The Ontology of Intentional Agency in Light of Neurobiological Determinism: Philosophy Meets Folk Psychology

Sharmistha Dhar

Journal of Indian Council of Philosophical Research

ISSN 0970-7794
Volume 34
Number 1

J. Indian Counc. Philos. Res. (2017)
34:129-149
DOI 10.1007/s40961-016-0093-3

Springer

J. Indian Counc. Philos. Res. (2017) 34:129–149
DOI 10.1007/s40961-016-0093-3

The Ontology of Intentional Agency in Light of Neurobiological Determinism: Philosophy Meets Folk Psychology

Sharmistha Dhar[1]

Received: 15 April 2016 / Revised: 6 October 2016 / Accepted: 7 December 2016 /
Published online: 24 December 2016

Abstract The moot point of the Western philosophical rhetoric about free will consists in examining whether the claim of authorship to intentional, deliberative actions fits into or is undermined by a one-way causal framework of determinism. Philosophers who think that reconciliation between the two is possible are known as metaphysical compatibilists. However, there are philosophers populating the other end of the spectrum, known as the metaphysical libertarians, who maintain that claim to intentional agency cannot be sustained unless it is assumed that indeterministic causal processes pervade the action-implementation apparatus employed by the agent. The metaphysical libertarians differ among themselves on the question of whether the indeterministic causal relation exists between the series of intentional states and processes, both conscious and unconscious, and the action, making claim for what has come to be known as the event-causal view, or between the agent and the action, arguing that a sort of agent causation is at work. In this paper, I have tried to propose that certain features of both event-causal and agent-causal libertarian views need to be combined in order to provide a more defendable compatibilist account accommodating deliberative actions with deterministic causation. The "agent-executed-event-causal libertarianism", the account of agency I have tried to develop here, integrates certain plausible features of the two competing accounts of libertarianism turning them into a consistent whole. I hope to show in the process that the integration of these two variants of libertarianism does not challenge what some accounts of metaphysical compatibilism propose—that there exists a broader deterministic relation between the web of mental and extra-mental components constituting the agent's dispositional system—the agent's beliefs, desires, short-term and long-term goals based on them, the acquired social, cultural and religious beliefs, the general and immediate and situational environment in which the agent is placed, etc. on the one hand and the

✉ Sharmistha Dhar
sharmistha.dhar15@rediffmail.com

[1] Jadavpur University, Kolkata, India

decisions she makes over her lifetime on the basis of these factors. While in the "Introduction" the philosophically assumed anomaly between deterministic causation and the intentional act of deciding has been briefly surveyed, the second section is devoted to the task of bridging the gap between compatibilism and libertarianism. The next section of the paper turns to an analysis of folk-psychological concepts and intuitions about the effects of neurochemical processes and prior mental events on the freedom of making choices. How philosophical insights can be beneficially informed by taking into consideration folk-psychological intuitions has also been discussed, thus setting up the background for such analysis. It has been suggested in the end that support for the proposed theory of intentional agency can be found in the folk-psychological intuitions, when they are taken in the right perspective.

Keywords Agent-executed-event-causal libertarianism · Conditional analysis · Event-causal libertarianism · Indeterministic causation · Intentional agency · Executive self · Free will · Neurobiological determinism · Primitive agent-causal libertarianism · Unconditional analysis

Introduction

Deterministic causation is understood to be a one-way, linear causal principle, according to which, from the existing physical laws of the universe in force and the states of affairs obtaining in the past only a certain sort of outcome is supposed to logically follow. As Peter van Inwagen puts it:

> Determinism, […] is the thesis that the past and the laws of nature jointly determine a unique one among the possible or internally consistent futures to be *the* future, the actual future. (Van Inwagen 1983)

Now it is the perennial concern of the philosophical community that what if the series of events beginning from the deliberative processes through the evaluation of alternative action plans to the implementation of the action[1] is fundamentally deterministic? Libertarians who unlike compatibilists believe that free will can only be established on the falsity of determinism argue that the claim of rational agency[2] is essentially a claim involving the truth of indeterminism existing at the micro-level, constituted by neurochemical processes, of the intentional agent's biological architecture. If the causal sequences at this level turn out to be deterministic, it would then undermine the agent's ability to even contemplate a different action plan than what she actually did.[3] John Searle illuminatingly illustrates this

[1] By the term action here is meant not merely an overt bodily action, but also a mental act such as a decision made. Alfred Mele also suggests that mental events with a specified causal history having pertinent causally efficacious (effortful) mental items merit the characterization as actions. See Mele (1997, pp. 231–232 and p. 235).

[2] A rational agent is one whose actions are not just endogenous, but is caused by mental events controlled by her. In this sense, a kleptomaniac or a person suffering from alien hand syndrome is not to be considered agents. See also Rigato (2015, pp. 110–111).

[3] The alternate ability condition is considered as one of the hallmarks of rational agency. See Kane (2005, p. 5).

incompatibility between neurobiological determinism and the rational decision-making process by citing a paradigmatic example of the decision-making activity—the judgment of Paris of Troy in Greek mythology. Paris had to decide who of the three goddesses, Aphrodite, Athena and Hera, he should give away the golden apple in exchange for three equally inviting material possessions. Now if the neurochemical processes in his brain from time $t1$, when he started the deliberation, through $t2$, $t3$ and $t4$, when he weighed the advantages he would gain from each of the offers the three goddesses made him, were causally sufficient for the decision he made at $t5$, then, as Searle apprehends, scanty explanation is left for the indecisiveness experienced by Paris and the rational inputs supplied by him to resolve his inner conflict (Searle 2000). Using another illustration, Searle suggests that if our everyday judgment of choosing one thing over another, say choosing Burgundy over Bordeaux where there must be a transition from the process of comparing and weighing conflicting reasons (say, at instant $t1$) to the final act of settling on one alternative (say, at instant $t2$), the judgment would not count as an act of free will if it is empirically proven that the transitional phase—the gap between deliberations and decision—was executed by linear neurophysiological brain processes corresponding to the mental processes, causally sufficient to generate the decision, without further inputs in the brain (Searle 2001). In short, the truth of one-way neurochemical determinism does not apparently allow an explanatory room for Paris-like wavering over alternative action plans each of which has equiprobability of being decided upon by the agent and the agent's stochastic final selection of any one of them. Libertarians, who believe that deterministic causation is not the kind of causal process undergone by the agent during volitional exercise (vide Fig. 1), here enter the scene and propose that without the presupposition of indeterministic causal processes at the psychological level, free will would be left unintelligible. Libertarians fundamentally argue that deterministic causation which is a one-way causation cannot enable the process of choice-making (vide Table 1). In their view, indeterministic processes occurring in the gap between the agent's thinking about making a certain decision and the decision the agent finally settles for capture the real nature of agency; neurodeterminism cannot then be true. In the following section, the question of how this kind of causation not amounting to randomness provides a better explanation for agential control would be taken up and a comparison in this connection would be made between the two competing variants of libertarianism—the agent-causal account and the event-causal account. However, it would also be suggested that the most cogent account of libertarianism need not explain away determinism.

Agent-Grounded Indeterminacies or Agent-Involving-Event-Grounded Indeterminacies?

Agent-causal libertarian accounts hold that (1) determinism inhibits free will (incompatibilism), (2) agents naturally possess free will (libertarianism as opposed to hard determinism) and (3) an agent is armed with the ability to do otherwise absolutely independent of any change in the laws of nature or past conditions

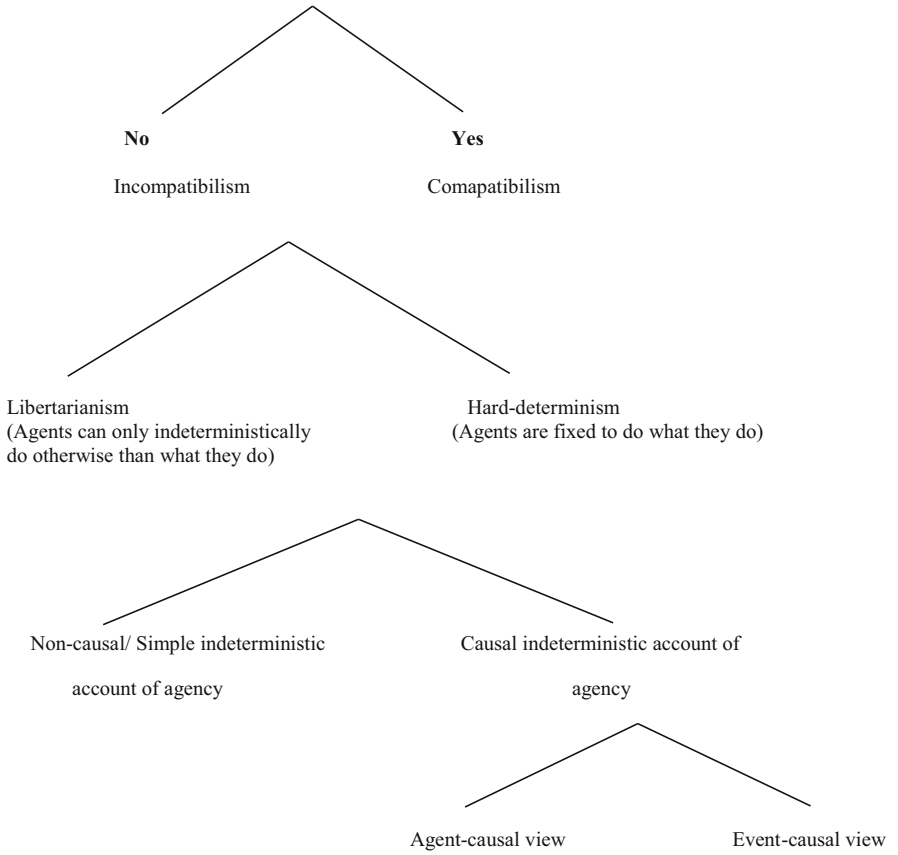

Fig. 1 Debate over the type of causal processes underlying agential control: deterministic causation vs. indeterministic causation

Table 1 Different viewpoints adopted in response to the question of the possibility of free will in terms of determinism

	Determinism	Indeterminism
Compatibilism/soft-determinism	Free will (yes)	
Incompatibilism	Free will (no)	Free will (yes)
	Hard determinism/hard incompatibilism and libertarianism	Libertarianism

including the sub-agential causal conditions such as desires, beliefs and intentions. Turner and Nahmias give a description of the agent-causal account thus:

> *agent-causal* libertarians argue that for agents to act freely they must participate in a special sort of relation, *agent-causation*, which holds between a *substance* (the agent) and an *event* (the action) and which is not further

> reducible to a causal relation that holds between mental states of the agent and the action. Furthermore, if an agent *S* freely performs an action *A*, the agent-causal relation that holds between *S* and *A* must be such that *S* could have done other than *A*. (Turner and Nahmias 2006)

In a more recent development of agent-causal libertarianism, sketched by Richard Swinburne, it has been argued that when we set a goal before us, such as passing the semester examination with good grades, we perform intentional actions immediately subservient to this goal, say, reading reference books, taking notes, hearing audio files of class lectures, etc. We, however, also perform yet more basic intentional actions that help us perform the above actions, such as getting up early in the morning, walking fast so as to grab the front row in the lecture theatre and borrowing important reference materials from the library before others could do, for which, as Swinburne argues, the agent has no "recipe". Performing this latter class of intentional actions, called "instrumentally basic actions" by Swinburne, does not consist in any event gap between the agent and these actions; the agent could not have carried them out if they thought even their basic tryings were not causally sufficient to produce the desired outcome—they would have then ceased to try and hence ceased to act (Swinburne 2013, p. 134). Then an agent "trying to do an instrumentally basic action… does not consist in the agent performing any other intentional action, that is bringing about some intermediate state of affairs… intentionally exercising causal influence" (op. cit., p. 135).

An agent-causal libertarian account of free will therefore rests on an unconditional analysis of the Ability for Alternate Action Condition of free will—henceforth to be referred to as the A_3 principle. An unconditional analysis of an intentional act permits the following:

An agent *s* could have done $\sim A$ instead of *A even if nothing changes* prior to *s*'s *A*-ing. The "nothing" in the statement includes not just the laws of nature but also the mental states of the agent until the moment of making the choice, emphasizing that no other factors, not even the sub-agential events like the agent's beliefs, desires, etc. need to change. As explicated by Randolph Clarke:

> … when an agent acts with free will, her action is not causally determined by any prior events. The agent herself was said to cause her action, and this causation by the agent was said not to consist in causation by an event or collection of events…. what the agent did was not an accident or a matter of chance; the agent herself made it happen that she did what she did. She was an uncaused cause of her so acting. (Clarke 1993)

I propose here that the agent-causal thesis sketched above is a primitive and rather underdeveloped way of committing to agential control, and stands in need of a revision. Unless that is done, the unconditional analysis of free will that lies at the heart of agent-causal account of libertarianism will be prone to error. The biggest disadvantage with this form of agent-causal libertarianism is not that it puts an "unmoved mover"—an ontologically irreducible entity—at the beginning of a causal chain leading to the intentional output. Its biggest demerit is it does not at all admit a causal chain leading from the agent to the action

implementation; instead it looks at the agent as a stand-alone system by itself, needing no further cognitive resources. However, this implies a denial of micro-indeterministic causation involving interplay between agent-involving mental events such as beliefs, desires, intentions and ratiocinations, which is also assumed as a key component of rational judgment. Eighteenth century Scottish philosopher Thomas Reid's agent-causal account which is still cited as one of the first of these archetypal agent-contingent libertarian views has been charged with this objection. Although Reid's view satisfactorily shows why indeterminism at the micro-level is required for "the determination of will", his insistence that by definition an agent is the one that exerts direct active power to cause a volition producing elements that may subsequently result in the action, without any other causal relation coming in between the agent's direct exertion of power and the occurrence of volition, leaves it vulnerable to teething questions about the nature of causation and of the agent it tries to endorse. Reid simply cannot think beyond any other efficient cause than the self exerting action-producing or action-vetoing power. As he puts it:

> In the strict and proper sense, I take an efficient cause [of some event] to be a being who had power to produce the effect, and exerted that power for that purpose…. Power to produce an effect, supposes power not to produce it…. (Reid 1895)

Now this form of the agent-causal view can be contrasted with the event-causal account of libertarianism. An event-causal account makes the A_3 principle feasible by holding that agent-centric events (beliefs, desires, intentions, etc.) measured by the agent before taking action, indeterministically cause the action. So while agent-causal accounts require unconditional analysis of the A_3 principle, event-causal accounts require a conditional analysis. According to the conditional analysis: An agent s could have done $\sim A$ instead of A *only if some prior event* relevant to the occurrence of an alternate action or choice *changes*. The conditional analysis of an intentional act emphasizes that in order for A to be done by an agent s, s must necessarily have p and if s does $\sim A$, then s must necessarily have $\sim p$. However, neither s's having p nor $\sim p$ is fixed or predetermined prior to the occurrence of A or $\sim A$. This being so, the event-causal account unlike the primitive agent-causal view allows the following corollaries:

1. An agent s is left with all the leeway to choose from among the mental events (denoted by p or $\sim p$)—beliefs, desires, thoughts and ratiocinations pertinent to the multiple choices weighed—processed by the agent—so as to be able to generate a certain A (or $\sim A$). Any change in p (or $\sim p$) would produce a different outcome other than A (or $\sim A$). This implies that a deterministic relation between the series of agent-involving and agent-controlled mental events as causes and the actual decision is supposed to be a requirement for agential control. The event-causal claim is thus in tandem with psychological determinism.

Let us suppose s has the deliberative process involving these sub-agential events to wind up between time series t_1 and t_4. The outcome in the form of the decision occurs at time t_5. Now the leeway s enjoys to choose from among p_1, p_2, p_3, etc. between t_1 and t_4, leading to the final decision underscores the presence of indeterministic processes at the agent's micro-level or at the "local level", the term I would adopt here, constitutionally giving shape to the entire intentional event experienced by the agent from weighing alternatives to reaching the evaluative judgment. What I intend to mean by the use of the term "local-level" processes, in the context of an agent's individualistic intentional actions, are indeterministic processes that reflect how the agent is psychologically capable of rationally reflecting on and assessing the pros and cons of all of her alternative choices and respective sub-agential events underlying and underpinning each of those choices even at the penultimate moment of making the choice.[4] This enables the agent to make a rational choice by fixing or vetoing not just the sub-agential events but also more base-level neural processes. The local-level processes underlying intentional acts thus uphold the truth of libertarianism. However, a closer examination would also show that all the indeterministic play involving the agent's selection of beliefs, desires, inclinations, motives and past experiences that help in the formation of a decision operates within a broader causal framework which is at bottom deterministic. A global process, as contrasted from the local-level processes, underlines the deterministic link between the nature of the mental events undergone and processed by the agent and the nature of choice made accordingly, not just in individual situations, but throughout s's lifetime. The event-causal account of the kind proposed here then has the explanatory advantage over the primitive agent-causal view insofar as it irons out divergence between compatibilism and libertarianism.

2. There clearly is a distinction between the agent and her deliberative resources, i.e. the mental events that are in tandem with her action tendencies she undergoes. Both, however, are causally relevant for the occurrence of her intentional behaviour.

The event-causal view sketched above shows an integrative approach as it does not leave out the role of the agent. By the term agent here should be understood an executive entity in control over the preconscious and conscious mental events relevant to some contemplated behaviour and their micro-level, i.e. neurobiological constituents, propelling or vetoing them. In order to distinguish it from the simple form of event-causal libertarianism, I would henceforth refer to this view as the

[4] Explanatory advantage (2) of the event-causal view sketched here sits well with the account of free will propounded by a number of leading classical Western and Indian philosophers that actions involving a utilitarian kind of rational assessment are the epitome of free actions (see Kevin 2015 for a description of the Faculties Model of the Will advanced by Aquinas and Descartes; Adam and Tannery 1973, pp. 57–58; Maitra 1963, p. 35 for the *Nyāya* view of what a volition consists in). Assessment of choices involving rational deliberation over which of the choices open to the agent would maximize the beneficial results and minimize undesirable consequences before clinching the final decision requires high level of control. And only local-level indeterministic processes during this period of rational assessment can equip an agent with this kind of control.

"agent-executed-event-causal libertarianism". This variety of libertarianism has been proposed in different forms by noted philosophers.[5] Let us in particular cite the event-causal account developed by Alfred Mele who has successfully worked out this reconciliatory suggestion. When someone decides to do A, and implements the decision to do A, the causal chain leading to the act looks like the following diagram (vide Fig. 2) if Mele's account is pictorially interpreted (Mele 2002):

Now Mele points out that when we claim that we could have done otherwise than what we did in a given situation, the truth of this claim (i.e. the truth of the A_3 principle) rests on an indeterministic causal relation between our rational deliberative process and our evaluative judgment as an outcome of this process (indicated sic by the dotted arrow in Fig. 2). According to Mele, the rational deliberative process preceding a decision or a choice involves weighing the pros and cons of various alternative actions that means sweeping through and assessing a nebulous mix of beliefs, desires, hypotheses, etc. On Mele's view the indeterministic leap from this rational deliberative process to the evaluative judgment rests on the presupposition that any of the beliefs ($b_1 \ldots b_n$), desires ($d_1 \ldots d_n$), hypotheses ($h_1 \ldots h_n$) may "come to mind", i.e. lifted from their unconscious[6] (offline, passive) mode of existence to the conscious (online, occurrent) mode of existence. It remains undetermined which of these beliefs, desires, hypotheses, etc. will figure in the agent's rational deliberative process as worthy of consideration and will ultimately be taken up by the agent to make the evaluative judgment. Technically speaking, Mele would suggest that indeterministic causal relation holds between rational deliberation and evaluative judgment insofar as there are no conditions to nomologically cause the mobility of particular beliefs, desires, etc. from their unconscious or inactive mode to the active, conscious mode (see Fig. 3). The evaluative judgment on the other hand is made when a particular action path is selected from among the various alternative actions considered when the agent's mind was in the rational deliberative mode. Note that while the primitive agent-causal libertarian theories downplay the causal role of sub-agential events or components like individual beliefs–desires–opinions–hypotheses, etc., which we have earlier referred to as constituting the agent's dispositional system determining the agent's ability for alternate action, the agent-executed-event-causal libertarian theories offer a credible picture of how agent-specific intentional and dispositional states play a necessary causal role in making A_3 a reality. Perhaps the primitive agent-causal libertarians think that by positing the agent as an autonomous

[5] See for instance Clarke's "integrated agent-causal view" in Clarke (2003), O'Connor (2000), Mele (2002) in Robert Kane (Ed.).

[6] Although Mele has used the term "unconscious", I would prefer the term "preconscious". Preconscious mental states can be causally productive, given they happen to be selected by the agent to help in conscious intention formation. In this sense, preconscious mental states and processes may be looked upon as the precursor of their conscious counterparts. What makes a preconscious state say, my implicit belief that choosing First-order Predicate Logic module over Social Political Philosophy module as an optional paper at the Masters level would help me in job interviews a species of the unconscious is its inaccessibility to conscious awareness at times. But what sets it apart from some neurochemical processes going on within an organism that merit the description of pure unconscious is its intrinsic capacity to be transformed into a conscious state, via the agent's executive control. See Searle (2004, p. 167) for a similar view on the preconscious.

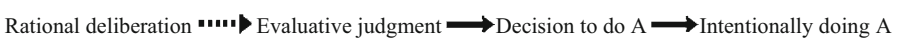

Fig. 2 The role of local-level indeterminism in Mele's scheme of decision-making

substance that is capable of functioning absolutely independent of any internal interference (read mental states), they can successfully keep freedom of agency separate from determinism. This way of explaining the ontology of agency, however, comes at the cost of pushing mental causation out of the picture. Granted that there is an autonomous agent which is the referent of the 'I', which these libertarians would admit of as a self—a mind independent entity—it cannot be denied that this self can only exercise free will through the intermediary of its psychological states. Mele's event-causal libertarian view discussed above provides an intelligible libertarian account of how agential freedom is sustained even when micro-level indeterministic processes are under way. Robert Kane and Helen Steward are among other libertarians who have explained the ontology of agency in terms of local-level indeterminism between the agent and the agent-involving goal-directed states. Helen Steward is among other libertarians who have made local-level indeterminism a desideratum in explaining agential control in decision-making. She develops a view of intentional agency that centres on the concept of "settling a matter through the manoeuvre of body", ubiquitous even in non-human species, which can be accounted for only on an assumption of what she calls a "two-way power":

> A one-way power can be the power to *cause* a certain outcome, but cannot constitute the power to *settle* whether that outcome or some other, obtains, because the causing of that very outcome will be already settled by the time the power is exercised… It is natural, I think, to suppose that we humans are settlers of certain things—but no less natural, I would maintain, to suppose that many other animals are, too. The controlled trajectories through the world which constitute their voluntary movements are settled, … at the time of action, and not before, and they are settled… *through* their actions, *as* they act. (Steward 2009)

Robert Kane argues that it is "self-forming actions" (SFA-s) or "will-setting actions" (Kane 2007) where free will is exhibited par excellence. An SFA typically involves a conflict between equally inviting choices that an agent has equally rational reasons to pursue. As an example of this sort of actions, Kane refers to the dilemma a businesswoman faces when she has to opt between heading for a crucial business meet which would professionally benefit her and saving the victim of a road accident she has been witness to on her way to the meeting. When an agent is faced with such conflicts, the final choice, Kane argues, happens to be a function of micro-indeterministic activities in the brain caused by uncertainties in the mind about which of the decisions would obtain greater good. This kind of indeterminacy is non-random as it provides the agent with what Kane calls "plural voluntary control" while consciously weighing the options, a concept similar to Steward's "two-way power".

Not all libertarians, however, would agree with Kane in arguing that indeterminism always has to be at play *prior to* clinching the decision, in order for making the action "appropriately non-random", probabilistic and therefore free (Balaguer

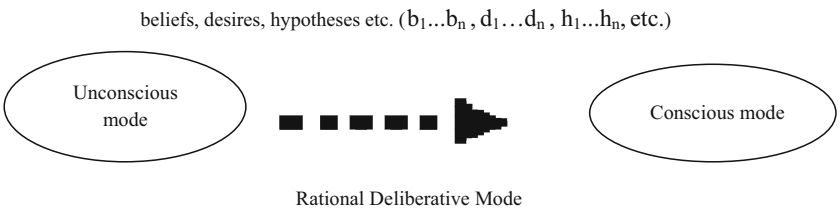

Fig. 3 The indeterministic coming-to-mind of nonoccurrent intentional states aiding evaluative judgment

2010). Mark Balaguer contrasts Kane's SFA-s with what he calls torn decisions in which case it is the subconscious assessment of reasons and not conscious weighing of alternative choices that run underneath, and indeterminacies occur at the moment of choice.[7] This Balaguer says explains why we at times have the experience of "just choosing" after going through a dilemma. However, some philosophers do not admit that such non-deliberatively indeterminist account of intention implementation can explain free will. As Daniel Dennett argues:

> It is a familiar theme in discussion of free will that the important claim that one could have done otherwise under the circumstances is not plausibly construed as the claim that one could have done otherwise given *exactly* the set of convictions and desires that prevailed at the end of rational deliberation. So if there is to be a crucial undetermined nexus, it had better be prior to the final assessment of the considerations on the stage…. (Dennett 1981)

In support of Dennett it may be said that the gap between the agent's very own "recipes" for intention implementation and the actual implementation is not so much evident in non-deliberative "local-level" indeterminacies as it is in explicitly deliberative antecedent "local-level" indeterminacies. However, whether unconscious mental causation should or should not count as a feature of intentional agency is a debate that should form a separate discussion. To sum up, the framework provided by the views discussed above only encourages us to take a compatibilist stand following in the footsteps of David Hume. Insisting that there is a "conjunction between motives and voluntary actions… as regular and uniform as that between the cause and effect" (Hume, 1748 [1999], p. 72), he argues that even if we find a person intentionally acting in a manner not expected of her, we have to infer that some "secret opposition of contrary causes" (ibid., p. 71) made way into her deliberative processes leading her to opt for some $\sim p$ instead of p and decide to $\sim A$ rather than A [vide corollary (1) on p. 10 of this work].

Now in the next section the aim would be to take up a few studies that throw light on the nature of folk intuitions about the status of intentional agency even when it is faced with the threat of determinism—neurochemical and psychological. However, the actual benefit that can be extended to philosophical discourse on such metaphysically laden issues through investigation into folk concepts and intuitions would be discussed first to set the stage.

[7] Ibid., p. 71.

Folk-Psychological Concepts: A Philosophical Reference Point

Paul M. Churchland famously decreed that folk-psychological concepts grounded in beliefs, desires, etc. provide a "hopelessly primitive and deeply confused" (Churchland 1988) explanatory framework for how we behave the way we do and should be abandoned, in the same way as "phlogiston", a mysterious substance once thought to be behind the phenomena of burning and rusting has been superseded by oxygen and wiped off the ontological picture of those phenomena. Nevertheless, a new methodological surge in philosophy known as experimental philosophy has reinforced the import of studying folk-psychological intuitions for those who support this methodology argue that many of the intractable philosophical puzzles such as those concerning the possibility of free will and moral responsibility have their roots in pre-theoretical intuitions. Joshua Knobe and Shaun Nichols, two leading philosophers spearheading this experimental approach to philosophical problems, argue that surveying folk concepts and intuitions aims to arm philosophers with an insightful understanding about what underlying psychological processes spawn those intuitions with the upshot of discovering whether those psychological sources are in conflict with philosophically developed theories. If that were the case, considering the fact that even philosophers undergo these commonsense intuitions and may have been influenced by their own beliefs and intuitions while developing a particular view, it could serve as an inkling to philosophers who could then start revisiting and reformulating the philosophical issues in question (Knobe and Nichols 2008, pp. 7–8).

In defence of the need to study folk concepts, philosopher Shaun Nichols (2004) argues that analysis of folk concepts helps overcome the charge of single-subject bias which occurs when philosophers try to defend their own intuitions through conceptual analysis. Documenting the predominance of one intuition over another may not help to solve the problem regarding the ontology of free will, but it will certainly prod philosophers to do a rethinking of their enshrined philosophical theories. Ernest Sosa, another advocate of the experimental philosophy, suggests that the method carries the potential to challenge the background assumptions forming our pre-reflective judgments about intentionality, free will, causation, etc. (Sosa 2007; Vargas 2006).

Philosophers having affiliation to the experimental approach argue that it would be unwise to sideline the folk concept of free will, not just because surveying it will bring into prominence what we are inclined or disinclined to believe but will also show how believing or not believing something has an effect on how we respond to the ontological issues. Psychologist Bertram Malle makes an appeal to the study of folk concepts in general:

> Because of the strong influence of folk concepts on cognition and social life, scholars who talk about things like intentionality, awareness, and choice must make a fundamental decision: Are they going to talk about these things the way ordinary people do…, or are they introducing technical terms? One would hope that, if the latter, they would just use a new word, but that is not always done. Ultimately, whenever a scientist describes a folk assumption and claims

that some evidence shows it to be wrong, the scientist has to adhere to the folk meaning of the relevant concepts, or else the evidence isn't relevant (Malle 2006).

The Ontology of Rational Agency: A Folk-Psychological Survey

In "Agent-Grounded Indeterminacies or Agent-Involving-Event-Grounded Indeterminacies?" section an argument was developed with the upshot that causation by both the agent and the agent-manoeuvred events (mental states and processes) needs to be presupposed in order to preclude neurobiological determinism at the micro-level from constraining the prospect of free will. In this section, I would present three different strands of folk-psychological investigation with a hope to argue that the folk intuitions laid bare in these studies, when considered in conjunction and not in isolation, show that our subliminal beliefs are geared towards the idea of both a controlling self and the causal sufficiency of the mental events as manoeuvred by this self constituting the ontology of intentional agency.

Study 1

A study conducted by Nahmias (2006) and Nahmias et al. (2007) begins with the assumption that it is the reductionistic, and by implication, a mechanistic description of an intentional act and not neurobiological determinism that influences folk intuitions about the possibility of free will. People might think that "our deliberations and conscious purposes are *bypassed* by forces that are out of our control" (Nahmias et al. 2007, p. 220). They accordingly assigned their subjects to either of the two conditions—a real world condition and an alien world condition (in order to diminish motivation to ascribe agency), portraying the ontology of intentional action in both conditions in neuroscientific (mechanistic) and psychological (mentalistic) terms. The task set before the subjects was to select only that condition which they thought was conducive to the occurrence of free actions. Although Nahmias et al. presented each of the two groups of their subjects with two scenarios: (a1) the real world where intentional behaviour has purely neurochemical antecedents and (a2) the real world where intentional behaviour has purely psychological antecedents; (b1) the alternate world where intentional behaviour has purely neurochemical antecedents and (b2) the alternate world where intentional behaviour has purely psychological antecedents, I have reformulated the scenario for the sake of brevity outlining the real world condition in the main while keeping the alternate world condition within parentheses. The psychological deterministic description of agency which is placed in both real world and alternate world conditions has also been kept within parentheses. The subjects were presented with the following test condition:

In our own world [in an earth-like planet called Erta where the inhabitants behave almost in a human-like manner] neuroscientific research [and psychological research] has made the discovery that decisions made by humans [by the Ertans] are fully caused by neurochemical processes and reactions in the brain [and psychological processes like thoughts, desires and plans in the mind], which are

again fully caused by the agents' genetic makeup and physical environment [genetic makeup and upbringing]. Gap reduced the upshot of this discovery is, whenever certain *neurochemical processes and reactions in the brain* or (*thoughts, desires and plans in the mind*) occur, they will *certainly cause* the humans or [Ertans] to make a certain decision.

The subjects (1124 undergraduate students with subjects other than philosophy as their major disciplines) were then asked questions related to free will and rate their agreement on a scale from 1 to 6, where rating the response with the lowest mark on the scale indicates strong disagreement and with the highest mark, strong agreement. Tables 2 and 3 show the percentage of subjects responding to the questions with strong agreement (if not stated otherwise).

The folk preference of psychological determinism to neurodeterminism especially in the real world scenario seemingly evinces belief in an agent in control of the psychological processes (see items 1, 3 and 4 in Table 2 and items 1 and 3 in Table 3). It is most striking that subjects who responded to the alternate world scenario still insisted on the presence of a soul irrespective of the physicalistic or mentalistic descriptions of the ontology of intentional actions. However, note should be taken of the fact that there was more disagreement than agreement across both neuroreductionistic and psychological descriptions about the soul being the only factor involved in making the decisions (indicated by item 5 in Table 2). If this result is viewed in conjunction with the finding that a high percentage of nods were given to the psychological deterministic description of behaviour (item 2 on the extreme right in both Tables 2 and 3) even in the alien world scenario where the motivation for ascribing agency was comparatively lessened, the folk belief in mental events like thoughts and desires as providing inputs in the causal nexus is evinced as well. The folk intuition about the ontology of agency then certainly appears to conform to the agent-executed-event-causal view—the philosophically intuitive view developed in the previous section. However, since Nahmias et al. made a dichotomy between the neurophysiological and the mental, it was left to be known that, if mental states were presented as neural states following the neuroscientific sense of the mental, whether people would still take it as a threat to free will and hold on to their mechanistic-incompatibilist position. Another study, to

Table 2 Different intuitions about intentional behaviour in real world. Adapted from Nahmias et al. (2007)

	Possibilities in a neurodeterministic set-up	Possibilities in a psychological–deterministic set-up
1. Decisions "up to" agent	34.3	85.9
2. Free will	38.3	82.9
3. Control	38.8	80.3
4. Humans having non-physical souls	63.0	63.4
5. Free will *only* because of soul	33.3 (strong disagreement) 24.7	46.5 (strong disagreement) 16.9

Table 3 Different intuitions about intentional behaviour in alien world. Adapted from Nahmias et al. (2007)

	Possibilities in a neurodeterministic set-up	Possibilities in a psychological–deterministic set-up
1. Decisions "up to" agent	40.4	56.3
2. Free will	39.1	53.1
3. Humans having non-physical souls	74.4	70.8

be discussed in the next subsection, that tried to delve into the folk belief about what it is like to act out of free will addresses this issue.

Study 2

In the study conducted by Monroe and Malle (2010) folk intuitions did not show any indication that free will is diminished by the truth of neuroreductionism or what Nahmias termed "mechanistic incompatibilism". The investigators in this study asked their subjects to consider the scenario stated below and give their reasoned opinion:

Neuroscientific research has good evidence to establish that all behaviour is caused by neural impulses. This implies that the phenomenology of controlling behaviour is an illusion. Do you agree with this position?

The Result (See Also Table 4 for Detailed Responses)

Out of 175 subjects, 85 categorically rejected the idea that neuroscientific revelations about the causal structure of intentional action renders free will an illusion. Of the remaining 90 subjects, 44 neither fully rejected the illusion claim nor fully accepted it. Focus was immediately shifted to the reasoning offered by these 129 respondents for rejecting or not fully accepting the illusion claim to look out for any sign of compatibilist belief. Of the 129 again 94 provided responses. The counterarguments were found to have predominantly a compatibilist undertone with somewhat reserved reasoning offered by 24% of the 94 respondents, although not amounting to hardcore incompatibilism. However, even most of these 24% respondents must have upheld the choice-making ability, as 86 out of the 94 who actually provided responses gave one response and 8 gave two responses, and if 55% choose the first response category of Table 4, then there remain very few who did not choose the choice-making ability. What is notably different from Nahmias's result is, many subjects of this study preserved their belief in free will without disallowing the neurobiological causation and even when they put the mental causation before the neural causation they never really shoved off the neurobiological description of free will.

Table 4 Folk intuitions about neurobiological determinism being deterrent or determinant of decision making (adapted from Monroe and Malle 2010)

Response category	Percentage of subjects responding	Concrete response statements
Choice-making ability	55	"All people have the free will and choice to decide what they want in their life"; "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"
Neural impulses are not the only component in the causal antecedents of behaviour	24	Subjects reasoned that moral action, impulse control, etc. are not fully causally explained by neural impulses and sought to include social influence and feelings in the causal structure
Neural impulses are caused by the mental	14	"Neural impulses all have to begin somewhere"; "Neural impulses are caused due to our free will"

Table 5 A comparison of the dominant folk beliefs about processes aiding decision making: Nahmias's study vs. Monroe and Malle's study

Types of notions about free will	Nahmias' study	Monroe and Malle's study
Event causal	Explicit	Implicit
Agent causal (may not rest on a notion of uncaused cause)	Implicit	Explicit

If a comparison is made between these two studies, a complex character of folk concept of agency and free will appears to be unravelled. It is only because of the different styling of the study questions that only two different aspects of the nature of folk concept of free will (see Table 5) come out which need not be viewed in contrast from one another. While Nahmias's study was designed to test whether the threat of mechanistic causation of intentional action is overridden by the threat of deterministic causation of intentional action, it accordingly pitted psychological causation against causation induced by brain events.

And people quite expectedly chose psychological causation as the plausible ontological explanation. Unlike in Nahmias's study, Monroe and Malle's study did not try to influence folk intuition in any way with the result that the subjects in the latter's study chose to put the decision-making capacity of the agent above the "neural impulses". A hint of event-causal belief was also found when subjects supported their predominantly agent-causal view with arguments like "neural impulses are themselves caused by something in the mind" or "neural impulses alone do not cause behaviour" (see Table 4).

Study 3a, 3(b_1, b_2) and 3c

Malle and Knobe (1997) embarked upon a comprehensive analysis (study 3a) of folk concept of intentional causation of behaviour, in which folk psychology was revealed to embrace a model that comprised of a web of agent-manoeuvred events, viz. beliefs, desire, intention, skill and awareness. Although Malle and Knobe did not intend to interpret the outcome of the study as an illustration of libertarian belief, either agent-causal or event-causal, I suggest a deeper analysis would reveal why folk intuitions led the subjects of this study to indicate that belief–desire and well-formed intuition ensuing from the belief–desire were an imperative for intentional causation of behaviour. For example, when asked to respond to the question: "What it is like to act intentionally?", the study found subjects offering descriptions like "The person meant to act that way and was motivated to do so" and "Someone gave thought to the action beforehand and chose to do it" (see also Malle 2006, pp. 216–217). Malle and Knobe suggested that an entrenched belief in intention and desire (as the first response shows) and/or belief along with desire (as indicated by the second response) pervaded folk concept concerning the causal prerequisites of intentional behaviour. Such descriptions show that pre-theoretical intuitions about intentionality are not averse to the idea of event-causation. Responses like the ones stated are an indication that folk psychology puts belief–desire–intention in the causal series leading to the intentional action in a hierarchical way. The support for agent causation also appears to emerge, as evidenced by the subjects' emphasis on the role of awareness and skill.[8] The subjects may have tended to enlist awareness and skill not because they think they add to the causal repertoire of the agent, but necessarily add to the selfhood of the agent, helping her implement the action through the belief–desire–intention event triad. Malle and Knobe also agree on this when they acknowledge, "Performing an intentional action … requires at least minimal conscious awareness" (p. 108). Similarly, skill or adeptness in executing an intended action may have been deemed by the subjects as enhancing the causal power of the agent. Malle and Knobe also concur that "… people only consider an action intentional if there is evidence of the actor's skill" (p. 109). In support of their claim they presented their subjects with a scenario in which the protagonist, John (a) has either mastered the skill of flipping a coin and making it land on the side he wants (or is still an amateur at it), (b) has (or has not) a desire to go to a movie and (c) has (or has not) a belief that by making the coin land on its tail he would be able to decide whether to catch the movie. The coin finally lands on its tail. The subjects were then asked to respond with Yes/No to the following questions (p. 110):

1. Did John *try* to make the coin land on its tail?
2. Did John *intentionally* make the coin land on its tail?

[8] Responses citing awareness as an ingredient of the ontology of intentional behaviour took some such forms: "This person thought about the action before he did it and was fully aware of performing the action while he was doing it" (Malle and Knobe 1997).

The difference between responses to question reducegap1 and 2 was, while most subjects believed that even in the presence of only desire or only belief as reducegap a precondition, John could have tried to do the tail-landing act with the coin, under no circumstances, could he do the same *intentionally* with only-belief or only-desire precondition. Even the desire–belief condition was not deemed sufficient (see Table 3 of Malle and Knobe 1997, p. 110); it was thought that he must have had mastered the skill before he could *intentionally* do that act fuelled by his desire and belief. Skill, like awareness, is then highly likely to be a fixture in the folk concept concerning the ontology of intentional behaviour insofar as it is seen as constituting the selfhood of the agent engaged in implementing a goal or intention.

Knobe and Nichols (2011) conducted a series of studies ($3b_1$, $3b_2$) the outcome of which according to them indicated a dominant belief in what they referred to as an "executive conception of self" as opposed to the "bodily conception of self"[9] and the "psychological conception of self"[10] bolstering their hunch that "people will continue to have the sense that if everything is controlled by these [physical and psychological[11]] states and processes, somehow they themselves cannot be fully free or responsible" (p. 531). On the executive conception of the self, the mental phenomena, although very much a part of the aetiology of intentional behaviour, have a higher-level controller that "consider these states and arrive at a decision" (p. 539). In order to test their hypothesis, Knobe and Nichols (study $3b_1$) randomly presented the subjects with either of the two conditions—one trying to explain a bodily action in terms of a cause that requires effort and another, and the other in terms of mechanistic causes. The first condition upheld "choice cause", while the second "emotion cause". The subjects were then asked to put on record their degree of agreement regarding the agent's causing that behaviour using a scale from 1 to 7, 7 indicating strongest agreement and 1 strongest disagreement.

Choice-cause condition John's eye blinked as he wanted to draw attention of a friend.
Emotion-cause condition John's eye blinked as he was startled and upset.
The question John caused his eye to blink. When is it true? (a) when John's mental states cause that act? or (b) when John's emotions cause that act?

$$\text{Number of participants} = 30$$
$$\text{Mean rating for emotion-cause} = 2.6/7\,(\text{disagreement})$$
$$\text{Mean rating for choice-cause} = 5.5/7\,(\text{agreement}).$$

[9] The classical example of the bodily conception of the self has been sketched by Thomas Huxley when he declared that the "soul stands related to the body as the bell of a clock to the works" (Huxley 1874 [2002], p. 29).

[10] The psychological notion of self emerged in the writings of David Hume, notably when he attributed the freedom to act to the "*power of acting or not acting, according to the determinations of the will*" (Hume 1748 [1999], p. 77).

[11] The bracketed parts indicate my emphasis.

Explanation

Knobe and Nichols tried to account for this difference in responses in the two conditions by appealing to a hardwired conception of self adopted by the subjects—the executive conception of self, one in which the agenthood is not perceived as reducible to the relevant psychological states. This view was readily taken by the subjects when they were provided with the choice-cause condition, as the purposive act of John ("trying to draw attention" served as the cue) induced them to approach the question of agency from what Knobe and Nichols labelled as a "zoomed-in" perspective—one in which the self is viewed as executing the pertinent mental states and processes for implementing intention. When confronted with the emotion-cause condition however, adoption of this "zoomed-in" perspective led them to believe that John's eye-blinking act was merely a mechanistic offshoot of his mental states. The perception of the absence of agential control then was the cause for the denial of agency in the emotion-cause condition.

That folk has a strong belief in an executive-like self was reiterated in the next study as well ($3b_2$). In anticipation of an objection to the previous study that the high degree of disagreement recorded in emotion-cause condition was due to the fact that emotional states like "being startled or upset" were not considered by the subjects as agent-involving mental states like the agent's desires, reasons, etc. relevant for doing something intentionally, the latter being considered by the agent essential for making an evaluative judgment, Knobe and Nichols formulated a test condition that depicted behaviour in terms of an agent's thoughts. All subjects were presented with the following condition and asked to select any one of the statements that followed.

The Condition

John's hand trembled as he thought about asking his boss for a promotion.

Statement 1 John caused his hand to tremble
Statement 2 John's thoughts caused his hand to tremble

$$\begin{aligned}&\text{Number of participants} = 41\\&\text{Mean rating for self-cause} = 3.76/7\,(\text{disagreement})\\&\text{Mean rating for mental-cause} = 5.8/7\,(\text{agreement}).\end{aligned}$$

Explanation

Here more subjects agreed than disagreed that it was John's thoughts that caused his hand to tremble. The result could be interpreted from two different angles. First, subjects very likely adopted a psychological, a zoomed out concept of self, one in which mental events like thoughts constitute selfhood that allow them to approve of John's thoughts playing a causal role. Knobe and Nichols chose this interpretation. On a second interpretation, I suggest that the folk belief in the agent-executed-

event-causal libertarianism once again comes to the forefront. Trembling of hands when we dread doing something surely is viewed as a specimen of behaviour over which one has little control. In all likelihood therefore the subjects found the thought-cause (mental event cause) scenario more intuitively appealing because they must have determined that the self in this case played no role over executing the psychological states that resulted in the involuntary action.

In yet another study (3c) carried out by Knobe and Nichols (2011), the untutored intuition extracted from subjects evinced that a sharp line is drawn between the actions performed by an automaton and a human in terms of the nature of the underlying causal processes that can be manoeuvered and modified by some higher-level entity. Asked whether a computer with a robotic hand can override its programming codes to move its hand to the right so as to be able to push a button and prevent the administration of an electric shock to a laboratory rat, even as the computer is fed with the specific instruction to administer the shock, most subjects tended to give a negative response. In a sharp contrast, the same subjects expressed the conviction that a human in a similar setting could override his desires, urges and thoughts, both conscious and unconscious, to push the button and stop the electric shock, even though he was instructed to do exactly the opposite. This again indicates that ordinary intuition supports the notion of self that forms intentions and controls decisions, overriding but not abolishing the mental causes.

Conclusion

The primary claim of the agent-executed-event-causal libertarianism as laid out in this work was, the local-level processes preceding a decision or the implementation of a goal embedded in the decision could not but be micro-indeterministic. These processes involving mental events like beliefs, desires, intentions, etc. involved in turn a higher-level controller that made it impossible for the processes to end up in only one direction regardless of, however, much deliberation occurred prior to the settlement of a decision. That is, these processes as manoeuvered by the self left it non-randomly undetermined which of the set of mental events would be found by the self worth considering and finally contributing to the agent-specific "recipe" for intention implementation, leaving open the possibility for alternate action. This was the thrust of the argument set forth by libertarian philosophers like Kane, Mele and Steward. The claim also received a boost from the folk-psychological intuitions as examined in "Folk-Psychological Concepts: A Philosophical Reference Point" section. Thus the apparent threat thought to be posed by determinism at the neurobiological or psychological was nullified. However, there is an important way in which the *indeterministic determination* by the self at the "local level" is intimately connected to the self-determinism at the "global level". If we assess a person's decisions and goals from a global panoramic perspective, then we would perhaps be more inclined to say that the person could not have acted otherwise, because she already has self-determined her nature of purposive activities through "the stored memories of a lifetime, value systems, both innate and acquired, plus all the various mental powers of cognition, reasoning, intuition, etc." (Sperry 1980,

p. 200). What the self would choose at this or the next moment may remain unbeknownst to an external observer, but as she chooses from the repertory of her self-determined mental events, the choices remain in metaphysical consonance with what she determined herself to become. To quote Hobart (1934 [1969]) in this connection:

> To say that they (the acts)[12] come from the self is to say that they are determined by the self—the moral self, the self with a moral quality…. When he (the indeterminist) maintains that the self at the moment of decision may act to some extent independently of motives, *and is good or bad according as it acts in this direction or that,* he is simply setting up one character within another, he is separating the self from what he understands by the persons' character.

Acknowledgements The analyses and discussion contained in this paper form a significant part of my PhD dissertation being written under the supervision of Prof. Atashee Chatterjee Sinha, Department of Philosophy, Jadavpur University. I would like to express here my heartfelt gratitude to the University Grants Commission and the Department of Philosophy, Jadavpur University for helping me obtain all the paper and online resources I needed to prepare this article.

References

Adam, C., & Tannery, P. (Eds.). (1973). *Œuvres de Descartes* (Vol. VII). Paris: Librairie Philosophique.

Balaguer, M. (2010). *Free will as an open scientific problem*. Cambridge, MA: The MIT Press.

Churchland, P. M. (1988). *Matter and consciousness: A contemporary introduction to the philosophy of mind*. Cambridge, MA: MIT Press.

Clarke, R. (1993). Toward A Credible Agent-Causal Account of Free Will. *Nous, 27*(2), 191–203.

Clarke, R. (2003). *Libertarian accounts of free will*. Oxford, NY: Oxford University Press.

Dennett, D. (1981). On giving libertarians what they say they want. In D. Dennett (Ed.), *Brainstorms: Philosophical essays on mind and psychology*. Cambridge, MA: The MIT Press.

Hobart, R. E. (1969). Free will as involving determinism. In J. Hospers (Ed.), *Readings in introductory philosophical analysis* (pp. 152–174). London: Routledge and Kegan Paul. **(originally published in Mind, XLIII (1934), pp. 1–27 (page references cited here are to the reprinted version))**.

Hume, D. (1748). *An enquiry concerning human understanding* with an introduction by J. N. Mohanty (1999). Calcutta: Progressive Publishers.

Huxley, T. H. (1874). On the hypothesis that animals are automata, and its history. In: D. Chalmers (Ed.) *Philosophy of mind: Classical and contemporary readings* (2002). New York: Oxford University Press.

Kane, R. (Ed.). (2005). *The Oxford handbook of free will*. New York: Oxford University Press.

Kane, R. (2007). Libertarianism. In J. M. Fischer, R. Kane, D. Pereboom, & M. Vargas (Eds.), *Four views on free will* (pp. 5–43). Oxford, MA: Wiley.

Kevin, T. (2015). Free will. http://www.iep.utm.edu/freewill/. Visited on February 20, 2015.

Knobe, J., & Nichols, S. (Eds.). (2008). *Experimental philosophy*. Oxford: Oxford University Press.

Knobe, J., & Nichols, S. (2011). Free will and the bounds of the self. In R. Kane (Ed.), *Oxford Handbook of Free will* (2nd ed., pp. 530–554). New York: Oxford University Press.

Maitra, S. K. (1963). *The ethics of the hindus* (3rd ed.). Ballygunge: Calcutta University Press.

Malle, B. F. (2006). Of windmills and strawmen: Folk assumptions of mind and action. In S. Pockett, W. P. Banks, & S. Gallagher (Eds.), *Does consciousness cause behavior? An investigation of the nature of volition* (pp. 207–231). Cambridge, MA: MIT Press.

Malle, B. F., & Knobe, J. (1997). The folk concept of intentionality. *Journal of Experimental Social Psychology, 33,* 101–121.

[12] The parts within parentheses indicate my emphasis.

Mele, A. (1997). Agency and mental action. *Philosophical Perspectives, 11,* 231–249.
Mele, A. (2002). Autonomy, self-control, and weakness of will. In R. Kane (Ed.), *The Oxford handbook of free will* (pp. 529–548). New York: Oxford University Press.
Monroe, A. E., & Malle, B. F. (2010). From uncaused will to conscious choice: The need to study, not speculate about people's folk concept of free will. *Review of Philosophy and Psychology, 1,* 211–224.
Nahmias, E. (2006). Folk fears about freedom and responsibility: Determinism vs. reductionism. *Journal of Cognition and Culture, 6*(1–2), 215–237.
Nahmias, E., Coates, D. Justin, & Kvaran, T. (2007). Free will, moral responsibility, and mechanism: Experiments on folk intuitions. *Midwest Studies in Philosophy, 31,* 214–242.
Nichols, S. (2004). Folk concepts and intuitions: From philosophy to cognitive science. *Trends in Cognitive Sciences, 8*(11), 514–518.
O'Connor, T. (2000). *Persons and causes: The metaphysics of free will*. Oxford: Oxford University Press.
Reid, T. (1895). *The works of Thomas Reid, D.D.,* 8th edn. Ed. Sir William Hamilton. Edinburgh. Reprinted with an introduction by H. M. Bracken (1967). Hildesheim: Georg Olms Verlag.
Rigato, M. J. (2015). Reductionism, agency and free will. *Axiomathes*, *25,* 107–116.
Searle, J. (2000). Free will as a problem in neurobiology. *Philosophy, 76,* 491–514.
Searle, J. (2001). *Rationality in action*. Cambridge, MA: The MIT Press.
Searle, J. (2004). *Mind: A brief introduction*. New York, Oxford: Oxford University Press.
Sosa, E. (2007). Experimental philosophy and philosophical intuition. *Philosophical Studies, 132,* 99–107.
Sperry, R. W. (1980). Mind brain interaction: Mentalism, yes; dualism, no. *Neuroscience, 5,* 195–206.
Steward, H. (2009). The truth in compatibilism and the truth of libertarianism. *Philosophical Explorations, 12*(2), 167–179.
Swinburne, R. (2013). *Mind, brain and free will*. Oxford: Oxford University Press.
Turner, J., & Nahmias, E. (2006). Are the folk agent-causationists? *Mind and Language, 21*(5), 597–609.
Van Inwagen, P. (1983). *An essay on free will*. Oxford: Oxford University Press.
Vargas, M. (2006). Philosophy and the folk: On some implications of experimental work for philosophical debates on free will. *Journal of Cognition and Culture, 6*(1–2), 252–253.