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From Uncaused Will to Conscious Choice: The Need to Study, Not Speculate About People's Folk Concept of Free Will

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Abstract People's concept of free will is often assumed to be incompatible with the deterministic, scientific model of the universe. Indeed, many scholars treat the folk concept of free will as assuming a special form of nondeterministic causation, possibly the notion of uncaused causes. However, little work to date has directly probed individuals' beliefs about what it means to have free will. The present studies sought to reconstruct this folk concept of free will by asking people to define the concept (Study 1) and by confronting them with a neuroscientific claim that free will is an illusion (Study 2), which invited them to either reconcile or contrast free will with determinism. The results suggest that the core of people's concept of free will is a *choice* that fulfills one's desires and is free from internal or external constraints. No evidence was found for metaphysical assumptions about dualism or indeterminism.

1 Introduction

The question of whether humans have free will is one of the central problems of philosophy. Many debates have raged over the place of free will in a deterministic universe—the impossibility of free human action if every event is just a consequence of previous events and natural laws. Recently the sciences have joined this debate, in particular psychology and the neurosciences. Voices of skepticism dominate, assuming that people's concept of free will is incompatible with the scientific model of the universe, and because we should trust science more than ordinary people's thinking, humans do not have free will. This argument relies on two hidden

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premises, one being a conception of determinism assigned to the scientific model of the universe, the other being ordinary people's concept of free will. In this article, we are concerned with the latter. Scholars typically assume, but never test, how people think about free will. We begin with a brief review of scholarly portrayals of the ordinary concept of free will and then offer a first empirical investigation into what people's folk concept might actually be like.

In surveying the literature, one quickly finds that the main property by which the folk concept of free will is defined is a special form of causation. The list below shows variants of such definitions, ordered by the level of radicalness attributed to the folk concept of free will.

(Conscious) Mental Causation Wegner calls the illusion of conscious will[1] the folk notion that "our experiences of conscious will cause our actions" (Wegner 2002, p. 318). Similarly, Prinz (2003) characterizes the ordinary concept of free will "as the folk psychology notion that the act follows the will, in the sense that physical action is caused by mental events that precede them" (p. 26). Further, it is assumed that human action is ordinarily conceived as entirely caused by conscious events, so accumulating evidence of unconscious influences on behavior contradict the ordinary concept of action: "I emphatically push the point that automatic, nonconscious processes pervade all aspects of mental and social life, in order to overcome what I consider dominant, even implicit, assumptions to the contrary" (Bargh 1997, p. 52).

Nonstandard Causality A stronger charge is that mental causation is fundamentally different from accepted causation. For example, people will agree that a pot of water, if heated long enough *must* boil; it cannot choose to do otherwise. Thus, the outcome is fully determined by the events leading up to it. However, when confronted with a human agent who decides to heat a pot of water, people maintain that the actor could have done otherwise, that his or her behavior was not determined by previous events (Nichols 2004). Prinz (1997) takes this to mean that the folk concept demands the "replacement of usual causal determination through another, causally inexplicable form of determination" (p. 161) and entails a "renunciation of explanation and [a] cutting short of causal chains" (p. 162).

Indeterminism Not only may people believe in an inexplicable causality, they may deny that human action is based on deterministic causality. Maasen et al. (2003) find that the "jargon of free will in everyday language…requires us to accept local pockets of indeterminism in an otherwise deterministically conceived world view" (p. 8).

Uncaused Causes Finally, the most radical assumption that ordinary people are described to hold is that "willfulness somehow springs forth from some special uncaused place" (Bayer et al. 2003, p. 100).

[1] For discussions of the ambiguities in Wegner's concept of *experience of conscious will*, see Bayne (2006) and Nahmias (2002).

All these characterizations originate from scholars' armchairs, in neglect of folk beliefs. What people really believe and theorize about is a matter of empirical fact; and for the latter, armchairs are poor substitutes. Moreover, the characterization of ordinary assumptions must be accurate, because the nature of phenomena such as free will, consciousness, or intentional action cannot be entirely divorced from people's concepts and judgments of these phenomena. A theory that omits such common-sense judgments "runs the risk of having nothing more than a philosophical fiction as its subject matter" (Mele 2001, p. 27). Granted, in some cases scientific descriptions of a phenomenon are orthogonal to or replace people's folk conceptions. For example, when we describe the physical nature of gold, it is sufficient to describe it in terms of its chemical and physical properties. The folk theory of gold adds little and may even muddy our understanding of what gold really is. But free will belongs to a different family of natural phenomena, one that is at least partially defined by human observers. When people puzzle over what free will is and are told that it is nothing but the recursive firing of the, say, telemos structure, it won't be clear that the puzzle has been resolved unless we determine that this structure is actually the referent of the free will concept. And such a determination requires a match between definitional features of the folk concept and features of the neuronal structure, which implies that the folk concept's features are at least partially respected.

So what are these features? Instead of speculating about features of a folk concept from the armchair, one might empirically examine them. The recent emergence of the field of experimental philosophy is an encouraging step in this direction. For example, a number of recent studies have probed individuals' reasoning about human action in light of a deterministic universe (e.g. Nahmias et al. 2005; Nichols 2004, 2006). However, these investigations have focused primarily on people's stance regarding whether free will can exist in a deterministic universe or whether moral responsibility and determinism are incompatible. They did not clarify the composition of the folk concept of free will itself. The latter is the topic of the present two studies.[2]

2 Study 1

The first step in reconstructing people's folk concept of free will is to ask them about the concept. "What is your concept of free will?" might be too direct a question, as people typically do not consciously represent their concepts but rather use them in everyday judgments. These judgments rely on criteria, and previous research has successfully demonstrated that these criteria can be identified by asking people what a certain expression means (Malle and Knobe 1997, Section 2). When asked what it

[2] The reported data for the two studies were collected from a single sample. However, we wanted to address the definitional question prior to examining how participants dealt with the challenge, so the data are presented as two separate studies.

means that somebody did something *intentionally*, people offer reliable and consensual answers that reveal a folk concept of intentionality (Malle and Knobe 1997). If *free will* is a systematic folk concept as well, we should see a similarly reliable and consensual pattern of responses to the question: "What does it mean to have free will?"

3 Method

3.1 Participants and Procedure

Two hundred and one undergraduate students at the University of Oregon participated in the study. Of the 201 students, 180 comprised the final sample as 12 participants did not respond, and nine had responses that were not codeable. Responses were labeled uncodeable if participants simply reiterated the question or provided a response that was not related to the question. The questionnaire containing all of the instructions and materials was administered as part of a larger online survey for students enrolled in introductory psychology and linguistic courses. Participants could access the experiment online with a secure login ID and password, and they received partial course credit for their participation in the study. All participant activities were previously approved by the university's Institutional Review Board.

3.2 Materials

The task instructions indicated that the survey examined students' *"thoughts about what it means to have free will."* Specifically, participants were asked to respond briefly to an open-ended question that asked: "*Please explain in a few lines what you think it means to have free will."* No additional instructions were provided to the participants with regard to the structure of their answers, which they typed into an empty box.

3.3 Content Coding

Participants' open-ended responses were independently coded by the authors after reading through a portion of the responses and identifying three major categories: (a) decision or choice; (b) following one's desires; and (c) overcoming (internal or external) constraints (see Appendix A). Additionally, a code was added for stating that free will did not exist.

In order for a participants' definition to be classified as a *decision/choice*, it had to refer to deciding between options, choosing, or making decisions. For a definition to qualify as *following desires*, it had to mention a phrase like "doing what you want" or "acting as you please." For a definition to qualify as overcoming internal/external constraints, it had to mention the ability to resist external or internal influences on behavior, such as physical limitations or social demands. Inter-rater reliability for all coding categories was high (see Table 1).

Table 1 Content coding of folk definitions of free will

Coding category	Percent coder agreement	Kappa of agreement	Percentage of participants mentioning the category
Ability to make a decision/choice	95%	.95	65%
Doing what you want	94%	.94	33%
Acting without internal or external constraints	94%	.83	29%

Definitions of each coding category are provided in the text

4 Results

Of the 180 participants who provided codeable responses, 108 gave exactly one codeable response; 66 gave two responses; five gave three, and one gave four. In total, participants provided 259 responses.

The majority of participants (65%) referred to the ability to make a decision or a choice as part of their definition of free will. Additionally, 33% of participants referred to following desires or wants as part of their definition, and 29% of participants defined free will as being free from external or internal constraints. Two percent of participants indicated that they did not believe free will exists.

A small number of participants offered responses not covered by our primary coding categories. These definitions included: taking responsibility for your actions (1%), a rational thought process (4%), or being in control of one's actions (6%). However, these definitions were, for all but four participants who cited control reasons alone (2%), secondary to a response that fit one of the three primary categories.

5 Discussion

A clear pattern of folk definitions of free will emerged in this sample. The vast majority of definitions referred to making a choice, following one's desires, or being free of constraints. In line with the principle of shared cognitive labor (Putnam 1975), few people provided all three characteristics, but the social-linguistic community as a whole appears to define free will as a choice that follows one's desire and is not internally or externally constrained.[3]

Of the three criteria, the second and third presuppose that a choice has been made but characterize this choice as consistent with one's desires and independent of strong constraints. Arguably, this joint characterization is the true referent of the word "free" while the process of choice itself is the true referent of the word

[3] Malle and Knobe (1997) empirically supported this argument of shared cognitive labor with respect to the folk concept of intentionality. Definitional components initially emerging from a similar folk definition task were systematically varied in subsequent experimental tasks where they strongly predicted direct judgments of intentionality. We assume as our working hypothesis that the definitional components of free will show the same pattern.

"will." Thus, the folk concept of free will may be labeled more literally a concept of *free choice*.

Just as important as how people conceptualize free will is how they do *not* conceptualize it. Free will was not characterized as a special, inexplicable type of causation, a process requiring indeterminism, or an uncaused cause. Only one participant gave a response that could possibly be classified as an uncaused cause: *"Free Will is when you can make a decision that is completely untouched by outside factors."* However, this statement bears more resemblance to freedom from external constraints than freedom from causality.

People's responses seem to provide a psychological definition of free will, and no assumptions of substance dualism, indeterminism, or original causes were expressed. But might those assumptions fester underneath the surface of this folk concept? In Study 2 we examined whether, when challenged by the position of determinism, people would begin to express assumptions of uncaused causes or other forms of indeterminism.

6 Study 2

How do people reconcile a belief in free will with claims from science that the universe is determined? From Study 1 we can conclude that people have a solid concept of free will, but there was no evidence for a belief in violations of natural laws, causality, or the like. Similarly, even when asked to morally evaluate an actor within an explicitly and completely deterministic universe, participants believe that the actor could have acted differently (Nahmias et al. 2005). At least within extant studies, people do not have trouble accepting determinism and free choice side by side. In philosophers' terms, people appear to be compatibilists.

However, our Study 1 did not directly confront people with the position of determinism, so there was no cognitive dissonance with their concept of free choice to resolve. And even in Nahmias et al.'s (2005) study, participants may have found interpretive leeway in the description of the deterministic universe, which allowed some slippage and did not necessitate the full acceptance of determinism. Specifically, the deterministic universe was characterized as one in which actions are predicted beforehand by a computer that is always correct (scenario 1) or by the agent's genes and environment (scenario 2). Participants may have focused on the notion of prediction and conceptually evaded its implications for a representation of causal determination. Such evasion may have become easier over the course of the quite long experimental description.

In Study 2 we attempted to conceptually replicate this situation by confronting participants with the blunt "scientific truth" that the will (i.e., choice) is an illusion and that all behavior is determined by causes outside of conscious control. Thus, we challenged the primary component of people's concept—the process of choice—for if choice is negated, the other two components (which characterize choice as free) need not be considered. We selected a common challenge raised by neuroscientists that what controls people's actions is not "free will" but neural impulses. We assessed both whether people accepted this position from neuroscience and, if they did not, what arguments they provided in defense of free will.

7 Method

7.1 Participants and Procedure

Participants were the same 201 undergraduate students as in Study 1. After providing the free will definition discussed above, they responded to the neuroscience challenge. (The fixed order of these questions is addressed in Section 11.) The final sample was comprised of 175 students; 24 students declined to participate, and 2 students were omitted for providing responses unrelated to the question (e.g., look back on the women that had no free will and then stood up for what they believed in...equal rights).

7.2 Materials

A brief paragraph described a challenge about the existence of free will: *"Neuroscientists claim that free will is a false impression; that all of our behavior is caused by our neural impulses; and that any feelings of controlling our actions are an illusion."* Participants were then asked, "*Does this sound believable to you?"* In case they disagreed, participants were invited to provide an argument against the claim: *"If not, how would you argue against this claim?"*

7.3 Content Coding

Participants' open-ended responses were independently coded by the authors after each read through a portion of the responses and identified the following four major coding categories (see Appendix B).

(a) *Neural impulses are caused.* Participant mentions that neural impulses are themselves created or caused by something, such as mind, feelings, or will (e.g. "Neural impulses all have to begin somewhere"; "Neural impulses are caused due to our free will").
(b) *Choice.* Participant refers to choice or nonspecifically reaffirms the existence of will (e.g. "All people have the free will and choice to decide what they want in their life").
(c) *Neural impulses do not explain.* Participant states that neural impulses alone cannot explain all behavior and either identifies behavior that is not explained that way (e.g., moral action, impulse control) or mentions additional causes that need to be taken into account (e.g., social influence, feelings).
(d) *Shielding.* Participant provides no argument but refers to religion, common sense, or general beliefs to shield themselves form the neuroscientists' claim (e.g. "It makes us sound like robots"; "It goes against my own personal beliefs").

Inter-rater reliability for all coding categories was high (see Table 2).

Level of Analysis One additional piece of information was recorded, namely the level of analysis that participants adopted in their rejoinders. They could formulate their responses either (a) at the event level (e.g., "The neural connections had to be created some way, they aren't an innate part of the brain"), or (b) they could refer to

Table 2 Content-coding of responses to neuroscience challenge

Coding category	Percent coder agreement	Kappa of agreement	Percentage of participants mentioning the category
Neural impulses are caused	98%	.84	14%
Choice	98%	.95	55%
Neural impulses do not explain	97%	.82	24%
Shielding	98%	.72	13%

Definitions of each coding category are provided in the text

the person or agent level, which included references to the first person (e.g., "I make the impulses happen, they don't decide for me"), the generic second person (e.g. "The neural impulses that occur are controlled by the feelings that you have"), the inclusive plural (e.g., "We are able to have a certain amount of control over our neural impulses through our thoughts"), or one of several third person labels (such as "person," "humans," or "people"). Inter-rater reliability for these coding categories was perfect.

8 Results

Of the 175 participants, 85 (49%) rejected the neuroscientists' claim that free will was an illusion; 46 (26%) accepted the claim, and 44 (25%) participants wavered between accepting and rejecting (e.g., "Somewhat believable"; "I'd say it is part of it, but..."). We might consider the quarter of participants who, without reservation, found the neuroscience challenge believable likely compatibilists. Whether the remaining three fourths, who either rejected the claim or wavered between accepting and rejecting, are compatibilists as well can only be inferred from the kinds of counterarguments they offered (see Fig. 1).

When formulating their counterarguments, 86 participants gave exactly one codeable response, 8 gave two responses, and 35 participants did not provide a response. Among the 94 responders, the most common rejoinder to the neuroscientists' challenge was a reaffirmation of *choice*. Fifty-five percent of respondents cited a person's ability to choose or make a decision as their reason for rejecting the neuroscientists' challenge. These participants often granted that neural impulses exist and influence choices and behavior; but they also emphasized that an agent nonetheless makes a choice (e.g., "You choose what to do—your neurons don't just fire at will"; "Even though you have neural impulses, your free will allows you to look over those impulses and decide for yourself"). In addition, 24% of the 94 respondents argued that neural impulses *do not explain* all of human behavior; 14% maintained that impulses were *themselves caused* by something in the mind; and 13% made statements of mere *shielding*.

The level of analysis results were clear: People who provided a rejoinder to the neuroscience challenge used person-level formulations in 80% of the cases. That was

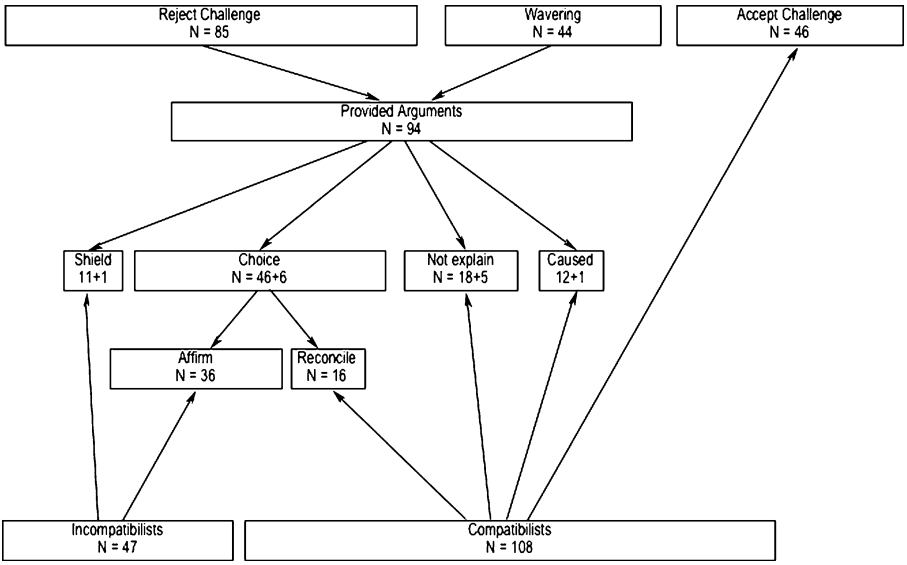

Fig. 1 Breakdown of responses to neuroscientists' challenge to free will. Where numbers are indicated as a + b within a category box, the first is the number of people who provided only this category of argument, the second is the number of people who provided this category together with one other category

particularly true when they referred to *choice* (94%) and to *impulses being caused* (83%), somewhat less so when they referred to impulses not explaining all behavior (63%), and much less so when they were shielding (27%). The latter drop may have resulted from those respondents' refusal to engage in any detail with the neuroscientists' challenge and instead reject it wholesale.

9 General Discussion

According to Study 1, the folk concept of free will is defined by the capacity to choose based on one's desires and free from constraints. These criteria do not constitute a special type of causality, one that would contradict what we know about causal processes from the sciences (McClure 2009). There is no indication of choice being seen as an "uncaused" cause or some magical, indeterministic process. Instead, people's folk concept easily accommodates many causal factors that can influence and act as inputs to choice, such as personality, social forces, capacity limitations, or uncontrolled neural impulses.

In fact, there is ample evidence that people appreciate the complex causal background to beliefs, desires, and intentions (Malle 2004). In addition to explaining intentional actions with reasons, which guide the forming of an intention (choice) to act, they also explain them with factors that lie in the "causal history of reasons" (Malle 1999; Malle et al. 2000). The latter mode of explanation refers to such things as culture, personality, or unconscious motives out of which the person's conscious reasons emerged. Thus, the mental processes underlying

choice and intentional action are no less part of complex causal networks than are physical events in the world.

10 Mechanisms of Free Choice?

Study 2 challenged participants with the claim that free will is an illusion that only neural impulses exist. Three fourths of people (N=129) did not find this challenge convincing, and 94 of them provided a variety of counterarguments. The most common rejoinders emphasized the ability to exercise choice, mirroring the central role of choice in the folk definitions of free will in Study 1. But did people provide any more detail about how choice works and how it disproves the neuroscientists' claim? Among the 52 responders who countered the challenge by referring to choice, the majority (N=36) simply affirmed the power of choice without identifying any mechanism (e.g., "I can choose what I want to do"). A smaller group of people (N=16) tried to reconcile the neural perspective with the possibility of choice either by characterizing neural impulses as inputs *against which* the person can decide in an act of self-regulation (e.g., "we have many impulses but we all have the power to go against them"; N=10) or by pointing to the limited role that neural impulses play in the generation of human actions (e.g., "neural impulses are a part of our will"; N=6).

People with the remaining types of counterarguments displayed more reconciliation—pointing either to the causes of the neural impulses themselves (N=13) or to factors besides neural impulses that influence human action (N=23). An additional 12 respondents rejected the challenge as not believable without providing an argument; rather, they shielded their belief against the challenge by referring to religion, common sense, or other strongly held convictions.

Are people, then, compatibilists or incompatibilists when faced with a challenge from neuroscience? The current data allow only a tentative answer to this question. If we assume that people are unlikely to give up their notion of moral responsibility (because it is itself based on the central notion of choice; Guglielmo et al. 2009), then compatibilists would find a way to accept determinism whereas incompatibilists would reject the deterministic challenge. We might count those who plainly affirmed choice or shielded themselves from the challenge as incompatibilists and those who attempted reconciliation in one form or another as compatibilists. The remaining quarter of respondents who accepted the neuroscience claim without reservation may be added to the compatibilist camp (see Fig. 1). If these classifications are correct, then about 2/3 of our sample are compatibilists. However, the limited research to date should not instill great confidence in this ad-hoc categorization.

We have argued that the present data highlight the importance of *choice* in the folk conception of free will. Some scholars have arrived at the same conclusion in their theoretical analyses—Holton (2006), for example, writes that "choice is the primary ingredient in the experience of free will" (p. 2). Baumeister (2008) echoes this sentiment, arguing that "conscious, rational choice and self-control seem to be integral parts of what people perceive as free" (p. 16). Most scholars, however, have characterized people's conception of free will as being committed to unique forms of causality, nondeterminism, or even uncaused causes (e.g., Bayer et al. 2003; Prinz 2003; Wegner 2002). There is indeed something unique about the phenomenon of

choice. But this uniqueness stems from the core role of choice in the folk conception of intentional action more broadly (Malle 1999, 2006). In this context, what it means to choose to act is to form an intention in light of and because of relevant beliefs and desires, which thereby function as the reasons for which the agent chooses to act. People's conception of choice is a functional one, referring to a process within a network of mental states rather than a magical moment of causal initiation. This functional conception is quite underspecified. In our studies, people provided little information on exactly how beliefs and desires combine into intentions, exactly what goes on in the mind during an act of choice, or where in the physical world of causes such choice can reside. These are questions of (physical and metaphysical) implementation, which are not what people's folk concepts are designed to answer. As a result, the relationship between peoples' definition of free will and their beliefs about its implementation may be murky. According to their conception, free choice and free action are not recognized by their neural or physical signature but by their place in the nexus of information, deliberation, and controlled movement in context. Many models of implementation are compatible with this conception, and that is one reason why the folk conceptions of choice and intentional action are largely untouched by recent findings on the unconscious and on neural mechanisms (Malle 2006).

11 Limitations

At least four limitations of our studies must be acknowledged. First, participants were always asked for a definition of free will before they faced the neuroscience challenge. The frequency of referring to choice in the second, the challenge question, was likely to be influenced by the frequency of referring to it in the first, the definitional question. However, the mere frequency of choice in response to the challenge question was not the central result of Study 2. People did not merely repeat what they said, but many tried to explain *why* they did not find the neuroscience claim believable. Their arguments failed, one might argue, but that is because the folk concept of free choice does not include implementation beliefs—a neural-event model of choice. The absence of such a model is a central finding of Study 2, and it may be strengthened by the fact that people first defined their folk concept and then answered the challenge question, because they had two chances to think about and articulate such implementation.

Second, we cannot rule out that people hold assumptions about nondeterministic causality but simply did not express those assumptions in response to our questions. In particular, a request for definition or semantic explication might leave too little room for considerations of causality per se. Nonetheless, the folk *meaning* of free choice still appears to refer less to causal processes than to functional or even pragmatic features. Some previous studies have used the phrases "could have done otherwise" or "had to happen" to probe assumptions about determinism and free will (e.g., Nichols and Knobe 2007). The meaning of these phrases, however, is no clearer than that of free will itself. Further studies are needed to explore the assumptions and commitments that underlie such counterfactual judgments.

Third, the neuroscientists' challenge may not have succeeded in communicating a strong determinist's position, as our participants may have interpreted "neural impulses" in a narrower way than a neuroscientist would: as automatic default programs that can be counteracted by more controlled processes. For the neuroscientist, controlled processes (that may go "against" the initial impulse) are just as much neural states determined by their preceding states. For people, the differences between impulse and regulatory processes, however, seems to make all the difference—in a functional, not an implementation sense. Other researchers also encountered some difficulty inviting people to adopt a determinist's viewpoint (Nahmias et al. 2005; Nichols and Knobe 2007), and future work may need to manipulate several parameters to explore the most effective invitation of this sort (e.g., short vs. long stories; explicit vs. implicit mention of determinism; moral vs. nonmoral context).

Fourth, our sample of college students in a liberal West Coast town is arguably more educated and less religious than the general population, and we might well find different results with other samples. In addition, we might find different results using extended structured interviews rather than short questionnaires or using speeded implicit judgments rather than deliberated, verbal responses. The deconstruction of people's folk concept of free certainly does not end with the present studies; we hope, instead, that it has just begun.

Appendix A

Major Coding Categories

1. **D** Make decision/choice (e.g., *"to have a choice in what you do," "the ability to make your own decisions," "the ability to decide for yourself your actions, choices, life"*)
    - **D-A** mentions alternative options/possibilities (*"you have a choice or option to take one or more paths in a situation"*)
    - **D-C** control (e.g., *"when someone has the ability to control their own actions and thoughts"*)
2. **W** Doing what you want (e.g., *"the ability to do what ever you want," "ability to act on one's owns needs and desires"*)
3. **I/E** Acting without internal or external constraints (e.g., *"To have the ability to act without restrictions," "do whatever you want no matter your race, IQ, or financial situation"*)
    - **E** Being able to resist specifically external influences on behavior (e.g., *"no one else is controlling that decision," "you aren't forced into anything [that you don't want]," "decline the negative pressures from peers"*).
    - **I** Being able to overcome specifically internal limitations on behavior (e.g., *"physically and mentally capable [of making your own decision]," "biological impulses can be overcome"*)
4. **N** Free will does not exist

Appendix B

Coding Scheme for Responses to Neuroscientists' Challenge to Free Will

Do participants *accept* the neuroscientists' argument that "free will is a false impression?"

1. **1** Yes - use when the answer is unequivocal (e.g. "I can believe that")–no "buts" or "partials"
2. **0** No–use when the answer is unequivocal
3. **R** With Reservations–use when the answer is wavering (e.g., "somewhat") or with reservations in either direction

What reasons do participants give for refuting the arguments of the neuroscientists?

1. **C** Creation/Control of impulses (*e.g. personality, external influences, higher order system that governs the neural impulses*)
2. **D** Decision, choice or "will,"
   - Argument reaffirms free will, deliberation, choice, or having control over actions
3. **E** Neural impulses cannot explain all of our behavior
   - (*e.g. morality, ethics, maladaptive behaviors, resisting "temptation," learning from mistakes*)
   - Also when referring to other causes of behavior beside neural impulses (*e.g. "no, behavior is caused by many things", "a higher power governs everything")*
4. **S** Shielding
   - the challenge bounce off a "shield" that is something more than just rejection (*e.g. "makes us sound like robots," "religious reasons", "science doesn't provide an adequate argument"*)
   - **N** Makes no sense

Multiple codes are acceptable (e.g. E,C)

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