objective ground for a morality based solely on principle.

In articulating regular and uniform principles, Hume and Kant eliminate the subjectivity of emotion, desire, and perception in their value theory as much as they do in their epistemology. They, like all good Enlightenment philosophers, have faith in reason’s ability to provide objective knowledge of the world. Yet the tensions of this faith are quite evident in their work. They are, after all, fully aware of the need, both epistemically and morally, to articulate explicitly the connection between mind and world, as well as the connection between reason, emotion, and will. Because secret springs and principles escape empirical notice,

Hume is reduced to denying the power of reason, claiming that, in the end, only a fool or a madman would deny experience to be an indispensable guide to human life. Somewhat magically, “regular conjunction has been universally acknowledged among mankind, and has never been the subject of dispute” (Hume, 1748/1975, p. 88). Conversely, Kant accepts that secret springs and principles cannot be had empirically, but he maintains that we still have recourse to regulative principles, of the kind that can be had a priori. These are indeed capable of providing necessity, unity, and purposiveness. Whether empirically or transcendently, Enlightenment philosophers share a desire to seek universal principles, and they do this, at least in part, to overcome the difficulties inherent in a subjectively grounded representationalism. For those who can reason correctly, objective knowledge can be had.

The difficulty, of course, is that not everyone can reason correctly. Kant’s moral theory, for example, requires acting according to rational principle. An obvious question, albeit one that has not been obvious until very recently, is: Who is indeed capable of such severely principled action? The answer Kant (1764/1960) gives is quite specific: he “hardly believe[s] that the fair sex is capable of principles” and adds that “these are also extremely rare in the male” (p. 81). By all appearances, the ability to act according to principles is a rather uncommon trait. It is not universally achievable. Yet anyone who knows anything about Kantian ethics understands the enormous importance of acting from principles. Without this, genuine moral worth is impossible. After all, morality is all about reason and about laws that we autonomously give ourselves. The result is that when we start to take seriously these philosophers’ comments on race, it seems that rationality (and taste) become a whole lot less achievable and a whole lot less universal than Enlightenment dogma would have us believe. The need to limit the proper methodology for cognition may not require the exclusion of those who appear different, but the manner in which the concept is constructed, combined with the obvious prejudice of many key Enlightenment thinkers, practically guarantees such exclusion. The result is the imposition of limitations on rationality and moral equality that actually offer something far, far less than the universalism promised by Enlightenment thinkers. I turn first to Hume and consider the epistemic anxieties evident in his comments on race. In the following section, I address Kant and reflect on how his critical response to subjectivist threats provides a foundation for his racial theory.

Hume on the Standard of Race

What has left many contemporary philosophers confused, or even incredulous, is the oppression and exclusion that go hand in hand with Enlightenment moral concepts such as equality, justice, and freedom. How is it that philosophers who

defend these concepts can own slaves or make disparaging remarks about non-Whites?² Whether or not various Enlightenment philosophers are genuinely racist is a matter of much discussion and debate.³ What is not a matter of debate is that Hume and Kant both make some especially reprehensible statements about non-Whites (and about women). However much we contemporary philosophers might wish to minimize and diminish the significance of these remarks, their comments are deliberate and grounded in their theoretical responses to the threat of subjectivism. In other words, the racist overtones of their works are far from ancillary.

When it comes to the topic of race, Hume has less to say than Kant. Yet what Hume has to say is no less objectionable. The most infamous of passages in Hume's (1758) work is the following:

I am apt to suspect the negroes and in general all other species of men (for there are four or five different kinds) to be naturally inferior to the whites. There never was a civilized nation of any other complexion than white, nor even any individual eminent either in action or speculation. No ingenious manufactures amongst them, no arts, no sciences. (p. 125)⁴

Whether or not this sort of comment is indicative of a deeper racist attitude, it is far from an unreflective remark. As John Immerwahr points out, Hume edits this remark quite deliberately to direct his attack more narrowly against Blacks. In the edited version, he writes: "I am apt to suspect the negroes to be naturally inferior to the whites. There scarcely ever was a civilized nation of that complexion, nor even any individual eminent either in action or speculation" (Hume, 1757/1964a, p. 252). In this latter version, Hume may be more charitable toward the three or four remaining kinds of men, but we can take him at his word with respect to Blacks; otherwise, he would not have precised his comment in the way he did. As objectionable as this passage is, however, nothing foundational to Humean philosophy hangs on this one comment. Nothing specific to his response to subjectivism is implicated. Still, this is not the only reference Hume makes to non-Whites. In Hume's other famously racist passage, that concerning the lack of aesthetic appreciation for wine, his attitude stems from much deeper roots and from a clear worry that there must be a single standard of taste.

²Beyond the remarks of Hume and Kant discussed here, Berkeley owned slaves, and Locke invested in the slave trade. Bernasconi points out that the word "power" in *The Fundamental Constitutions of Carolina* is written in Locke's hand. The result is a document that reads, "Every Freeman of Carolina shall have absolute power and Authority over his Negro slaves" (Bernasconi, 2003, p. 14).

³See, for example, Bernasconi, 2001, 2002, 2003; Eze, 1997, 2000; Hill and Boxill, 2001; Immerwahr, 1992; Kleingeld, 2007; Larrimore, 2008; Lind, 1994; Loudon, 2000; Mills, 2002, 2005; Reiss, 2005; and Zack, 2002.

⁴This remark is often dismissed since it is merely a footnote and not part of the main text. However, Immerwahr (1992), Eze (2000), and Zack (2002) argue that it is far from being an offhand remark. Immerwahr makes a scholarly argument for the deliberateness of this remark; Eze believes it is quite carefully placed and grounded in Hume's theory of human nature; and Zack argues that it implies an essentialism concerning racial divisions.

Compared to other philosophers of his day, Hume is noticeably less insistent upon universalizable principles. Still, he is not entirely insensitive to their power to overcome subjectivity and, hence, to their worth. The clearest expression of Hume's concern for universality comes in his aesthetics, where he offers an explicit appeal to a universal standard as a means of subverting subjectivity in matters of taste. Hume (1757/1964b) believes that "certain qualities in objects . . . are fitted by nature to produce those particular feelings" (p. 273). Yet to know which qualities fit with which feelings, we must consider the responses that fall under the heading of "delicacy of taste." Says Hume (1757/1964b),

Where the organs are so fine, as to allow nothing to escape them; and at the same time so exact, as to perceive every ingredient in the composition: This we call delicacy of taste. . . . Here then the general rules of beauty are of use. . . . And if the same qualities, in a continued composition, and in a smaller degree, affect not the organs with a sensible delight or uneasiness, we exclude the person from all pretensions to this delicacy. (p. 273)

Intriguingly, he does not adopt his normal skeptical stance in this circumstance. In the epistemological case, he is content to reject the authority of reason in favor of "a species of natural instinct" (which turns out by lucky chance to be universal). In matters of taste, he asserts general rules that, it seems, not everyone has the ability to discern. "Naturally," non-Whites emerge as less capable in aesthetic judgments.

A Laplander or Negro has no notion of the relish of wine. And though there are few or no instances of a like deficiency in the mind, where a person has never felt or is wholly incapable of a sentiment or passion that belongs to his species; yet we find the same observation to take place in a less degree. . . . It is readily allowed, that other beings may possess many senses of which we can have no conception; because the ideas of them have never been introduced to us in the only manner by which an idea can have access to the mind, to wit, by the actual feeling and sensation. (Hume, 1748/1975, p. 20)

Hume does charitably admit that it is possible that others have senses we do not, but given the entirety of his view, it seems unlikely that he would find a white European male deficient in the same way as the Negro, who lacks civilization.

Now, the philosophical problem here is not so much Hume's racist remarks, although they are deeply problematic; rather, the problem is that he is not allowed the universality of taste against which he judges the Laplander and Negro lacking. He needs this universality of taste if he is to avoid taste becoming merely a subjective judgment, but the only means empiricists have for establishing such universality of taste is observation and reflection. And herein lies the difficulty. Marcia Lind (1994) notices in both Hume's aesthetics and ethics, an illegitimate assumption (one I believe is also evident in his epistemology): the assumption of an underlying similarity of all people. In the moral case, he needs to establish

some uniformity of human action and volition in the face of seeming “caprice and inconstancy,” but as with induction, Hume (1748/1975) maintains “the conjunction between motives and voluntary actions is . . . regular and uniform . . . [and] has been universally acknowledged among mankind” (p. 88). Echoing his remarks from “Of the Standard of Taste,” Hume (1748/1975) says in the first *Enquiry*, “it is universally acknowledged that there is a great uniformity among the actions of men, in all nations and ages, and that human nature remains still the same in its principles and operations” (p. 83). Thus, in both the epistemic and moral cases, Hume assumes that cognition operates along the same lines regardless of who the cognizer is, as long as the cognizer is White and male.

The issue for Lind, however, is something different, namely, that Hume fails to establish a uniformity among humans as a matter of fact. Instead, he simply states his claim. But, says Lind (1994), “distortions” do exist in our perceptions and judgments, so the universality of taste (and of judgment) can only be had by “artificially constructing agreement among critics by limiting who was party to the agreement” (p. 57). That is, on the basis of an unsupported generalization, Hume limits who can be considered to possess delicacy of taste, and we should note that “exposure to ‘superior’ beauties is not just *any* sort of education, with any sort of range, but a *classical* education” (p. 57). Clearly, not everyone has access to a classical education, especially in the eighteenth century. Although Lind herself argues that Hume’s wider moral theory can overcome this limitation (p. 62), objectivity in matters of taste is clearly obtained by excluding those who do not share the right biases. To legitimize *his* judgment as correct, a critic

must preserve his mind free from all prejudice, and allow nothing to enter into his consideration but the very object which is submitted to his examination. We may observe, that every work of art, in order to produce its due effect on the mind, must be surveyed in a certain point of view, and cannot be fully relished by persons, whose situation, real or imaginary, is not conformable to that which is required by the performance. (Hume, 1757/1964b, p. 276)

Aesthetically, there is a difference between right and wrong, and the only way to “get it right” is to focus on the object from the correct point of view.

Despite the passing nature of his remarks, Hume is indeed reflective in his disparagement of the abilities of non-Whites. Even while asserting that human perception and cognition is governed by a uniform standard, especially when it comes to delicacy of taste, he also maintains that the appropriate application of this standard lies beyond the capacity of some. Now, Hume might be defended insofar as he does not explicitly state non-Whites fail to achieve rationality, but recall that reason is distinguished from taste insofar as “the latter gives sentiment of beauty and deformity, vice and virtue” (Hume, 1748/1975, p. 294). Non-Whites may (or may not) be sufficiently able to determine matters of truth and falsehood, but because they are lacking in taste, they will, by implication, also be lacking in virtue. Even though Humean empiricism cannot support the

assumption of uniformity of rational principles and moral sentiments, that does not diminish the fact that Hume uses this assumption to disparage those who are different. Nor does it help Hume that the assumption of uniform and regular principles is not ad hoc; not only is it a central aspect of his wider philosophical views, it is also specifically used to assert the superiority of non-Whites. Hume may not (or may) exhibit a sufficiently theoretical racism, but his racist remarks are not philosophically accidental. Kant, on the other hand, appears to have a theory which is seriously, intrinsically racist.

Kant on the Purposiveness of Race

Whatever their differences in value theory, Kant shares Hume's sense that aesthetic judgments are universal and that they are closely linked to moral judgment. In the aesthetic case, Kant (1790/1987) states:

Taste is basically an ability to judge the [way in which] moral ideas are made sensible . . . ; the pleasure that taste declares valid for mankind as such and not just for each person's private feeling must indeed derive from this [link] and from the resulting increase in our receptivity for the feeling that arises from moral ideas. Plainly, then, the propaedeutic that will truly establish our taste consists in developing our moral ideas and in cultivating [*Kultur*] moral feeling. (p. 356)

Correct judgments on matters of taste are not only universally valid but also grounded in correct moral belief. One possible implication of this is that failures in judgments of taste may very well be indicative of failures in moral reasoning as well. And moral failures are not to be taken lightly for Kant. Where Hume claims non-Whites exhibit failures of taste, Kant ups the ante. His approach to race, and to the inequalities among the various races, goes deeper than mere aesthetic judgments. Kant is theoretically committed to an epistemological and moral essentialism that diminishes the personhood of non-Whites and non-males.

That Kant is an essentialist about race is not a new argument, but it is a controversial one. Interpreters of Kant disagree on the significance of his racial remarks for his critical work. Philosophers like Emmanuel Eze (1997) and Charles Mills (2002, 2005) argue that Kant's core philosophical doctrines are infected by his racist anthropology. Philosophers like Thomas Hill and Bernard Boxill (2001) argue that while the racism is unfortunate, it can be safely set aside, leaving Kant's epistemology and morality intact. My own sympathies lie with the former interpretation, and my concern is that this essentialism underpins an unsustainable moral hierarchy within deontology. My argument echoes one originated by Eze (1997), who asserts that "what Kant settled upon as the 'essence' of humanity, that which one ought to become in order to deserve human dignity, sounds very much like Kant himself: 'white,' European, and male" (p. 130). What Hill

and Boxill (2001) find lacking in this view is that Eze “says nothing to suggest that Kant believed that these [racist] passages were any more than empirical a posteriori claims that could be falsified by experience” (p. 455). Instead, they argue that the racist bits of Kant are not central to his core philosophical views. More to the point, they hold that we cannot support the conclusion that Kant denies the humanity of non-Whites. Now, Kant does accept Buffon’s rule and allows that “all human beings anywhere on earth belong to the same natural genus because they always produce fertile children with one another even if we find great dissimilarities in their form” (Kant, 1777/2000, p. 9). This, however, does not entail that his racist passages are merely empirically falsifiable claims. While Hill and Boxill maintain that Kant’s remarks do not imply that “non-whites lack dignity, in the sense that they lack the capacity to act morally” (2001, p. 455), the highly structural and architectonic nature of all of Kant’s work makes their position highly unlikely. Whether or not Eze makes the case, a case can be made that Kant’s racism and sexism go far deeper than simply empirical observations. Robert Bernasconi agrees. He finds suspect the strategy of segregating the “basic” aspects of Kant’s theory from the “separable” parts and to jettison what is not necessarily connected to the theory (2003, p. 16). When we more fully examine Kant’s work on race, it becomes more difficult to deny that what he actually says is grounded in core aspects of his critical theory.

Unlike Hume, whose objectionable remarks appear (but only appear) to be made in passing, Kant writes elaborately on the topic of race.⁵ Kant is surely the staunchest defender of individual rights and moral dignity in the philosophical tradition; however, he is also one of the most offensive of all Enlightenment philosophers in his attitudes toward both non-Whites and non-males. Put differently, he makes plenty of objectionable, yet empirically falsifiable, claims. In a particularly odious remark, he states that the difference between races is so “fundamental” that it “appears to be as great in regard to mental capacities as in colour” and that being “quite black from head to foot” is “clear proof that what he said was stupid [*dumm*]” (Kant, 1764/1960, pp. 111, 113). In addition, he explicitly says, without “any prejudice on behalf of the presumptuously greater perfection of one color,” that Whites more closely resemble the original stem stock from which all humans descend (Kant, 1775/2013a p. 54). Later he adds that “humanity is at its greatest perfection in the race of whites” (Kant 1804/1997, p. 62). These are anything but mere empirically determined remarks. This perfection — this epistemic, moral, and aesthetic racial superiority — emerges from a unifying concept that goes far beyond what can be empirically discovered. It arises out of a specifically *purposive* unity, a concept that lies at the heart of Kant’s critical theory.

The argument for purposiveness in racial hierarchy begins innocently enough with Kant acknowledging the humanness of all humans insofar as the mark of species membership is the ability to produce offspring. Over time, the “special seeds

⁵See Eze, 1997; Mills, 2005; and Kleingeld, 2007.

or natural dispositions” all humans originally possessed came to be developed differently in different peoples. The reason for the divergence is innocent enough: we are forced by our climate or environment to adapt to different conditions in order to survive. More specifically, race emerges from living in climates in which conditions such as air and sun alter the “original seeds” humans once shared. This view may sound somewhat simplistic, but it does not sound inherently racist. Continuing on, within the original lineal stem stock of humans are “seeds” which are “*purposively suited for the first general populating <of the earth> . . .*” (Kant, 1788/2013b, p. 181).⁶ Original humans contain all possible endowments, but nature, in its purposive wisdom, sees fit to adapt these natural dispositions over time (1788/2013b, pp. 178–181). The ostensive reason for this change is to better adapt us to survival, but there is more to it than that: “Any possible change with the potential for replicating itself must instead have already been present in the reproductive power so that chance development appropriate to the circumstances might take place according to a previously determined plan” (Kant, 1777/2000, p. 14). A central task of Kant’s anthropology is to discover, through observation, which traits persist over generations, but as Mark Larrimore (2008) notes, “classification of human varieties is never innocent” (p. 342). Kant’s “scientific” discussion of race quickly transitions into considerations of dissimilarities and deviations that ultimately undermine the personhood and moral dignity of non-Whites — and all because these differences are purposive.⁷

Given the centrality of purposiveness to Kant’s critical work, it is important to understand the role played by this concept. In the section on Transcendental Dialectic in his first *Critique*, Kant (1781/1929) makes perhaps his strongest statement of the necessity of purposive unity as a regulative concept:

The law of reason which requires us to seek for this unity, is a necessary law, since without it we should have no reason at all, and without reason no coherent employment of the understanding, and in the absence of this no sufficient criterion of empirical truth. (p. A651/B679)⁸

Purposive unity saves us from Humean skepticism for it offers an assurance that all the individual pieces of experience will fit together into a coherent whole. It guarantees that nature will indeed conform to our faculties. When we find systematic unity in experience we rejoice “as if it were a lucky chance favoring our design,” but it is far from simple luck — it is something that we must assume, else we should have no reason at all (Kant, 1790/2001, p. 184). Furthermore, in the absence of this unity, we lack any assurance of a connection between

⁶See again Kant, 1777/2000, p. 9.

⁷He does much the same with non-males, but Kant’s view on women is a subject for a different paper. For more on this see Heikes, 2010, pp. 53–68, and see Woolwine and Dadlez, 2015.

⁸Also see Kant, 1781/1929, pp. A815–16/B843–44.

the realms of nature and freedom. In fact, Kant (1788/2013b) argues that a purposive unity is essential to nature and freedom:

Nature must consequently also be capable of being regarded in such a way that in the conformity to law of its form it at least harmonizes with the possibility of the ends to be effectuated in it according to the laws of freedom. — There must, therefore, be a ground of the unity of the surpsensible that lies at the basis of nature, with what the concept of freedom contains in a practical way, and although the concept of this ground neither theoretically nor practically attains to a knowledge of it, and so has no peculiar realm of its own, still it renders possible the transition from the mode of thought according to the principles of the one to that according to the principles of the other. (p. 176)

While purposive unity assures that the laws of nature will conform to the systematic unity of the necessary conditions for thought, it also explains how nature effects the ends of freedom and of morality. This is because the purposiveness of material nature is ultimately determined by our moral nature (see Kant, 1790/2001, p. xxvii). Purposiveness speaks to the worth of humans — but not all humans turn out to have equal worth.

Purposiveness is the glue that holds together Kant's architectonic, but it also undergirds the Kantian distinction among races. In his 1788 article, "On the Use of Teleological Principles in Philosophy," Kant (1788/2013b) reiterates a point he makes more notably in the first *Critique*: "Where <experience> comes to an end and we have to begin with material forces we have personally invented <that operate> according to unheard of laws incapable of proof, we are already beyond natural science" (p. 189). Albeit stated in slightly different language, Kant (1781/1929) is asking, "what and how much can the understanding and reason know apart from all experience?" (p. xvii). The answer given in the first *Critique* is rather straightforward: experience requires a presumption that there is a knowable, unified order to the world and this presumed unity must be a priori. The point is one oft repeated in Kant: metaphysical explanations must supplement merely physical-mechanical ones. In other words, the way we make up for the deficiencies and limitations of merely naturalistic explanations is through an appeal to ultimate purposes that can be determined by a priori reason. When he makes this point in his writings on race, however, the claim becomes sinister: humans may all be human, but we are subject to metaphysical explanation that ultimately shows some of us to be less than persons.

Because not everything about nature can be explained using natural methods, Kant (1788/2013b) attempts, "in a little essay on the human races to demonstrate a similar warrant, indeed, a need, to proceed from a teleological principle where theory forsakes us" (p. 173). The argument of this "little essay," "On the Different Human Races," is that race must be more than just an accidental feature of mere appearance. Kant is always more concerned with the structure lying beneath appearances than with the appearances themselves. According to him, "it is

easily without doubt certain that nothing purposive would ever be found <in nature> by means of purely empirical groping about without a guiding principle that might direct one's search: for *to observe* just means to engage experience methodically" (Kant, 1777/2000, p. 174). Yet the mere fact of variation among human races is not his predominate interest. His predominate interest is why this variation exists. What is the underlying metaphysical cause? And there is a metaphysical cause. After all, determinate principles are a precondition for the possibility of observation. Kant (1777/2000) attempts "to examine the entire human genus as it can be found all over the earth and to specify purposive causes to account for the appearance of deviations in those cases where natural causes are not readily discernable" (p. 14). The study of racial variations, then, has the normative goal of obtaining a greater understanding of "purposiveness [*Zweckmäßigkeit*] and fitness [*Angemessenheit*]" (Kant, 1788/2013b, p. 178). What Kant "discovers" is that variations within the human species are not a matter of chance. In the case of race, once nature has modified a group of people, these traits infallibly reproduce over generations. And the purposive unity of nature assures this will have a metaphysical ground. Empirical generalizations, even ones concerning skin color, are indicative of a transcendental teleology, one that favors Whites over non-Whites.⁹

The significance of Kant's insistence upon underlying purposes is this: where Hume notes not "a single example in which a Negro has shown talents," Kant (1764/1960, p. 111) takes such so-called evidence as something far more than a mere empirical observation. As a result, he is confident in claiming that Africans are incapable of "the feeling of the beauty and worth of human nature" (Kant, 1764/1960, p. 51), not simply accidentally but as a matter of metaphysical necessity. Yet, that Africans lack a feeling for the worth of human nature is no small claim since this very worth is linked to moral dignity. For Kant (1764/1960) "true virtue can be grafted only upon principles . . . [that are] the consciousness of a feeling that lives in every human breast. . . . [It] is the feeling of the beauty and dignity of human nature" (p. 60). Hill and Boxill tell us that Kant does not deny the humanity of non-Whites, but here Kant himself tells us that a certain feeling lives in every human breast — just not in the breast of Africans. Are we not being told that a significant moral component comes into play as races are separated by the transformation of original possibilities?

Going back to Buffon's rule, Kant never explicitly denies the humanity of non-Whites, but humanity is not what confers dignity. As Eze (1997) explains, our "developmental expression of rational-moral 'character'" is what undergirds our freedom and our dignity and is what distinguishes humans from animals (p. 120). He adds that "if non-white peoples lack 'true' rational character . . . and

⁹Zack (2002) deals more empirically with the issue of skin color in Kant, but even she recognizes that although Kant essentialized skin color, "he knew something weightier than skin color would have to be at work in order to sustain the kinds of differences implied by racial taxonomy" (p. 22).

therefore lack ‘true’ feeling and moral sense, then they do not have ‘true’ worth, or dignity” (p. 121). This is a conclusion that, upon reflection, is difficult to refute, despite Hill and Boxill’s attempts to save Kant from himself. Aside from the issues I have already discussed, the difficulty of separating the so-called essential from non-essential aspects of Kant’s writing is that he takes moral character to be a distinctive constitution or peculiar property of the will, and he says that the will “is to make use of gifts of nature” such as talents of mind or qualities of temperament (Kant, 1785/1996, p. 49). What this means, according to Allan Gibbard (1990), is that Kant “insists that morally good character is the place to start” (p. 310n). Felicitas Munzel (1999) adds that “character” may not imply acting according to habituated dispositions that appropriately respond to and influence inclination, but it can be “a moral task definitive of our vocation as members of humanity” (p. 2). Only moral beings possess dignity, and morality requires the capacity to act autonomously according to principles. But when it comes to non-Whites and non-males, Kant often disparages their ability to properly make use of “natural gifts,” to have feelings of beauty and dignity, and to act according to principles. As a result, it is, at best, unclear whether non-Whites or women are even capable of developing the right sort of moral character.

The shift in Kant’s thinking, and it is a subtle one, is to link moral worth not to humanity but to rationality. Dignity requires principles. What gives one moral standing is being able to act autonomously, meaning solely according to principles one gives oneself. That is, what makes one a person (in the technical sense of that term) deserving of respect is the ability to rationally formulate moral principles, which is a rare quality in non-Whites and non-males. Humans who are perceived to be incapable of principles, as are non-males and non-Whites, hardly appear capable of acquiring moral standing. Thus, even though Kant’s moral theory provides a decidedly strong account of equality and dignity, his account does not allow those lacking in the right sort of reason to count as moral agents.

Perhaps surprisingly, women are lacking in reason much more explicitly than non-Whites for they lack the capacity for a “deep understanding” (i.e., one based on principles). Concerning women, Kant (1764/1960) says,

Deep meditation and a long-sustained reflection are noble but difficult, and do not well befit a person in whom unconstrained charms should show nothing else than a beautiful nature. Laborious learning or painful pondering, even if a woman should greatly succeed in it, destroy the merits that are proper to her sex, and because of her rarity they can make of her an object of cold admiration. (p. 78)

In the end, a woman’s philosophy “is not to reason, but to sense” (p. 79). The exclusion is straightforward: the real worth of a human being is found in reasoning according to principles, and women sense rather than reason according to principles. In the case of Blacks, Kant surely views their reasoning as inferior, but the denial of principled reasoning is less direct. As with women, Blacks have, at best, a lesser moral standing. Why? Because to lack the ability to act according

to principle is to fall short morally; to fall short morally is to lack in dignity; to lack in dignity is to fail to be someone to whom we can be directly morally obligated or to fail to be someone whom we must treat as an end-in-itself. When one acts according to sensation, the action cannot be truly moral since morality is about acting autonomously according to laws one gives oneself and doing so from the a priori motivation of duty. Because women lack duty, compulsion, obligation, they must, by logical inference, lack moral standing. So, too, with non-Whites. To repeat Eze (1997), “If non-white peoples lack ‘true’ rational character . . . and therefore lack ‘true’ feeling and moral sense, then they do not have ‘true’ worth, or dignity” (p. 121). He concludes that for Kant, “European humanity is the humanity *par excellence*” (p. 121). Perhaps more accurately: male European humanity is the standard.

Now, when it comes to the actual moral characterization of non-males and non-Whites, Kant at least allows European women some measure of virtue, albeit only a “beautiful virtue,” which is of a different sort than a man’s “noble virtue” (1764/1960, p. 81). When it comes to non-Whites, such a charitable interpretation is not as readily available. In the *Observations*, Kant (1764/1960) says, “The mental characters of people are most discernible by whatever in them is moral, on which account we will yet take under consideration their different feelings in respect to the sublime and beautiful . . .” (pp. 99–100). Immediately following he adds in an unusual and short lived display of sensitivity, “In each folk the finest part contains praiseworthy character of all kinds” (p. 100).¹⁰ Such a sympathetic observation is undercut, however, when he goes on to add that “The Negroes of Africa have by nature no feeling that rises above the trifling” (Kant, 1764/1960, p. 110). Women may not be capable of feeling with respect to the sublime, but at least they are capable of feeling with respect to the beautiful. Africans cannot even achieve that. In addition, Kant (1788/2013b) explains that even those non-Whites who migrate to Europe get no benefit from doing so for “those exiled into <northern lands> . . . have in their descendants never wanted to serve as a stock useful to settled farmers or craftsmen” (pp. 186–187). Taking this passage, Kleingeld (2007) argues that Kant is linking his physical race theory to a “moral characterization” of races:

His claim that the different races do not change, once they have differentiated out from the *Stammgattung*, is given a teleological interpretation, *viz* in terms of purposive design; and he connects this claim with the assumption that some races are not just different, but inferior. . . . What is important in the present context, however, is that Kant’s comment about the “Indians” (“Gypsies”) and “Negroes” makes clear that his assumption that the non-white races have inferior mental capacities (including capacities for agency) plays a crucial role. (p. 581)

¹⁰In discussing Kant’s version of cosmopolitanism, Mendieta (2009) argues that Kant cannot allow that other races have an excellence or that other cultures are capable of contributing to human accomplishments (p. 248).

Kant may say that he has no prejudice when it comes to identifying the greater perfection of one color skin over others, but this claim is somewhat incredulous given the sum of his writings on race. According to Eze (1997), “Kant’s position manifests an inarticulate subscription to a system of thought which assumes that what is different, especially that which is ‘black,’ is bad, evil, inferior, or a moral negation of ‘white,’ light, and goodness” (p. 117). He adds that Kant uncritically assumes that “the particularity of European existence is *the* empirical as well as ideal model of . . . *universal* humanity, so that others are more or less human or civilized . . . as they approximate the European ideal” (p. 117). In other words, Kant’s racial theory is not simply hierarchical but also contains within it both moral and aesthetic judgments.

Eze is correct in stating that Kant associates beauty with the good. In a completely different, non-racial context, A.C. Genova (1970) considers the way in which the *Critique of Judgment* bridges the gap between the realms of nature and of freedom and asserts that Kant’s “analysis is that beauty becomes the symbol of the good, and sublimity of moral dignity” (p. 465). When the connection of beauty with the good is linked to Kant’s remarks on race, his prejudice against non-Whites appears even more dramatic. For Kant (1788/2013b), Pacific islanders can be distinguished from Negroes “partly because of their skin color . . . partly because of their head and beard hair, which, contrary to the attributes of the Negro, can be combed out to a presentable length” (p. 188). “Beauty,” which clearly reflects a classical ideal, can be approximated by the Pacific Islander, who is thereby “more presentable.” And this is not the only occasion when Kant makes this sort of claim. Elsewhere he states, “The inhabitant of the temperate parts of the world . . . has a more beautiful body, works harder, is more jocular, more controlled in his passions, more intelligent than any other race of people in the world” (Kant, 1804/1997, p. 64). The beauty that Whites achieve far more readily is indicative of superior moral properties. Of course, we should remember that standards of taste are, for Hume as well as for Kant (1790/1987), declared “*valid for mankind as such and not just for each person’s private feeling*” (p. 356). Nevertheless, the standards of aesthetic and moral evaluation that European thinkers such as Kant use, somehow explicitly favor Whites over every other identified racial group. Within Kant’s work specifically, the standard is not ancillary or merely empirical but is a central aspect of his architectonic. In other words, the superiority of Whites is part of a purposive nature. This purposiveness is regulative, necessary, and integral to both the theoretical and practical philosophy.

Regardless of what sort of defense one constructs, Kant’s own words speak against him again and again and again, although this does not stop even his critics from offering some defense on his behalf. Kleingeld (2007) maintains that Kant’s moral principles are formulated in a race neutral manner, even though they are ultimately infected with his racist attitudes (p. 584). But even if we can allow that Kantian morality is itself race neutral, his larger architectonic is not

because the purposiveness of nature demands the heritable differences among humans signify a moral difference. And this insight does come out in Kleingeld. She admits that even though Kant's "own *definition* of race as such is formulated merely in terms of heritable differences in physical appearance, he nevertheless connects his understanding of race with a hierarchical account according to which the races *also* vary greatly in their capacities for agency and their powers of intellect" (p. 574). The hesitancy I have with even this admission is that it does not take seriously enough how philosophically insistent Kant is about requiring these heritable differences to mark essential, metaphysical differences. Truly remarkable in all this is how the same philosopher who insists that rational beings have intrinsic worth is the very same philosopher who finds a man's skin color to be indicative of his "stupidity" and who agrees with Hume that "negroes and in general all other species of [non-white] men . . . to be naturally inferior to whites." Evidently, "negroes and in general all other species of non-white men," lack some sort of moral standing; otherwise, they could not be "inferior."

Modern Reason and Moral Personhood

The Enlightenment is indeed an Age of Equality, albeit only for a narrowly specified domain of European men capable of the appropriate sort of objectivity within cognition. Whether such narrowness should have been visible to philosophers of that time is an open question. What is no longer an open question is whether such a perspective is truly universal. Toulmin (1972) explains that in "philosophical epistemology, especially since Kant, the existence of some fundamental and unchanging framework of concepts and principles, which forms the universal and compulsory skeleton for all more technical and empirical 'world-pictures,' has widely been taken for granted" (p. 413). Yet to recognize alternative ways of reasoning immediately raises questions of cultural relativism or subjectivism, which is precisely what Hume understood in his remarks on taste. And it is precisely why he was unwilling to allow non-Whites a delicacy of taste. Hume and Kant both understand the dilemma: recognize as legitimate different methods of reasoning (e.g., of Africans, of women, and so on) or to exclude from the domain of reason these different ways of things, these alternative conceptual schemes. Both these philosophers also understand the necessity of compulsory skeletons for cutting of cultural relativism and salvaging the objectivity of knowledge. Their task becomes to restrict rationality — and consequently to restrict personhood — only to those who could properly *achieve* it. The result is that some humans fail to count as persons possessing dignity. But this means that concepts dependent upon these skeletons — for instance, justice, freedom, dignity, autonomy — cannot allow for a diversity within rational methodologies, at least not without different grounds provided by a less narrow and exclusive account of reason.

This is the problem for modern thinkers: both epistemically and morally, the tools of modernism demand privileging of a particular point of view. The conception of a procedural rationality that makes invisible perspective and bias is the ground for Enlightenment moral concepts, and as a result, personhood comes to be “universally conferred” only upon those who are seen as conforming to the prescribed methods and standards for cognition. Difference, subjectivity, emotion, particularity, narrative — these all become difficult to see during the Enlightenment. And this, in turn, has detrimental consequences for those who fall outside the domain of reason. Lynda Lange (1998) points out that Europeans of this time perceived indigenous peoples in the Americas in an entirely self-referential way:

they literally did not perceive the “other” as “other,” but rather as deficient examples of “the same. . . . Spanish selfreferentiality [sic] was so strong that even the dazzling evidence of urban development among the Aztecs and Incans that was superior to what the Spanish would have known in Europe failed to suggest to them that these peoples might be best thought of as simply different from them, rather than inferior to them.” (p. 135)

As rationality comes to be associated with a particular methodology, people who seem not to conform to this method lack the full status of moral persons.

Thus, while all humans may be human, not all are persons — and the reason goes directly back to the threat of subjectivism created with Descartes’ origination of the Copernican turn. Hume and Kant become key players in the subtle and effective decoupling of personhood from humanity, a decoupling which largely goes unnoticed because modern philosophers still presume humans are rational animals. However harsh Kant’s notion of morality can sound, he always understands that in our actions toward non-persons (i.e., animals, small children, those suffering dementia) we are still bound by some duties, even if these duties are indirect. Of course, that is the rub. Personhood, with its ties to rationality, lies at the heart of deontological ethics, and moral concepts such as equality, liberty, and justice apply to all persons — but only to persons in the technical sense of that term. Duties cannot be directly owed to those incapable of formulating and acting according to principles. As a result, Kant cannot assure that we are morally required to treat all humans equally. All he can offer is the equal treatment of persons, that is, rational agents who are autonomous lawgivers to themselves and other rational beings. Even in the strictest case of Kantian ethics, universality fails to be truly universal.

For all their talk of objectivity, universality, and equality, Enlightenment philosophers quietly mask a shift toward narrow, uniform, methodological understandings of reason. The domain of the rational comes to be demarcated by a particular, scientifically determined model of investigation which does not and cannot allow for differing methods. Richard Rorty (1979) sees this clearly

for he tells us that “Once consciousness and reason are separated out . . . , then personhood can be seen for what I claim it is — a matter of decision rather than knowledge, an acceptance of another being into fellowship rather than a recognition of a common essence” (p. 38). Anything that falls outside of the model established by standards of fellowship is dismissed, ignored, and made invisible. “Person,” says Mills (2002), “is really a technical term of art, referring to a status whose attainment requires more than simple humanity” (p. 8). By the time of Kant, personhood is clearly not attributed to all humans, only to humans of the right sort, but, of course, what constitutes a “person of the right sort” is never adequately or explicitly articulated. The definition of “person” must be reverse engineered from what we are told about the failures of women and non-Whites to achieve rationality.

When the concept of personhood becomes linked to a modern account of reason, the status of “person” comes to be unattainable for many. The Enlightenment concept of reason makes rationality an achievement of which non-Whites and non-males are largely incapable. But the arguments for this are, within the framework of modernism, much stronger than many contemporary philosophers care to admit. It is much easier for us to dismiss the racism of the mighty dead than it is to acknowledge how deeply held and theoretically defensible are their beliefs. Racism itself may not be essential to modernist thinking, but neither is it accidental. Given the threat of subjectivism, allowing for differing points of view, ways of thinking, or conceptual schemes would undermine the objectivity of any knowledge claims, including those of the new science. In cutting off this threat, philosophers also cut off the capacity for fully rational cognitive activity in anyone who fails to think or perceive in the so-called right way. The Copernican turn in philosophy takes objects to conform to human ways of cognizing, but only if you are a certain type of human.

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HOT, Conscious Unity, and the Structure of Events: Extending Friesen's Critique

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Friesen (2014) has examined Rosenthal's HOT (higher-order thought) theory of consciousness with respect to its capacity to support various forms of conscious unity, noting many difficulties. The problems facing HOT in three of these unities — subject unity, stream unity, and object unity — are extended in more detail here, with special attention paid to object unity as simply a special case of event unity. Rosenthal gives a HOT the power of uniting/co-representing multiple mental states. As Friesen notes, this co-representation must be relational; even an object unity such as a "red cube" would require at least a thought representing a location relation — "red at location x, cube at location x." This "relational" requirement is likely more fatal to HOT theory than Friesen took the space to explore. On analysis, the relations in even a simple event are so dynamic and complex, yet simultaneously so mutually implicative via the abstract, amodal information that specifies the event in all modalities, that the notion of a co-representational HOT loses any notion of efficacy, necessity, or coherence.

Keywords: HOT theory, conscious unity, event structure

Rosenthal's (2002) theory of higher order thought is well known for its insistence that a higher order thought (HOT) is required for turning a mental state into a conscious state. In Rosenthal's view, there are two categories of mental states: (1) a mental state with the thought that one is in this state = conscious or subjective awareness, and (2), a mental state without the thought that one is in this state = unconscious. Thus, for Rosenthal (2011): ". . . a state is conscious only if one is subjectively aware of oneself as being in that state" (p. 431).

When it comes to the explaining the unity of consciousness, Friesen (2014) has argued that HOT theory is far from adequate. Friesen firstly notes that there are two basic forms of unity — synchronic and diachronic — within each of which are multiple forms:

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Synchronic

1. Phenomenal unity, or conjoint/subsumptive phenomenology — the taste of the sip of coffee, the kitchen chair against my back, the view of table — all cohere or are subsumed in a unified experience.
2. Spatial unity — the table, chairs, walls, hanging pots, rugs etc., all cohere in a space.
3. Object unity — the form and color (white) of the coffee cup cohere.

Diachronic

1. Stream unity — as I walk from the kitchen to the living room, there is a flow that coheres.
2. Subject unity — I can think of the experience of reaching for the coffee cup as my own, as well as other experiences (e.g., breakfasts/coffee) in the past.

Rosenthal is proposing to explain *all* of these, Friesen notes, with but two basic mechanisms. The first of these is indexical. This is to say that the multiple mental states in the whole cohere by the fact that they are referenced to an “I,” i.e., to a subject’s sense of self. The second is co-representational. Thus, part of what unifies conscious states, per Rosenthal, is the fact that HOTs often represent many lower-order states all at once. Though Rosenthal has little to say about the precise nature of these higher-order representations, he maintains that HOTs “operate on many of our mental states not singly, but in large bunches” (2000, p. 226), i.e., a HOT can target and represent many different simultaneous mental states.

The multiple types of unity however are lost in Rosenthal’s treatment, conflated into a generic “unity,” and, Friesen argues, these two mechanisms — indexical and co-representational — are simply not up to the actual task, at the very least leaving Rosenthal a lot of fleshing out to do. Friesen makes numerous excellent points as he analyzes these mechanisms vis a vis the various forms of conscious unity. I will not do them all justice by far, focusing on only a few here, with the intention of showing that these arguments could have gone much deeper, so much so that any validity of the HOT theory seems to float on utterly inadequate attention to the nature of these “unities.” The focus here will be the nature of our perceptual experience as emerging, for example, in the science of ecological psychology and the structure of events. Two secondary points will note the inattention to the relation of mind to time (an inherent problem once we talk of events and therefore stream unity), and to the profound problem within subject unity of what makes one consciously aware of previous events as part of one’s past history.

Object Unity — as Events with Invariance Structure

The co-representation notion, Friesen observes, should apply even at the level of object unity, say, for a red cube. The redness (a mental state) and cubeness (a mental state) would be co-represented in the HOT, providing the unified experience of the colored object. We must presume here, he notes, that it is more than a simple conjunctive representation, e.g., “redness and cubeness,” but rather at least a relational representation, to the effect, say, “cube and redness at location x.”

This is the insight of Friesen that I wish to key on first, namely the requirement implicit within Rosenthal for what we can term *relational* HOTs to support object unity and by implication, even the unity of various aspects of an event. In broaching this subject, we enter into a region of great complexity. Rosenthal’s theory, vague when addressing the unity of consciousness as effected via HOTs, must confront the actual dynamics and information defining events — those “episodes” that a HOT makes conscious. This is not just white coffee cups or red cubes. It is rotating red cubes, spoons stirring coffee, leaves falling and twisting or even leaves being raked across the lawn. In viewing the unity of dynamic events, the necessity for HOTs and their viability as co-representational agents or forces is brought very much into question.

Let us take one of those simple “episodes,” i.e., an event, that a HOT is supposed to make conscious, in this case the simple act of watching oneself stir coffee in a cup with a spoon while sitting at the kitchen table. This event has a structure, a structure that must be supported in an ongoing way over the neural dynamics of the brain. We will be asking what a co-representational HOT could possibly be, such that it can turn this structure into a conscious perception. I have given an analysis of this event in other places (Robbins, 2002, 2014a), and intend to be more succinct here.

The event of coffee stirring is defined by numerous invariance laws; it is immensely mathematically rich. If the cup rests on a tiled table, it rests on a texture density gradient. The tiles are our texture “units” and have a decreasing horizontal separation (S) as a function of the distance from our eye ($S \propto 1/D$), and with a vertical separation as $S \propto 1/D^2$. These gradients are ubiquitous — beaches, fields of grass, tiled floors, rugs, etc. If the cup is moved towards us across this gradient, the size constancy of the cup as it moves is being specified, *over time*, by the invariant proportion, $S \propto 1/N$, where S is the (increasing) vertical size of the cup on the retina, N the (decreasing) number of texture units the cup vertically occludes ($SN = k$). When the gradient itself is put in motion, say, as we move our head towards the table, it becomes an optical flow field — a gradient of velocity vectors where there is an increasing point velocity as the distance from the eye decreases, $v \propto 1/d^2$, where all vectors are radiating from a single point, the point of optical expansion.

These optical flows are viewed as critical in the specification of dynamic form, as in a rotating coffee cup, and as our little coffee stirring scene is filled with forms, we should have some idea of what a co-representational HOT is presiding

over when it comes to these. Bear with me here, for we should see how dynamic, therefore constantly changing, this specification is. The flow-as-form insight came as a response to the intractability of the correspondence problem, a problem which required the tracking of the features of a moving object (and their position) from “frame” to “frame” in the object’s motion. Were the object a rotating cube, the features would have been the vertices and edges of the cube. Adelson and Bergen (1985) described a general class of low-level models based on linear filters known as “energy models,” initially developed by Watson and Ahumada (1983), addressed specifically to the detection of the direction and velocity of motion, for example, as an edge of the rotating cube transits the visual field. The energy model does not extract position to compute motion, rather, motion is treated as spatiotemporal orientation and the model consists of a network of “spatiotemporal filters” which respond to motion energy within particular spatiotemporal frequency bands. A network of these filters distributed across the visual field produces a net form of continuous output specifying the direction and velocity of motion of the edge.

The receptive fields of the energy model filters are inherently “apertures,” and thus the velocities of the flow cannot be estimated with certainty due to the limited view of each field. More generally, this indicates that the visual system’s measures of velocity are intrinsically uncertain, and thus the integration of a multitude of uncertain individual velocities must be inherently probabilistic. It is at this point of integration that the model of Weiss, Simoncelli, and Adelson (2002) inserts a fundamental, probabilistic (Bayesian) constraint. The constraint — in effect an invariance law — ultimately applied in mathematical form to the resolution of these velocities, is “motion is slow and smooth.” The model explains a very large array of “illusions.” In fact, due to this inherent measurement uncertainty, *all* perception, “veridical” or otherwise, the authors argue, must be viewed as an *optimal percept* based upon the best available information. Applied to the velocity fields defining a narrow rotating ellipse, for example, the violation of this “slow and smooth” constraint ends in specifying a non-rigid object if the motion is too fast (Mussati’s illusion; Mussati, 1924). It is these constraints applied to the velocity flows, or their violation, that determine the rigidity of the form.

Were we to allow the coffee cup in our scene to be cubical and have it rotating, this form becomes a partitioned set of these velocity fields. As each side rotates into view, an expanding flow field is defined (Domini, Vuong, and Caudek, 2002). As the side rotates out of view, a contracting flow field is defined. The top of the cube is a radial flow field. The “edges” and “vertices” (i.e., “features”) of this cube are now simply sharp discontinuities in, or junctures of, these flows. As we shall see below, and as the foregoing implies, the rigid form of the cubical cup is equally subject to a quite different “optimal specification” of its form.

Let us add just a little to our stirring event to draw the implications for that innocent form — the cubical cup. We’ll place a cube made of wire edges near the coffee cup and set it rotating. This addition to the scene should be no problem

for our co-representational HOT that is about to make all this conscious. The cube has a symmetry period of four, being carried into itself every 90 degree turn. If we strobe this cube in phase with or at an integral multiple of the symmetry period, we will see a rigid cube in rotation near the cup. But if we strobe it out of phase, we now see a plastic, wobbly, non-rigid object (Shaw and McIntyre, 1974). The “features” of the cube — the nice straight edges and vertices and flat sides — have disappeared. Again, as we have already implicitly seen, time is all important in the brain’s dynamics, and it appears this wobbly plastic-like cube is either a form of violation of the “motion is slow and smooth” constraint, or of yet another constraint used by the brain in the specification of form (e.g., a regular object exhibits a regular periodicity). To preview, we can already begin wondering how the “relation” between the ever-contorting, ever changing edges and their color can be specified in a HOT.

If the cup is static (it can never truly be so given the saccadic motion of the eye), and the spoon is stirring the coffee, a radial flow field is created over the liquid surface. Also, when we poured the coffee into the cup, the rate of increase of the pitch of the sound as the cup fills with liquid is an invariant coordinate with the visual rise of the liquid (Cabe and Pittenger, 2000).

Other Dynamics in the Event

The stirring motion of the hand is a complex of forces. The use of the spoon is a form of “wielding.” This is described (cf. Turvey and Carello, 1995) under the concept of an “inertia tensor.” A rigid object’s moments of mass distribution constitute potentially relevant mechanical invariants since they specify the dynamics of the object. The object’s mass is the zeroth moment, while the first (static) moment is mass times the distance between the point of rotation and the object’s center of mass. The second moment is conceived as the object’s resistance against angular acceleration. In three dimensions, this moment is a 3 x 3 matrix called the inertia tensor. The diagonal elements I_1, I_2, I_3 , are eigenvalues and represent the object’s resistance to angular acceleration with respect to a coordinate system of three principal axes (cf. Kingma, van de Langenberg, and Beek, 2004). There will be an inertia tensor (invariant), I_{ij} , specific to spoon-stirring.

Over the periodic motion of the stirring spoon, there is likewise a haptic flow field defined, and within this, there is an adiabatic invariant — a constant ratio of the energy of oscillation to the frequency of oscillation (Kugler and Turvey, 1987):

$$\frac{\text{Energy of oscillation}}{\text{Frequency of oscillation}} = k$$

This further relates to action. Over this flow field and its velocity vectors a value, τ , is defined by taking the ratio of the surface (or angular projection) of the field at the retina, $r(t)$, to its velocity of expansion at the retina, $v(t)$, and its time

derivative. This invariant, τ (or tau), specifies time to impending contact with an object or surface, and has a critical role in controlling action (Kim, Turvey, and Carrelo, 1993). A bird, for example, coming in for a landing, must use this τ value to slow down appropriately to land softly. As the coffee cup is moved over the table towards us, this value specifies severity of impending contact and provides information for modulating the hand to grasp the cup (Gray and Regan, 1999; Savelsbergh, Whiting, and Bootsma, 1991).

This is a mere beginning of what we can term the *invariance structure* of an event. The invariance structure of an event is a specification of the transformations and structural invariants defining an event and rendering it a virtual action. The transformations define the information specifying the form of the change — rotating, swirling, flowing. The structural invariants define the information specific to that undergoing the change — a cup, a liquid, a field of grass or gravel.

How Might a HOT “Conscious-ize” Coffee Stirring?

Rosenthal’s theory of conscious unity, as Friesen noted, is sketchy: “Rosenthal has little to say about the precise nature of these higher-order representations” (2014, p. 211). Most of the imaginative work on “how things work” is a do-it-yourself project. If we go from the assumption that an event such as our coffee stirring is composed of various “sensations” in Rosenthal’s terms, each of which appears to merit being called a “mental state,” we bring ourselves concretely into what this co-representative HOT — a HOT that combines all these states — must actually be accomplishing.

So what states are we combining, and what is the form of the combination? As there is no *in principle* method of identifying states provided by Rosenthal, we are going to have to guess, but we will be far beyond settling for simple “relations” such as “cup at x, whiteness at x.” We can start with the radial flow field of the liquid. The “thought” (HOT) must already be a constant, continuous, flowing “thought,” as the stirring is an instance of “stream” unity in Friesen’s terms, and the liquid is continuously moving, always in a changing configuration. The thought, “I am in this state (re the swirling),” must be constantly changing and doing so at a very fine scale of time, for the “state” is nothing but dynamic change. Is the thought, we might begin to ask, providing or supporting the perceived continuity of this change, i.e., the perceived swirl or flow? Is the “thought” being subtly substituted for a theory of the memory that supports this perceived flow over time, or simply riding upon this yet to be developed theory? The liquid itself must be precisely placed “within the cup” — it is just not “at place x” along with the cup. Further the form/appearance of the cup, as far as its inside upper sides, is constantly changing as the liquid sloshes a bit up and down the sides, so this movement of the liquid must be coordinate precisely with the cup’s changing inside form, in a word, another thought — “I am in this state (re the cup holding

the sloshing liquid and its changing internal form/sides)” — that is constantly changing at a very fine scale of time.

As we are imagining our head move back and forth here, the constant size of the cup is a function of the invariant ratio of height to the texture density gradient of the table. The size of the cup on the retina is constantly changing, but the perceived size is not. This again is a function of a ratio held constant over continuous change. Is the thought then, “I am in this state (re constant cup size as my head moves forwards or backwards)?” But the constancy is relative to the texture gradient of the table top, for which we could also have the thought, “I am in this state (stretching surface of table).” The constancy of the cup, as a ratio of height to table texture units, is already a complex relation, i.e., an invariance within the totality of the scene over time — table gradient and cup — to which the brain must be responding. But then we should not need a “thought” to represent this relation between cup and surface. It is a relation intrinsic within the perceptual dynamics.

But this “redundancy” of a HOT, or perhaps better, lack of need for a HOT for combining “states” (which is to say the constantly changing aspects of the scene) emerges everywhere. That radial flow field of the liquid surface, remember, is being caused by our stirring hand. Thus we come to both the inertial tensor and to the adiabatic invariance — the ratio of energy to frequency carried over the periodicity of the spoon — that determines the actual form of the disturbance in the liquid, e.g., the velocity of the radial flow and other wave-aspects of the surface’s disturbance, to include the degree of the liquid’s sloshing down and up the cup’s sides. But this felt mechanics, carried in a haptic flow, must correspond precisely with the liquid’s motion, in fact it must do so, for it is at the root of this motion. If it did not correspond, we would detect it instantly as an anomaly, a detection that would be just as easily made, for example, if the periodic sound made by the spoon striking the insides of the cup is heard, rather than as a clinking, as a “snap, crackle, pop.” There would be no need then, for a HOT to be co-representing, and doing so via some form of “relation,” the precise fit of these supposedly disparate mental states — the motion of the liquid with the felt motion and dynamics of the spoon (to include the inertia tensor), or of this latter with the periodic “clinking” of the spoon. As noted, when the coffee was poured into its, say, tallish cup, the rising frequency of the sound as the coffee rose was coordinate with the visual velocity of the rise. This too would have been an amodal invariance available to the brain, spanning these two modes, making a “thought” relating the two “states” redundant at best, and at worst, as in all the above, strange to describe, e.g., “sound frequency increase (Δf) rising proportionally to visual height increase (Δh),” [and where we of course know what a “proportionality” thought is].

The nearby, strobed out-of-phase cube is rotating as a plastically changing, non-rigid, wobbly non-cube. For this wobbly non-cube, let us simply note that for this form — specified by the brain’s dynamics and changing its shape constantly — the color patch that is coordinate with its wire-edges is also shifting/contorting precisely

with this changing spatial pattern. There is no conceivable co-representation relation embodied in a HOT that we could hatch up for this, short of that carried/specified in the brain dynamics itself. We are relying here on the global processing dynamics of the brain, just as we are relying on the adiabatic invariance carried over the haptic flows within this dynamics that must be coordinate with the visual motion and more. The usefulness of a HOT, or even how we would ever formulate the “co-representations” as anything other than the relations (invariants) enfolded within this very dynamics become increasingly questionable.

Stream Unity and Time

These elemental events — coffee stirring, a rotating cube — intrinsically require the stream unity noted by Friesen. We have the perception of continuous flow. I have argued elsewhere (Robbins, 2013) that there is no current theory of memory that can support this. If we have, for example, a theory that stores successive samples of the event in some memory, say an “iconic” store, we quickly hit an infinite regress. The samples are immobilities, like snapshots laid out on a desktop. Do we invoke an internal scanner to account for the motion? We begin the regress — we must explain the scanner’s perception of motion. For the rotating cube, which, with an out-of-phase strobe (sample) rate, becomes a plastically changing not-cube, we have lost, furthermore, any foothold as to what such samples, in terms of their structure, could even be.

The sampling concept trades on the discrete state model of time, i.e., time (or events) as a series of static instants. If taken at the universal scale, it would be as though time is a series of 3-D instantaneous spatial blocks, each “block” comprising the entirety of space (the material universe) taken at the most infinitesimal duration, and each (present) block disappearing (going into non-existence, namely, into the past) as the next block (the “present”) arrives. The brain, even in its dynamic change or processing, is simply a sub-block within the whole, universe-in-scale block of space, and integrally part of this discrete series of ever-renewed blocks. The coffee cup, table, and stirring spoon can be viewed also as a series of sub-blocks in the whole. The material realm, by this very definition of time, is comprised, at any one instant, entirely of the universal-in-scale, 3-D block of space, and there is — always, ever — only *one* such instantaneous, completely static, 3-D block (i.e., the “present” block). [One should wonder, is there not required some continuous process that generates each successive block?] Yet consciousness inherently demands continuity — it must span or cohere or bind at least two such instants or blocks, else we have the consciousness of a stone, i.e., instantaneity *without an iota of history*. So, to make the coffee stirring event conscious, Rosenthal is implicitly giving this binding power — the very creation of a dynamic flow or of a stream — to a HOT, i.e., to a thought.

So a thought would bind instants; it is responsible for the continuous flow, which is to say that it is binding successive states of the brain, i.e., successive

states of a chunk of the material world, together in a flow. In what realm — for, by the above definition, it is not the material realm, ever existing as it does only in one 3-D block or instant — do thoughts dwell such that they have this power? Is there but one continuous thought in this other realm, constantly modulating as events change? Or does a thought suddenly come into being to cover the coffee stirring, then another arise suddenly in this mysterious realm for getting up from the table and taking the toast out of the toaster? Or can a thought do just about anything HOT theory requires?¹

On the other side of the coin, we see implicit appeals to continuity, as in the “continuity of neural processing,” which use this surreptitious route to take care of the binding of (or memory of) instants problem, i.e., to ignore the implications of the discrete state model of time. Then we must be explicit as to the source of this continuity. Are we appealing, for example, to Bergson’s (1896/1912) concept that motion must be viewed as *indivisible*, where there are no mutually external instants, where each of our instantaneous 3-D blocks of space (or instants) merges and interpenetrates the next, forming an organic continuity? But then we have a form of memory that is intrinsic to the very transformation of the material world, and then we would no longer need a thought (HOT) to undergird stream unity at all. The stirring spoon, or the fly buzzing by the coffee cup, or the brain’s neural processing, are now sub-flows in the continuous, indivisible transformation of the universal material field. Then, remembering that there would-be no static, 3-D blocks instantly going into non-existence (the past) as the next arrives, the question would switch — it would move from wondering how a thought binds instants or how the brain uses a static memory store to store samples of an ongoing event. Using a Gibsonian term, the question would become how, eschewing any reliance on some regress-prone memory store, the brain “specifies” a past sub-flow within the transformation of the field (as we are always viewing the past) at a specific *scale* (something else a HOT must account for) — a buzzing fly, or a fly slowly flapping its wings like a heron, or a “fly” as a fuzzily outlined crystalline ensemble of whirling atoms.

These are questions for which Rosenthal is far from immune. They go to the heart of what a thought is. Admitting my lack of Rosenthalian expertise, certainly not at the level of Friesen’s, my observation is that such questions on time are heavily neglected.

¹I am ignoring here the supposed space-time block of special relativity which comprises the entirety of past-present-future in a frozen 4-D structure, wherein no such instantaneous blocks of all of (present) space could exist. This is for at least two reasons: (1) this block model is itself a bad misinterpretation of the theory, and, (2) even were the block interpretation valid, no one can then explain our perceived flow of time and the experience of motion, save by hypotheses such as time-travelling fields of consciousness, themselves riddled with logical problems (cf. Robbins, 2014b).

Subject Unity, Explicit Memory and the Symbolic

Friesen demonstrates that the co-representation mechanism is insufficient to account for phenomenal unity, or event unity as we have treated things here, as there can be multiple mental states within an event, not all of which can be covered by this mechanism. To fill in the slack, Rosenthal relies on the indexical or “common ascription” mechanism, wherein all states are referenced as well to the self or “I.” One of Friesen’s criticisms of this common ascription mechanism is that it makes unity contingent on advanced mental abilities, for example, the capability of a certain kind of self-reference, the capacity to represent the contents of lower-order states in sufficient detail, and the ability to characterize those contents as contents of a mental state. The obvious problem, as he notes, is that phenomenal unity, which seems clearly present in very young children and animals cannot actually depend on the achievement of such abilities. This is certainly true, but Rosenthal’s underestimate of the nature and source of his common ascription mechanism goes far deeper.

The “I” sense, therefore the indexical referencing, is at the very minimum highly correlated with “subject unity” in Friesen’s list of unities, where events from our past are retrieved and related to one’s present as part of our self-aware history. Weiskrantz (1997) termed this ability the “past x present” product. Friesen noted that there is a vast literature on the related ability to self-ascribe mental states. (This would include Block’s [1995] notion of “access” consciousness.) I think it safe to say that the literature underestimates the nature and scope of what must be developmentally achieved. The retrieval of events from the past, with the awareness that the events were indeed experienced in our past, is firstly the great the problem of *explicit memory*. Piaget (1954) termed this ability, “the localization of events in time.” In his description of its development, this ability is integrally related to the simultaneous emergence of a complex of concepts — Causality, Object, Space, and Time — a complex labeled COST (Robbins, 2009). It is a set of concepts that integrally support the emergence of the ability to symbolize. All in all, the organizational trajectory of the brain towards the eventual emergence of this complex requires roughly two years. It is an organizational achievement via the dynamic trajectory of what has been argued as the natural evolution of a dynamic system, where Piaget’s “stages” are natural bifurcations along this path (van der Maas and Molenaar, 1992; Molenaar and Raijmakers, 2000). It is a trajectory leading to the brain’s ability to assume a complex dynamic state, a state which allows the simultaneous relation of an event in the past to an event in the present, something I have termed an *articulated simultaneity*.

So, I am sitting on my porch, watching some waving wind chimes, simultaneously aware that I bought these chimes as a gift a year ago for my wife, or I am Piaget’s 19-month old daughter, Jacqueline, who suddenly articulates, while looking at a piece of green grass, that this is (that it symbolizes) a “totelle” — the grasshopper (*sauterelle*)

her little brother played with the other day (Piaget, 1954, p. 391). In each case, this very “thought” correlating past and present and supposedly underlying this aspect of “subject unity” cannot even have come into existence — could not be supported — without the dynamic brain state supporting this past–present correlation. How, then, can a HOT (thought) be the causally efficacious instrument for this unified, past and present-relating consciousness, when the thought itself cannot come into being save for a dynamic that underlies this conscious, past–present correlation?

Higher Order Last Thoughts

As noted initially, Rosenthal makes it very clear that for him, all states, conscious and subconscious, are mental states and all mental states have a phenomenal aspect. While I find this assertion that “all is phenomenal” to be very problematic, Rosenthal admits that we must explain how these mental states gain their phenomenal aspect, but he throws up a roadblock to achieving an explanation.

There is a second and I think better way to do justice to [phenomenal mental states]; we can do justice to them by explaining why it is we have those subjective appearances, and that’s what we do with many other phenomena such as weight. We don’t take our pre-theoretical conception of weight to be veridical, we explain why we have that pre-theoretical conception. We’re going to have to explain why we have those subjective appearances, and supposing those subjective appearances are veridical isn’t going to help us give such an explanation. (2012)

Yet we have seen that a perception theory based upon flows is not insisting on the “veridical,” rather it is arguing that we always have an optimal specification of the external world. The non-rigid ellipse or the wobbly, plastic-like not-cube are optimal specifications. But note that these dynamically changing forms are themselves “qualia.” The wobbly, elastically changing, sort-of-cube remarkably differs in quality from the rigid cube in rotation. Dynamically changing form as being itself, qualia — not just the “redness” or “blueness” of the rotating cube or of the wobbly cube — is exactly the intuition of Hardcastle as she enumerated her examples of qualia: “. . . the conductor waving her hands, the musicians concentrating, patrons shifting in their seats, and the curtains gently and ever-so-slightly waving” (1995, p. 1).

This, I should take a moment to note, brings us to the misleading confusion I fear is hiding in Rosenthal’s “all is phenomenal” position. If all form is itself “qualia,” then our image of the external world is entirely qualia — the kitchen, its table with coffee cup, the cup’s whiteness, the spoon stirring, the curtains waving — and the question, rather than focusing on accounting for qualia, is then more general: it is the question of the origin of the image of the external world (Robbins, 2013). This image is that phenomenal experience that the hard problem in fact tasks us to explain. But then I can think of no subconscious

mental state that qualifies for the phenomenal in the same way as does our image of the external world. Seeking the explanation of both — subconscious mental states and the conscious perceived world — as the phenomenal in this sense, would be truly a misdirected effort.

In any case, while in this discussion of flowing events we have but briefly touched the question of the fundamental memory that underlies the perceived continuity of these changes (Robbins, 2004), and therefore underlying any supposed HOT as well, we are seeing a portion of the global dynamics of the brain — that portion responding to these flows — clearly involved in the specification of a qualitative form. Further, this portion must be integrally linked, via feedback loops, etc., to other coordinate aspects of the event. Imagine for example that the rotating cube is translating forwards or backwards across the table's texture gradient, while via the height to texture unit ratio, maintaining its perceived size constancy. Or imagine that it is our cubical cup that is rotating while our hand is stirring with a periodicity that is in phase with the rotation. Or imagine that while stirring, our hand itself is exerting a small force via the spoon to vector the (yet size constant) cup slowly towards us. Or, were the cup moving towards the cereal bowl, there is that tau ratio specifying severity of impending contact — again a complex relation defined over the flow. Is this complex tau relation not the actual relation required in yet another HOT (“The cup is about to smash into the bowl”) purportedly needed for making this aspect of the scene conscious? This is simply to say that in these considerations of the brain's dynamics re flow fields, we are not only seeing the beginning basics of explanation of at least one very subjective experience, namely that of dynamic form, but simultaneously we are again seeing that many aspects of the event, if not all, must be naturally bound in this global state by coordinate information — something deeper than abstract, synchronous oscillations.

This principle of complex, coordinate information, I should note, simply reflects comments made earlier by Gibson (1966). He asked us to imagine a comb and taking our finger and running it down the comb's teeth. A rippling visual “wave” is created as each tooth is successively bent and snaps back, all coordinate with a series of staccato sounds, not to mention the haptic-embedded force and feeling as the finger passes down the line of teeth, and where each of these modalities is releasing information coordinate with the others and all certainly available with the global dynamics of the brain while responding to this event.

As we have seen here, in the subject of the unity of conscious experience, these dynamic structures of invariance, for which the study is in its infancy, are critical, and begin to give us glimpses into the basis by which the brain is tying it all together. What co-representational, relational HOTs would look like — given the relational information is in fact so dynamic and complex — other than these relations themselves as embodied in the brain's dynamics, becomes very problematic. It seems safe to say, as this understanding of the information in events progresses, that the notion of co-representational HOTs will become increasingly questionable.

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Critical Notices
Book Reviews
Book Notes

The Neuroscience of Freedom and Creativity: Our Predictive Brain. Joaquín M. Fuster.
Cambridge: Cambridge University Press, 2013, 282 pages, \$29.99 paperback.

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Since the turn of the last century, an ever-increasing number of psychologists and biologists have argued that action and perception are fundamentally connected to each other. We perceive so that we can act. Joaquín Fuster has pushed this idea for most of his career in neuroscience, collecting evidence that not only do perceptual processes and decisions to act inform one another, but also that all of cortical memory is comprised of ever-changing, distributed patterns of connections among neurons that have been defined by experience. These patterns, which he calls “cognits,” are hierarchically organized by depth of complexity and increasing abstraction. These memory networks connect neurons across discontinuous cortical regions of prefrontal and posterior association cortex. And they overlap each other, such that individual neurons can play a role in many different memory networks.

This view stands in contrast to what had been the mainstream cognitive science assumption: perception, thought, and action each is separable from the other. According to this view, discrete cortical areas are devoted to specific cognitive functions; cognition is modular, in other words. For example, there are single regions concerned with facial recognition or motor programming or working memory, which are only sparsely connected to one another. Fuster has repeatedly argued that his networked model, with its tightly interconnected yet fluidly determined circuits, is an empirically more viable model.

In *The Neuroscience of Freedom and Creativity: Our Predictive Brain*, Fuster takes his perspective one step further and examines what it would mean for our understanding of freedom. If the mind just is a collection of cognits, then in what sense, if any, do we have a free will, or any other sorts of freedom? Fuster outlines his answer in the book, as well as commenting on what this view means for the larger political economy.

Fuster has been an innovative force in cognitive neuroscience. His research has been groundbreaking. He is less adept at translating his science into philosophy, however. In particular, he appears to make the common error of trying to use scientific theories to justify his preconceived notions of how things should be, instead of letting the science lead him. He is not the only one who makes this type of mistake. Indeed, most people who try to save freedom from deterministic science end up being at cross-purposes with themselves.

I use addiction as a case study to explore how this plays out in *The Neuroscience of Freedom and Creativity*. I chose addiction as an example because much of what Fuster says about it is spot-on and important. But in the end, his view of addiction, like his view of

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freedom, becomes untethered from the data and winds up being over-simplified. Let us start first by reviewing how he understands decision-making and choice in our brains.

The Always Changing Mental Landscape of Cognits

Here is how Fuster views human cognition. The association areas in the posterior regions of cortex house our perceptual cognits, networks of neurons sensitive to sensory information. The frontal association cortex contains executive cognits, networks of neurons sensitive to information related to decisions and action. In both regions, cognits are hierarchically organized. At the bottom of that organization and in simpler animals, cognits are small and relatively uncomplicated, representing minimal percepts and motor actions. At the top and in humans, cognits are more complex and represent information abstracted from more basic perceptual or executive cognits.

In primitive animals, the perception-action cycle is circular, with little to no internal feedback from motor output neurons to sensory receptors. But in higher animals, posterior and frontal networks are linked by long reciprocal cortico-cortical connections, which support a dynamic perception-action cycle for sequential behavior, like those found in speech and problem-solving. The primitive sensory-motor circle has been replaced by a perception-action cycle that includes more phylogenetically and ontogenetically advanced structures, including the prefrontal cortex. This, more complex, perception-action cycle can start anywhere: in the internal or external environment, in the posterior or the frontal regions. Moreover, complex, goal-directed behavior can mobilize several perception-action cycles at the same time (or in sequence).

Cognits form the basic units of long- and short-term memory. Each new memory becomes associated and integrated with concurrent stimuli and pre-existing memories at other levels. Moreover, if sensory input starts a perception-action cycle but the subsequent action cannot be immediately completed, then short-term or working memory bridges the temporal "gap" in the cycle, holding information online until it is needed. The activity of working memory occurs in the prefrontal cortex but the items held and used by working memory are stored elsewhere. Working memories have the same structure and location as the long-term memories to which they refer, for they are just the temporary reactivation of the long-term memories, held in the cognits of cortex. In general, cognits follow Hebbian learning principles and are formed through temporally coinciding synaptic events. In Fuster's theory, however, cognits can also be created after just a single event and modified by just a single input.

The bottom line is that all decisions or choices that our cortex makes are completely embedded in some perception-action cycle or other. "In that manner . . . we choose our guiding memories and principles, our venue and means of expression, our friends and mates, our goals and rewards" (p. 108). Consequently, according to Fuster's view, as with most biologically plausible views of decision-making, there is no "autonomous and mysterious" center that is the repository of free will.

If this is the case, is there any sense in which we can say that we are free? Fuster answers yes. And the point of the book is to explain how and why.

Freedom to Choose

Fuster thinks of freedom as a freedom to choose. Our freedom is the freedom "to choose, to think, to plan, to decide, to do, to undo, or not to do" (p. 111). It is the ability of our cortex to deliberate and make choices among alternatives. "Our brain is free to choose and act, naturally within the constraints of the nervous system itself and the world in which we live" (p. 110). Our cortex selects at every moment among innumerable options. Fuster believes that the more choices we have, the more freedom we have.

Of course, each decision is nothing more than a series of causes and effects, determined by the laws of physics and chemistry. One would think that, therefore, there is little room for anything resembling traditional notions of free choice. Fuster, however, thinks that the possibility for freedom “expands” because “most neural transactions, especially in the cerebral cortex, are nonlinear and probabilistic, not strictly determined by the self, but by changes around us and by decisions of others” (p. 137). The room for free will grows even more “if we take into account the enormous multiplicity of influences weighing on, if not determining, almost all our decisions” (p. 137). It is this view that I shall challenge: that the more complex the causal pathways to a decision, the freer the decision is.

Fuster is not alone in his view. Several philosophers argue for a similar perspective: that we should understand freedom from a pragmatic, functional perspective; that free will just is our ability to choose effectively in an ever-changing environment (cf., Banja, 2015; Dennett, 1984; Nahmias, 2006). Free will reflects of our capacity to select the most adaptive behaviors from a range of possible behaviors before us. As Fuster puts it: “We are free inasmuch as the PA [perception-action] cycle, which joins us to the environment, can lead us by choice between alternatives to high probabilities of success and low probabilities of failure” (p. 110).

Such a view of free will is quite far from what philosophers normally mean when they discuss the concept. Perhaps John Banja states this incompatibility best: “In positing a contextualized, embodied, adaptive, improvisatory, recurrently vectored interaction of sensory inputs and behavioral outputs, the evolutionary account redefines the ‘free’ of free will in a way that bears little resemblance to the philosophical tradition’s compatibilist versions relying on contra-causal willing” (2015, p. 10). Instead of defining freedom as being able to do or choose otherwise under the identical conditions, Fuster, like Banja, ties freedom to current actions and actual possibilities. This does not mean that freedom is connected to conscious deliberation, however; according to Fuster, choices are “to a large extent biased if not determined by some circumstances of the moment and some unconscious motives” (p. 186). Just your brain being able to choose among alternatives is enough for freedom.

Where Fuster departs from other philosophers who promote this view is in how he applies it to particular cases. In particular, he diverges from others in the analysis of decision-making in cases of addiction. Do persons with addiction freely choose to use, or do they become slaves to their substances of abuse? Most philosophers hold that persons with addiction remain free; Fuster does not. The differences between the two analyses are instructive. A slightly deeper dive into the neuroscience of addiction will help us understand addiction’s neurobiological mechanisms as well as why this view of freedom as choice is, at bottom, problematic.

The Freedom to Use

Equating freedom to choice for most philosophers means that persons with addiction are responsible for their actions, for at each choice point, there is a very real sense in which the individual could have elected not to use or abuse. Such a perspective is not out of bounds — indeed, most psychologists believe that persons with addiction are responsible for the consumption of their drugs of choice (Buckwalter, 2014; see also Uusitalo, 2015), and most community-based treatment programs are predicated on the idea that persons with addiction can and do choose to use; hence, they can choose to stop. Insofar as people can alter their behavioral choices in response to environmental information such that they are able to select the most adaptive or useful, then that ability points to a version of freedom that they have. They are free in so far as they *can* choose

behaviors that promote survival over those that do not (or do not as much), regardless of whether they *actually* make the most adaptive choice.

In contrast, Fuster holds that, “Drug addiction is the clearest example of freedom mindlessly exercised to its own demise” (p. 116). The reason is that, “As dependency increases in the addict, the PA [perception–action] cycles guiding normal behavior drop out. At the same time, the cycle of addiction to the drug restricts itself ever more tightly in drug-seeking behavior. That behavior becomes associated with concomitant sensory stimuli in the creation of new cognits. . . . By . . . associative retrieval, the stimuli by themselves trigger irresistible drug-seeking behavior; a pathological perception–action cycle driven by positive feedback” (p. 116). In sum, addicted persons’ “decisions are far from free, in that there are few alternatives to their abnormal behavior” (p. 129).

Fuster’s views echo the tenets of the so-called disease model of addiction. He is in good company, in that the disease model of addiction has received widespread support across a range of expert institutions, including the United States National Institute on Drug Abuse (1999, 2009), the World Health Organization (2004), and the American Psychiatric Association (2013). The position of the United States National Institute on Alcohol Abuse and Alcoholism (2013) is that “alcoholism is a disease in which voluntary control of behavior progressively diminishes and unwanted actions eventually become compulsive. It is thought that the normal brain processes involved in completing everyday activities become redirected toward finding and abusing alcohol.”

This view has also made its way into lay approaches to explaining addiction, including what is advocated in Alcoholics Anonymous, Narcotics Anonymous, and other similar community support groups. For example, the on-line popular medical site, MedicineNet.com (2015), asserts that “Alcoholism is a disease. The craving that an alcoholic feels for alcohol can be as strong as the need for food or water. An alcoholic will continue to drink despite serious family, health, or legal problems. Like many other diseases, alcoholism is chronic, meaning that it lasts a person’s lifetime; it usually follows a predictable course; and it has symptoms. The risk for developing alcoholism is influenced both by a person’s genes and by his or her lifestyle.” For each of these institutions, addiction is seen as a chronic, neurobiological pathology that robs its victims of their ability to control their behavior with respect to their substances of abuse.

Indeed, some researchers consider a failure to inhibit drug-seeking and drug-consuming behaviors the very definition of addiction (e.g., Fillmore and Weafer, 2004; Finn, Sharkansky, Brandt, and Turcotte, 2000; Lyvers, 2000). Others, however, do not find this view persuasive. Echoing the arguments of Thomas Szasz (1974a, 1974b) to distinguish between those “disabled by living” and true illnesses, Hannah Pickard, for example, claims that addictive behaviors are in fact not compulsive. She notes that “drug-seeking and drug-taking behavior appears to be deliberate, to be flexible, and to involve complicated diachronic planning and execution” (2012, p. 43). The notion of compulsion, however, denotes an irresistible desire, one “so strong that it is *impossible* for it not to lead to action. The compelled person has no power to do otherwise” (*italics hers*, p. 42). True actions — and not reflex or automatic movements — require alternatives in behavior. True actions require choice, but genuine choice belies the notion of compulsion.

Pickard supports this conceptual argument with biological considerations. She contends that there is nothing in neurobiology that suggests that there is something fundamentally different about desires for a substance of abuse than any other desire, though they might be stronger and more insistent than ordinary wants (see also Dill and Holton, 2013). Nor does the neurophysiology of addiction suggest that control gets lost.

I believe, though, that Pickard’s descriptions are inaccurate. Generally, when psychologists and psychiatrists speak of compulsive behaviors, they are not referring to a

behavior that cannot be controlled under any or even most circumstances. Even the tics of Tourette's syndrome or Obsessive-Compulsive Disorder can be resisted for a while. Instead, clinicians use "compulsion" to refer to behaviors that persevere despite adverse consequences or despite being the incorrect response in choice situations (the term can also refer to the persistent re-initiation of a habitual behavior; cf., Everitt and Robbins, 2005). Persons with addiction are compulsive in this sense of the word; Fuster is right about this.

However, what I find significant about addiction is not the compulsive drug-seeking behavior, but rather that the affective-cognitive functioning of the individual as a whole is significantly impaired. Hence, Fuster's suggestion that "drug addiction is equivalent to adding a new drive to the organism, as compelling as any other, and more destructive than all" (p. 116) is not quite accurate either. Addiction is not a new drive in an otherwise normal brain, nor is it "an all-consuming PA [perception-action] cycle that heavily restricts the freedom of the patient" (p. 116), as he also suggests. Instead, addiction changes the very structure of the brain, altering the possibilities of perception-action cycles.

Brain-imaging studies of persons with addiction show physical changes in areas of the brain associated with judgment, decision-making, learning, memory, as well as with inhibitory control (Fowler, Volkow, Kassed, and Chang, 2001). Cortical degradation in persons with addiction underlie impairments in problem-solving and cognitive flexibility, which are also relevant to understanding why persons with addiction behave the way they do (Fein, Klein, and Finn, 2004; Fein, McGillivray, and Finn, 2006; Pfefferbaum, Desmond, Galloway, Menon, Glover, and Sullivan, 2001). In addition, they have difficulties with evaluating their environment and then selecting the most effective response strategies (cf., Oscar-Berman and Marinkovic, 2007). In short, substance abuse impairs executive and motivational functioning in general, which in turn affects self-regulation and goal-directed behaviors. These changes impact the rate, amount, and time of addictive consumption, but they also affect a whole range of other activities. For example, intoxication, reduced impulse control, and aggression are highly correlated with a range of chemical addictions.

Nevertheless, these changes to executive and cognitive functioning do not support the view that persons with addiction are not free to choose, as one might think. Banja (2015) argues that persons with addiction do indeed freely choose to use because they could engage in practices that would diminish the chances that they would act on their cravings, yet they do not. Prior decisions to control behavior might entail that later decisions and actions were not compelled. This in particular is the way the criminal justice system justifies holding drivers responsible for driving under the influence of drugs or alcohol: even if drivers were not in control of their decision-making faculties at the time of their arrest, they were in control back when they were sober and decided to consume with their car keys available.

I might decide to forgo purchasing chocolate at the grocery store now to prevent myself from absent-mindedly eating it later in the evening while watching TV. I have freely and deliberately arranged my environment such that acquiring candy at a later decision-point becomes more onerous, which would then influence my decision about eating the sweets. The suggestion is that we freely choose those sorts of environment-arranging activities, which then trickle down into our being responsible for the later outcomes of our environmental arrangement. Banja, Pickard, and others, argue that persons with addiction could choose to arrange their environments such that they can't use.

Can persons with addiction actually choose in this manner? I argue that they are just as free (or as not free) as the rest of us are in those circumstances. Which is to say: most people do very poorly in trying to arrange their environment so that they force certain choices or behaviors later.

Directly opposed to Pickard and Banja, and in line with Fuster, I advocate taking the idea that addiction is a complex chronic illness very seriously, and this means that it should be treated in a fashion similar to other complex chronic illnesses. Consider: substance-use addiction has been tied to a complex interaction among genes, individual choices and behaviors, and the surrounding environment, which results in very specific pathophysiologic responses (see also Levy, 2013). So have type 2 diabetes mellitus, hypertension, and adult-onset asthma (McLellan, Lewis, O'Brien, and Kleber, 2000). Tolerance (or intolerance) for alcohol, for example, appears heritable (Chao, Kiou, Chung, Than, Hsu, Li, and Yin, 1994; Newmark, Friedlander, and Thomasson, 1998; Schuckit, 1994; Schuckit and Smith, 1996). However, the risk factors for diabetes and hypertension (e.g., obesity, stress, and inactivity) are also all strongly linked to family traditions, culture, and personal preferences (e.g., Mitchell, Kammerer, Blangero, Mahaney, Rainwater, Dyke, et al., 1996; Svetkey, McKeown, and Wilson, 1996), just as are addicted persons' original decisions to consume alcohol or drugs. In all these cases, while the initial choice to consume or eat excessively or forgo exercise is perhaps voluntary, genetic inheritance as well as the sociocultural environment amplify and shape the effects of these decisions.

Importantly, diabetes, hypertension, and asthma require continued care through the patients' lifetimes. There are medical treatments for these ailments, to be sure, but, similar to recovery from addiction, treatment success also depends upon a patient's willingness to adhere to particular regimes. And compliance is an issue across these illnesses. Less than 30% of patients with adult-onset diabetes, hypertension, or asthma observe the diet and behavioral changes required to reduce the risk factors for recurrence (Clark, 1991; Dekker et al., 1993; Graber et al., 1992).¹ More importantly, "relapse" rates are similar across these illnesses as well. Up to 50% of adults with diabetes and somewhere between 50 and 70% of adult patients with hypertension or asthma have recurrent symptoms each year that require medical care (Clark, 1991; Dekker, Dielemann, Kaptein, and Mulder, 1993; Graber, Davidson, Brown, McRoe, and Woolridge, 1992; Schaub, Steiner, and Vetter, 1993). These rates are virtually identical to what we find with persons with addiction: somewhere between 40 and 60% of patients treated for alcohol or drug dependence return to active use within a year of some treatment intervention (Finney and Moos, 1992; Hubbard, Craddock, Flynn, Anderson, and Etheridge, 1997; McLellan and McKay, 1998).

The point here is that for persons with addiction, prior control of their decision-making regarding whether to consume, is virtually identical to what we find in other complex, chronic illnesses. These patients are not very good at arranging their environments to encourage compliance with their treatment regimens. Of course, one could also conclude so much the worse for all chronically ill patients. One reason that they are all ill is that they have repeatedly made very poor decisions about their behaviors and now have to suffer the consequences.

But wait, there is more. If we look at other cases of putative historical control that do not involve illness, we still see similar patterns of failure. For example, almost 16% of professional football players in the United States file for bankruptcy during their first 12 years after retirement, despite having earned an average of \$3.2 million (in 2012 dollars). Neither the amount of money earned nor the years spent playing affect the likelihood of filing for bankruptcy (Carlson, Kim, Lusardi, and Camerer, 2015). This rate is comparable to the bankruptcy rates for all Americans of the same age. Even though pro-football players, unlike most young adults, accumulate great wealth, many fail to organize their environments such that they would have appropriate resources upon retirement. And they do this, despite knowing full well that their sports careers are likely to be brief.

¹And, just as with addiction, outcomes are poorest among those with low socioeconomic status, few family or social supports, or other psychiatric disorders (Gerstein and Harwood, 1990; McLellan et al., 1994; Moos, Finney, and Cronkite, 1990; National Institute on Drug Abuse, 1999).

But there is nothing special about football players' lack of ability to translate sudden wealth into financial security. Lottery winners fare even more poorly; they file for bankruptcy at twice the rate of the broader population (Hankins, Hoekstra, and Skiba, 2011). The United States Certified Financial Planner Board of Standards estimates that nearly a third of lottery winners will go bankrupt at some point after winning (cf., Anderson, 2012).

When we think about how many people begin diets on 1 January, only to have them end on 2 January; how many people have idle gym memberships, unused running shoes, yet plans for regular exercise; when we consider that almost 70% of Americans are overweight or obese, yet less than 20% meet the federal guidelines for exercise (National Center for Health Statistics, 2015; National Institute of Health, 2012); we can surely conclude that the sort of historical control that Banja adumbrates just does not reflect the abilities of the majority of humans. We are not very good at sacrificing short-term rewards for long-term goals, even when operating at full cognitive capacity. Is it theoretically useful to claim that so many of us are freely irresponsible? Perhaps a different way of describing human decision-making and a different approach to understanding freedom is warranted.

Constrained Choices

Fuster is sensitive to the idea that we are not very good at the sort of cognitive control that Banja and Pickard propose. He discusses this concept in terms of “delay discounting”: the idea that the depreciation of the value of a reward is positively related to the time that it takes to be received, or, perhaps simpler, it is the devaluing of future outcomes relative to present outcomes. Fuster agrees that delay discounting belies freedom; however, in line with Banja, he believes that this sort of lack of control indicates a weak will and is endemic in contemporary society, instead of reflecting normal human behavior and typical decision-making. It's what wrong with the world today — we are coddled by social programs, and, as a result, we do not learn how to plan effectively and then act upon those plans: “In a very real sense, delay discount and short-term thinking rob the liberty of the modern citizen to plan for his future. The traditional value of saving for security is sabotaged by official assurances and insurances” (p. 123). For persons with addiction, the implications can be deadly: “the lack . . . of responsibility leads to enslavement, a total and sometimes fatal loss of liberty” (p. 213).

Perhaps unfortunately, Fuster pushes this line to support of his own political views: “Consumer society has regressed to financial immaturity and short-term decisions aided by the welfare state with its ‘entitlements’” (p. 122). But of course when one is discussing biological arrangements that have been set down by evolution, the time course in which we should consider human behavior is much, much longer than Western democratic society. That is barely a blip on our historical timeline and our behavior should be discussed and measured across our full history, not just the past 250 years. Indeed, so far as I can tell, no one really knows what causes delay discounting (cf., Angott, 2010), though its effects are well documented across a spectrum of human cultures and decision-making types. Why we discount delays in reward is, of course, an empirical question, and we should treat it as such instead of using it to support a broader agenda.

So: here is where we stand. Humans, in general, are very poor at selecting the best option for action among a range of choices. In particular, we are very poor at postponing gratification when it would be better in the long run to do so. This is true of persons with addiction. It is also true of the rest of us. For reasons unknown — though it is tempting to dream up just-so stories of how our decision-making faculties evolved when life was nasty, brutish, and short — this is just how we are. There seems to be consensus among those who advocate for a view of freedom based on making adaptive behavioral choices

from a range of alternatives including that being constrained in decision-making reduces one's freedom. The more constrained we are, the less free we are. I conclude: given this definition of freedom, and given what we know about human psychology, we are not terribly free creatures.

Let me suggest that it might be more useful for science and theoretically more effective to understand human decision-making as the multifarious and complex process that it is, and leave it at that. At bottom, trying to divine who is freely deciding and under what conditions is a fool's errand; it is not getting at anything meaningful from a psychological, sociocultural, or biological point of view. It is better to recognize that our best science tells us that human choice is driven by hundreds, if not thousands, of influences and is filtered by brains that have been formed and deformed by genes, environment, and previous decisions and behavior, and then end there. Philosophy's traditional versions of free will might be moribund, but so too are the biologically driven ones. The concept itself is simply inapplicable to the complex social, psychological, biological creatures that we are.

Fuster has written an accessible book that describes his views on the interconnectedness of perception, memory, and action quite well. His work has been part of a larger theoretical perspective and research agenda that has fundamentally reshaped cognitive neuropsychology over the past several decades. However, his foray into philosophical accounts of freedom is less successful. In the end, I do not see this as his failing. Rather, the concept of human freedom itself is incoherent, and Fuster's book does much to illustrate the great difficulties one has in trying to wedge this idea into science. Ultimately, I believe that this is a project that is doomed to disappoint.

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Psychology Gone Astray: A Selection of Racist and Sexist Literature from Early Psychological Research. Charles I. Abramson and Caleb W. Lack (Editors). Fareham, Hampshire, United Kingdom: Onus Books, 2014, 362 pages, \$29.99 paperback. \$9.99 Kindle.

Reviewed by Brady J. Phelps, South Dakota State University

In the introduction to this unique book, the Editors of *Psychology Gone Astray: A Selection of Racist and Sexist Literature from Early Psychological Research*, make the point that “. . . as academic psychologists, we were surprised how few students, and even colleagues, knew about this chapter in the history of psychology” [p. 1],¹ referring to the involvement of early psychological researchers in the conduct and perpetuation of blatantly racist and sexist theory. The depth and breadth of coverage in this volume is unique, not just for what is presented but for the pragmatic nature of the presentation. The Editors uncover unpleasant facts, but do not leave the reader to walk away offended. Their challenge is presented in the form of a number of thought-discussion questions and activities for more deeply-engaged students. If used diligently, the discussion questions and activities would likely secure a sizable percentage of students to see beyond the offensiveness of this literature, and to see why the writers and researchers of this period were just “doing science” as the psychological science of that day was conducted. The discussion questions could help students adopt what has been termed an historicist view of history instead of the more easily adopted presentist view or hindsight (Seidman, 1983; Stocking, 1965).

In assuming a historicist posture, the discussion questions and exercises allow one to view these as much more than just archaic, crude sexist and racist writings. The Editors also present a cogent overview of methodological issues in comparative research and pose a question that more psychologists need to ponder: “What is it that makes a field of study a science?” [p. 21]. This reviewer thinks that far too many psychologists would simply answer with something like “the use the scientific method” or “the use of inferential statistics and hypothesis testing.” Abramson and Lack lead the reader through a stronger case for what makes a field of study a science, with the examination of five key features: the purpose, the variables, the design, the results, and the presence or context of other factors that may influence the method. The Editors’ discussion of methodological issues provides important context within which to read these primary sources of early psychological research. As Boring (1950) argued, an understanding of history requires an understanding of the larger historical forces operating upon the individuals who lived in a particular time and culture. The individuals who conducted these studies and authored these papers were probably not racist or sexist in any way out of the ordinary, in their zeitgeist. They were simply conducting research as scientists of their day went about the practice of science.

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¹All page numbers in brackets [] refer to pages in *Psychology Gone Astray*.

As for the actual writings presented, Abramson and Lack include over 20 primary sources by prominent psychologists and theorists, ranging from James Cattell to William McDougall and to Alfred Binet's assistant, Theodore Simon. Also included are now-recognized early feminist psychologists such as Leta Stetter Hollingworth and Helen Thompson Woolley. The various primary sources can be roughly grouped into categories of research articles on racial and/or ethnic differences in abilities, sex differences in abilities, and questions regarding the inheritance of mental abilities and/or the measurement of intelligence. Finally there are a number of eugenics-slanted articles on the issues of insanity, inferiority, and/or "degeneracy" in women, American Indians, Latinos (Mexicans), Africans (Negroes), Jews, various European groups, and poorly defined groups such as different European "races" and "savage races."

Race

Theoretical stances conceptualized as empirically-supported hypotheses of "racial inequality" based on evolutionary theory (Dennis, 1995) were used by Galton, Spencer, and others, but Darwin himself was not involved nor concerned with this; he more directly contributed to the issue of race with his 1871 work *The Descent of Man*. The Editors of this volume present a quote from Darwin's (1839/1996) *Voyage of the Beagle*: "If the misery of our poor be caused not by the laws of nature, but by our institutions, great is our sin" (p. 503). Considering that "the poor" more likely included racial minorities and other disadvantaged or disenfranchised groups such as non-English speaking immigrants, the apparent tone of Darwin does not come across as racist or hereditarian. However, in other places, Darwin described the people of Patagonia and the Tierra Del Fuego archipelago in subhuman terms (Darwin, 1839/1996, p. 213). Other writers have argued that Darwin also contributed to the sexism of the zeitgeist. Shields and Bahtia (2009) concluded that "He [Darwin] believed that the intellectual, sensory and physical capacities of females were inferior to those of males, across the board" (p. 114). One has to put that quote in a historicist perspective; in the mid-nineteenth century, relatively few men would have viewed women as equals. Darwin's positions here did not represent outliers.

Abramson and Lack present a very thorough and methodically researched lead-in with their introduction to the actual writings. Race psychology, also known as "empirical racism," was closely tied to the "science" of eugenics; these articles come across as the least empirically supported, but besides eugenics' caricature of theory, the "variability hypothesis" is a recurring theme. The arguments of the variability hypothesis are that the normal distribution of male traits and abilities had significantly more variation than the distribution of female traits and abilities, i.e., the distribution of female abilities was represented by a much narrower bell curve, with far fewer women ever displaying superior ability or traits characterized as eminence. While this means that more men would be represented at the lower end of the normal distribution, men would also be over-represented at the highest part of the distribution (Noddings, 1992). Surprisingly, at least to this reviewer, in this small sample of the relevant literature, more than one writer made reference to Lloyd Morgan's (1895/1903) thoughts as justification for their conclusions. The Editors point out the a priori assumptions of theorists who presented non-falsifiable interpretations of their findings.

Sexism

An example of mainstream early 1900s sexist psychological science is an article by James Cattell (1903), presenting his list of the 1,000 most eminent men from 600 BC to the first

half of the nineteenth century. Cattell explained that he arrived at his list of eminent men by searching various popular biographical dictionaries and encyclopedias from America, England, France, and Germany. Since he was developing a list of eminent *men*, Cattell admitted that women simply do not have an important place in his compilation of names from other lists, women being represented by only 32 individuals. He explains that with the exception of the poet Sappho, “. . . women have simply not excelled in poetry or art” [p. 61]. Furthermore, according to Cattell, the areas of art and poetry are environments in which women *should* find a favorable milieu. Cattell appealed to the then-popular belief of the variability hypothesis (Noddings, 1992) as justification for his findings and conclusions.

In contrast, Woolley (1914) rebutted the burgeoning literature on the variability hypothesis. “During the four years since my last review of the literature of the psychology of sex, the number of experimental investigations in the field has increased to such an extent that whereas it was difficult at that time to find anything to review; it is now impossible to review all I could find” [p. 167]. In another of the primary sources reproduced by the editors, Hollingworth (1916) also disproved the variability hypothesis, concluding, as had Woolley, that the supposed greater variability of males was simply not found in the existing data.

Eugenics

Burt (1912) presented the eugenics perspective in his review of the inheritance of “mental characters,” which appears to refer to both mental abilities and capacities and the likelihood of enduring improvement in these as a result of the environment. Burt made three assertions: eminence and genius are strongly inherited, feeble-mindedness is even more strongly inherited, and that the effects of the environment (i.e., training, educational experiences, etc.) on specific practices are very limited, with no generalization to other mental abilities. Burt (1912) noted Lloyd Morgan as a competent authority on evolution and mental faculties being subject to selection in one individual’s lifetime but not being inheritable by the offspring.

Morgan’s canon is used as a justification by several writers. Morgan’s canon stated that “In no case may we interpret an action as the outcome of the exercise of a higher psychical faculty, if it can be interpreted as the outcome of one which stands lower in the psychological scale” (Morgan, 1895/1903, p. 59). One researcher went so far as to suggest a “canon of racial psychology” based on Morgan, and this suggestion is given the rationale of guarding against racial bias, e.g., by Garth (1921): “In no case may we interpret an action as the outcome of the exercise of an inferior psychical faculty, if it can be interpreted as the outcome of the exercise of one which stands higher in the psychological scale, but is hindered by lack of training” [p. 219]. Despite this cautionary posture he concluded that “mixed blood” Indians tended to achieve higher measures than “full blood” Indians on a variety of tests. Garth doubted that any equality of school attainment would remove the differences between the groups.

Sterilization and Infanticide

This review has left some of the worst for the last. Amongst the more inflammatory and racist arguments made by the eugenicists, the literature lacked any pretense of scientific research and simply argued that something radical had to be done about the social problem of increasing numbers of degenerate “idiots” and the insane. The British physician, R. R. Rentoul (1910-11) pleaded that, “. . . we can, by sterilizing a large number

of mental degenerates, people classified as habitual criminals, and vagrants, lessen the total of this world's suffering . . ." [pp. 79–80]. Rentoul's statements, made in Great Britain, were hardly cultural aberrations. To properly contextualize the eugenics position from a presentist perspective, consider what the revered American jurist Oliver Wendell Holmes concluded in 1927. Holmes argued that society should not wait for the inevitable outcome of non-intervention in affairs of genetics and human reproduction: "It is better for all the world, if instead of waiting to execute degenerate offspring for crime or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind" (Buck v. Bell, 1927, p. 274).

Abramson and Lack present the a priori bearing of these writers and one of the most illustrative is that Kenealy (1911). This writer argued that a case of a robustly healthy and fit infant, born to sickly and unfit parents, while initially presenting a quandary for the eugenicists, actually represents an instance of "devolution." "A degenerate, in short, may be defective and patently abnormal, or he may be a mere revision to a former and inferior type. . . . One which was perhaps normal to an antecedent evolutionary epoch in the stock from which he sprang . . ." [p. 82]. According to Kenealy, once in the very remote past, the single-celled amoeba possessed a "latent aspiration" to evolve, to become human, and in the present, the aspiration of the single-celled organism is now fact. The cells, however, making up the human, can lose touch with the vital aspiration and undergo de-evolution, or as Kenealy (1911) said: "The moment, however, that the cells . . . conform, without protest of pain or of disability, to a lower grade of being, Devolution has begun. In that moment, man, having emerged from, has taken the first step in reverting to, the single-celled amoeba. My 'healthy' infant, his cells ceasing to aspire, and conforming without protest to the lower grade to which they have relapses, has turned back his face to the darkness whence his kind have come" [p. 84].

Abramson and Lack accurately represent the attitude of the literature from 100 years ago, and expressly capture the tone of the original sources. Instructors and students rarely read primary literature, let alone primary sources such as represented here. Nothing can properly reflect the timbre of such empirical racism and sexism as the writers themselves. Not all undergraduate students will be able to contextualize this literature. This volume could more likely be used by an instructor of an Honors course in the History of Psychology and or a similar course in the History of Ideas or the History of Discrimination.

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Propriety and Prosperity: New Studies on the Philosophy of Adam Smith. David F. Hardwick and Leslie Marsh (Editors). New York: Palgrave Macmillan, 2014, 302 pages, \$115.00 hardcover.

Reviewed by Maria Pia Paganelli, Trinity University

I recently reviewed the literature on Adam Smith and the Scottish Enlightenment (Paganelli, 2015). What I found is that Adam Smith is very much alive and studied but in ways different from the past. Smith is engaged in current debates not just in historical ones. Scholars wish to understand what Smith said to his contemporaries but also, and especially, what he can tell us today. Smith's ability to converse with us today is also reflected in his ability to converse with different audiences. His background, education, and interests covered most of the spectrum of knowledge. So today he can have something to say to everyone, well, to many at least.

Propriety and Prosperity: New Studies on the Philosophy of Adam Smith, edited by David F. Hardwick and Leslie Marsh, is an example of this recent trend. The editors are based in a medical school and claimed to be interested in Smith because they are actively involved in science, markets, and interactions with philanthropic institutions as well as the government, and in issues related to complexity, emerging orders, distributed knowledge, institutional design and bounded rationality (p. 2).

Therefore the volume presents a slightly different picture of Smith than the one a "regular" Smith scholar would expect. While the depth is at times questionable, the breadth is definitely a strong point of the Smith presented in this book. The Smith we find in this volume is a Smith who can comfortably talk to his contemporary Scottish philosophers (Gordon Graham), to his French immediate predecessors and contemporaries (Laurent Dobuzinskis), to his French contemporary translators such as Sophie de Grouchy (Spyridon Tegos), as well as to today's scholars interested in, say, trust and trustworthiness in the field of behavioral experiments (Roger Frantz), or in self-deceit and in cognitive biases (Jonathan Wight), or to scholars interested in understanding sympathy and empathy and their differences (Joshua Rust as well as Gloria Zuniga y Postigo), or sensory perception (Brian Glenney).

The Smith we find in this volume is also a Smith that lets us use different styles of conversation. On the one hand, Jack Weinstein uses his personal experience with his dog to show that Smith's claim that humans behave differently from other animals does not hold today. On the other hand, Eugene Heath uses a meticulous and superb scholarly analysis of the meaning of metaphors, both in Smith and in general, to understand the meaning of "the invisible hand." Similarly, this Smith is able to sustain a conversation on the beaten paths of the "Adam Smith Problem" (Lauren Hall) as well as on the uses and abuses of the "invisible hand" (Gavin Kennedy).

The last essay of this collection, in my view, is the scholarly work that most captures, even if possibly unintendedly, the spirit of the book and the image of Smith that emerges from it. Craig Smith situates Adam Smith in his time, carefully dissects him, and sees what can and what cannot be used in today's context without subjecting poor old Adam to unnecessary and uncalled for violence. Craig Smith uses the idea of social or distributive justice to show how we too easily want Adam Smith to agree with us, so we too often do not listen carefully to what he is saying. Adam Smith does not talk about social justice so asking him about it is asking him the wrong question. For us, social justice is a sort of combination of justice, benevolence, and "police," but for Adam Smith justice, benevolence, and police are three separate and non-compatible things. Justice is a necessary component of society and emerges from resentment. Benevolence is not necessary for society. It is just a nice ornament of it, and it arises from our humanity, not from our resentment. Policies emerge from expediencies, not from resentment, not from humanity. Policies are enforced coercively, while justice takes the form of rules, and benevolence is voluntary. Talking about distributive justice in (or with) Adam Smith may therefore be misleading unless we are willing and able to listen carefully to what he is saying.

The volume, through its strengths and weaknesses, is in this sense a contribution for Smith experts and non-experts alike: it tells us that we can still comfortably engage in conversations with Adam Smith. But like in any conversation, we need to listen carefully to our interlocutor.

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- Paganelli, M. P. (2015). Recent engagements with Adam Smith and the Scottish Enlightenment. *History of Political Economy*, 47, 363–394.

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The Feeling Body: Affective Science Meets the Enactive Mind. Giovanna Colombetti. Cambridge and London: MIT Press, 2014, 270 pages, \$42.00 hardcover.

Reviewed by Patrick Seniuk, Södertörn University, Stockholm

Giovanna Colombetti's book, *The Feeling Body: Affective Science Meets the Enactive Mind*, is a novel contribution to the affective science literature addressing emotion theory.¹ Her book critically leads readers through several influential theories that developed out of early scientific research on emotions. She re-evaluates the conceptual veracity of these theories (and their legacy) on their own terms, as well as from within the contemporary context of affective science. This context, whose goal posts have shifted substantially on the heels of post-modern theory, continues to be redefined under the emergent influence of approaches such as that of enactive mind and embodied cognition. Colombetti taps into the bodily-inspired zeitgeist by incorporating philosophical phenomenology as a way to exploit the theoretical and experiential shortcomings she attributes to traditional theories of emotion. The book is successful, if viewed as a cogent survey of the theoretical landscape in affective sciences. The phenomenologically inspired chapters on embodiment, however, are less auspicious. While enactivism and embodiment share a theoretical affinity, the book fails to deliver an exacting synthesis of these two perspectives. With this in mind, my review explores Colombetti's unique conceptualization of affective intentionality, followed by a discussion of the phenomenological shortcomings found in Chapter 4.

According to the picture sketched by Colombetti, the science of emotion has tended toward a basic dichotomy between physiological and psychological explanatory frameworks. This division includes theories that ostensibly attempt, but fail, to synthesize both aspects in a holistic model. To properly appreciate the nature of emotions, Colombetti argues that the best way to illustrate that emotions are dimensional, dynamic, and embodied, is to adopt the enactive mind approach (with a phenomenological sensibility). She stipulates that a robust conception of emotions should bear fidelity to the way emotional episodes are experienced by an agent, something she believes traditional theories of emotion have failed to take seriously. Keeping with the trend of embodiment in the cognitive sciences — with help from phenomenological philosophy — Colombetti is committed to the premise that the body is a necessary pre-condition providing humans the capacity for emotional experience.

The term “affect” has acquired a conceptually broad and fluid meaning across various academic disciplines. Colombetti's approach to affect retains that broad quality, but stipulates the sense it is intended to index, namely that to be affected is to display “a lack of indifference [. . .] and a sensibility or interest for one's existence” [p. 1, emphasis original]. The first chapter is an attempt to delineate the conceptual boundaries of affect, which results in the novel

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¹Page references to *The Feeling Body* will be denoted in brackets.

formulation of “primordial affectivity,” a concept that anchors the entire argument of the book. Unsurprisingly, primordial affectivity dovetails well theoretically with enactivism and phenomenology. Primordial affectivity is a feature common to all living organisms, and is characterized by an organism’s world-directed striving or purposefulness. Colombetti contends that “even the simplest living systems have a capacity to be sensitive to what matters to them, and in this sense they are affective” [p. 2]. Simply stated, to be affected is to move or be moved by something *in the world*. It is important to note that the argument does not claim all living systems are conscious, “rather, the simplest living systems already realize a relationship with themselves and the world in which they are situated that entails purposefulness and concern for their existence” [p. 2].

Although there is certainly a resemblance to Heidegger’s ontological structure of care, primordial affectivity is inspired first and foremost by the work of Spinoza, Miran de Baine, and Michel Henry. It also refers to an organism’s capacity to enact *sense making* (meaningfulness) in its environment; it also refers to a domain of existence that the influential theories of emotion have failed to incorporate into their explanatory models. The consequence, according to Colombetti, is that affective science has operated (and continues to do so) from too-narrow a conception of affect. Contrasted with embodied agents who are sensitive to their surroundings, explanations of emotion that emphasize the primacy of higher-level processes in appraisal, action, and decision-making are not confirmed by the way in which emotion is experienced. As such, many traditional accounts of emotion fail to acknowledge that organisms (including humans) do not manifest autonomy in the world as *passive* or *neutral* beings. Instead, they enact autonomous behavior by *selforganizing* and *adapting* according to the demands of their surroundings, from which a meaningful relation between organism and world is engendered without the mediation of cognitive or mental acts, a necessary requirement often postulated by affective scientists in order to elicit “meaning.”

The second chapter is a testament to the breadth of Colombetti’s expertise in the area of emotion theory. She analyzes a number of influential experiments that became the standard reference points in conducting further empirical research within affective science. As such, this research continues to exert influence over contemporary approaches to emotion, in both the cognitive sciences and neurosciences. Three dominant approaches to emotion are assessed in this book; basic emotion theory (BET), psychological constructivism, and component process. The most influential, BET, is given the most attention. And although the analysis of the two remaining theories is protracted, the treatment is more than adequate. The exegesis is excellent; it does not merely recapitulate the standard objections commonly found in the literature. Rather than accepting the objections *prima facie*, Colombetti argues that they do not, in fact, have enough force to undermine the theories. For instance, critics of BET often reject its fundamental thesis that humans possess an intrinsic set of basic emotions (or repertoires) that transcend cultural milieu. BET critics often appeal to anthropological research that putatively offers a refutation of the possibility that there exists a universally shared set of emotions. Some cultures, the anthropological objection goes, do not exhibit or identify this universally “basic” set of emotions posited by researchers. However, Colombetti does not view this type of nominalist objection as a threat to the general premise of BET. It cannot be ruled out that empirical evidence may indeed confirm that certain emotions are ultimately experienced universally; it is plausible that some cultures do indeed experience emotion X, however, X is not recognized in a manner that is identical to the “universally” displayed expression. The physiological or linguistic markers common to most cultures may not map onto X in a different culture, but it nevertheless remains entirely plausible that individuals from different cultures experience the same emotion even though it is expressed in non-identical ways.

The real threat to BET is the identification of basic emotions themselves. Colombetti points out that the choice of emotions in early empirical research was determined arbitrarily. If this is correct, contemporary empirical research on emotions, that draws from the original BET data, subsequently generates new data based on a problematic premise, one that is unable to justify why some emotions are taken to be basic while others are not. In other words, there is no evidence to support the existence of the basic emotions espoused by BET.

The phenomenologically oriented sections of the book consider how the body figures in emotional experience. Chapter 4 is an ambitious attempt to make this relationship clear, but when compared to the success of the earlier chapters, it is not equal to the task; it fails to convincingly synthesize the enactive approach with phenomenological philosophy's approach to embodiment. One particular short-coming is the failure to address the existential phenomenology of Merleau-Ponty, which emphasizes the primacy of situated, non-cognitive bodily appraisal, as one of several concurrent dimensions of embodied experience. This non-cognitive capacity, otherwise known as motor-intentionality, is the basis for embodied sense-making in a given situation (Merleau-Ponty, 1945/2012). Of course, that is not to suggest that the success of the argument necessarily warrants the inclusion of Merleau-Ponty's bodily consciousness. Yet in light of Colombetti's outline of bodily appraisal, an explicit reference to bodily consciousness would serve to strengthen the analysis. This is especially the case given that other contemporary theorists of embodiment and action (see Aho, 2013; Fuchs, 2009; Gallagher, 2005) stress the phenomenological importance of operative intentionality and sense-making made possible within the work of Merleau-Ponty.

A problem that continues to plague the discussion of embodiment is Colombetti's failure to explicitly highlight the experiential link between an emotional episode and the felt experience of that episode. In order to provide a richer theory of emotion, one that extends beyond the experientially narrow conception common in traditional accounts, Colombetti appeals to a phenomenologically inspired "methodology" to describe embodied experience. She also devotes significant attention to the way dynamic systems theory informs the relation between emotion and enactivism. While the details of this influence are not essential for the purposes here, it is worth noting how the dynamism of the enactive mind fits with phenomenology: "emotional forms can be identified and distinguished from one another, we can consider them 'discrete.' Yet *between* them, so to speak, the organism remains affectively engaged" [p. 77, emphasis added]. For Colombetti, "between" is the space in which moods reside temporally, and because they endure over time, she sees mood as that which "primes" us, and prepares us for one particular emotion over another according to the situational demand. She rightly points out that, from a phenomenological perspective, these moods are not moods in the colloquial sense; rather they are feeling experiences that allow us to be open to the world (Heidegger, 1927/2008; Merleau-Ponty, 1945/2012). This idea, she notes, is elaborated further in Ratcliffe's (2008) interesting concept of "existential feelings." These, too, endure like moods, and are disclosed as background feelings that give rise to (or open up) the possibility of intentional experience at all. But Colombetti sees primordial affectivity — sense-making activity — as something that runs deeper than moods (Heidegger) and existential feelings (Ratcliffe).

With respect to the *deep* level of primordial activity, it is not adequately stipulated how it is manifested by the body-subject. This is also the context in which Merleau-Ponty's body consciousness — in the form of operative intentionality — is salient for the analysis. Non-thematic action, he argues, is a fundamental component of conscious experience, which emerges out of an embodied constellation linking the body's kinesthetic and proprioceptive capacities that have no need for mental acts to enact bodily appraisal of a situation. On the

contrary, this mode of consciousness arises by virtue of the body's necessary relationship with the world, whereby even a simple gesture is already meaningful on the basis that sense-making occurs in a perceptual dialogue, a dyadic relationship between an embodied agent and the world. Hence, when Colombetti says that, "emotional episodes as characterized here are instantiations of such sense-making activity, where the organism self-organizes into this or that emotional form" [p. 77], it is unclear how this "form" is experienced or comes into being within a complex organism if emotional episodes run deeper than the disclosing power of operative intentionality. Thus, Colombetti fails to specify at what level of conscious this experiential form is manifested.

This leads to the last issue concerning the phenomenological analysis of emotion and mood. The absence of an explicit articulation of how "instantiations of sense-making" affect the body-subject leaves several questions: Is sense-making experienced as emotions or feelings, or something else? Colombetti does not address whether or not a conceptual or experiential distinction exists between feeling and emotion. Given that she does not use the two terms equivocally, it suggests a distinction. Also, there is no doubt that the book intends to go beyond the standard notion that feelings are the mere experience of an emotion. Gallagher and Bower have pointed to the potentially wide spectrum upon which sense-making (or affectivity) may be experienced, noting that "affect is deeply embodied even to the extent that affective phenomena may [even] be constrained by the functioning of the circulatory system" (2014, p. 234). Considering affect in general, Colombetti's analysis of the relation between bodily feelings and an emotion episode is phenomenologically murky. The unspecified experiential level of emotions is complicated given that she properly recognizes that bodily feelings need not necessarily take the body as its intentional object (Fulkerson, 2013; Merleau-Ponty, 1945/2012; Ratcliffe, 2008). Feeling experience need not be identified as felt inside one's body. The question about how emotions relate to felt experiences, especially when the body is not taken as the intentional object, remains unexplored.

Colombetti instead spends time reassessing bodily action with reference to Drew Leder's (1990) influential book, *The Absent Body*. She contends that Leder's notion that the body is "absorbed" during activity is an inadequate account of the body during action. The description does not properly reflect the way in which we experience our bodies while performing a given activity. She emphasizes that the body is experienced as both conspicuous and inconspicuous; our level of bodily awareness shifts between explicit or implicit. She uses the example of professional dancers who, somewhat surprisingly, describe experiencing their body as an intentional object while they perform. However, this example, in order to be salient, would be improved upon with a phenomenology of dancing itself, if only to explore the counter-intuitive description offered by the dancer. Colombetti draws on the work of Legrand (2007), who proposes that the transparent or absent body be characterized as the *performative* body. This characterization is preferred because it is intended to reflect how the body is experienced during activity without having to become the intentional object. Importantly, I believe Colombetti rightly emphasizes that emotion is infused through bodily experience, however, she again does not say in what way it is experienced during the activity. Undoubtedly, feelings manifest themselves in the background of one's awareness, but there is a problem with the analysis: it is not stipulated how emotion and feeling relate in the context of non-thematic intentionality. Because this issue is not delineated explicitly, the discussion of bodily feelings lacks clarity concerning the way in which feelings are experienced during action. Also, even if Leder's phenomenological description of the absent body warrants a critical re-conceptualization, Colombetti's argument fails to satisfactorily illustrate why the current characterization is not adequate. Having said that, a strong phenomenological description of dancing, which

is pointed to in the text, may be a promising entry point for a more robust critique of bodily absence.

Phenomenological description is open to revision and depends on the level of description provided by the participant, which makes room for rich interpretation. Nevertheless, Colombetti's main focus with bodily "absence" is perhaps attributed to a general anxiety over the historically contested metaphysical status of the body. The absent body may seem far too "disembodied." One ought to be sensitive to this concern, for sure, but on the other hand, Dreyfus' (2002) well-known account of skillful coping addresses the role of bodily absorption during the various stages of skill development, and provides a reasonable account of the way in which the body is experientially conspicuous. Colombetti characterizes absorbed activity as an oscillation, a shift between bodily perspectives of intentionality. This, however, is not a distinction between the feeling body and the felt body. Instead, it is a common sense understanding of feeling, such that the body always features as the intentional object (felt body) of experience: one either has a bodily feeling of the inside, or else it is a feeling on the body. And despite having acknowledged the important phenomenological distinction between the feeling body and the felt body, Colombetti fails to exploit the most phenomenologically interesting perspective of the feeling body, and its relationship to emotion. This under-explored connection is a missed opportunity to add insight to the phenomenological literature of emotion.

This book should be commended for its contribution to the growing literature that is critical of the ostensible explanatory power of emotions associated with neurobiological science. Colombetti has provided a detailed analysis as to why theories of emotion are ultimately conceptually untenable if they fail to incorporate bodily experience. By emphasizing the necessary role of embodiment and affect in cognition, Colombetti demonstrates that lived-experience is infused with affective significance. The phenomenological discussion, however, fails to match the theoretical strength of the book. A lack of precise descriptions and an underdeveloped link between feeling and emotion leave something to be desired when the book is considered on the whole.

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ERRATUM

In the article, “Intentionality and the Aristotelian–Thomistic View of Concepts,” by Thomas L. Spalding, James Stedman, Curtis Hancock, and Christina L. Gagné, *Journal of Mind and Behavior*, 2014, 35(4), 245–262: James Stedman should be changed to James M. Stedman.

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