

Igniting the Flicker of Freedom: Revisiting the Frankfurt Scenario

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Received: 18 December 2006 / Accepted: 19 April 2007 /

Published online: 23 June 2007

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Abstract This paper aims to challenge the view that the sign present in many Frankfurt-style scenarios is insufficiently robust to constitute evidence for the possibility of an alternate decision, and therefore inadequate as a means of determining moral responsibility. I have amended Frankfurt's original scenario, so as to allow Jones, as well as Black, the opportunity to monitor his (Jones's) own inclination towards a particular decision (the sign). Different outcome possibilities are presented, to the effect that Jones's awareness of his own inclinations leads to the conclusion that the sign must be either (a) a prior determinate of the decision about to be made, (b) prior and indeterminate (therefore allowing for a contra-inclination decision to be made), or (c) constitutive of a decision that Jones has made but is not yet aware of. In effect, this means that, prior to the intervention of Black, Jones must have decided to do otherwise or could have so decided. Either way, although Frankfurt's conclusion, that Jones could not have *done* other than he did, is upheld, the idea that he could not have *decided* otherwise must be rejected, and with it the view that the sign is nothing more than a flicker of freedom insufficient for assigning morally responsibility.

Keywords Free will · Determinism · Self-monitoring · Moral responsibility

Introduction

In *Alternate Possibilities and Moral Responsibility*, Frankfurt (1969) presents an intriguing challenge to what he claimed, at the time, was a principle accepted by practically everyone engaged in the free will debate, even those in otherwise radically opposed camps. The principle of alternate possibilities, as he called it, states that a person is morally responsible only if he could have done otherwise. So “overwhelmingly plausible” is it, Frankfurt tells

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us, that “some philosophers have even characterized it as an *a priori* truth” (p.829). Yet, despite this, for Frankfurt, the principle is quite simply false. In contrast, he states:

A person may well be morally responsible for what he has done even though he could not have done otherwise. The principle’s plausibility is an illusion, which can be made to vanish by bringing the relevant moral phenomena into sharper focus. (pp.829–30)

Frankfurt’s choice of relevant moral phenomena takes the form of an often cited scenario involving Black in the villainous role of “counterfactual intervener” (Fischer 1994). Black is able to intervene should the protagonist (Jones₄) indicate that he is about to decide to do other than what Black wants him to do. As Frankfurt explains:

Suppose someone – Black, let us say – wants Jones₄ to perform a certain action. Black is prepared to go to considerable lengths to get his way, but he prefers to avoid showing his hand unnecessarily. So he waits until Jones₄ is about to make up his mind what to do, and does nothing unless it is clear to him (Black is an excellent judge of such things) that Jones₄ is going to decide to do something *other* than what he wants him to do. If it does become clear that Jones₄ is going to decide to do something else, Black takes effective steps to ensure that Jones₄ decides to do, and that he does do, what he wants him to do. Whatever Jones₄’s initial preferences and inclinations, then, Black will have his way. (p.835)

According to Frankfurt, even though Jones₄ (hereafter, Jones) could not have done otherwise (because of the possibility of Black intervening), he (Jones) is still morally responsible for what he has done, as it was done without the intervention of Black. In other words, whenever a responsibility undermining factor, such as the intervention of Black, exists in the alternate sequence of events but takes no part in the actual sequence of events, then the agent of action must be morally responsible even though, due to the presence of the intervener, he could not have done other than he did (Fischer and Ravizza 1991).

In his original article, Frankfurt suggests that a twitch might be used to indicate that Jones is about to decide to do A (as opposed to no twitch for B). Over the years, variations on this ‘sign’ have appeared, such as flushing bright red (Blumenfeld 1971) or similarly blushing (Widerker 1995), the monitoring of the protagonist’s brain for an unspecified sign (Fischer and Ravizza 1991 and Zagzebski 2000), the initiation of a specified sequence of neuronal excitation (Stump 1996) or a neurological pattern in the brain (Fischer 2002), the subject’s deliberations and intentions (McKenna 2005), or even the occurrence of moral reasoning of a specified force (Pereboom 2000). Whatever the sign, its function is the same: that of triggering the counterfactual intervener with the effect that Jones (or whomever) could not have done other than he did. Despite the variations, each scenario preserves Frankfurt’s original structure (even if not everyone agrees with the conclusion shown in #3).¹

1. S performs A alone.
2. Unbeknownst to S, a force F would have *made* S perform A had S shown any sign of not performing it.

¹Fischer and Ravizza (1998), for example, claim that moral responsibility is dependent upon the type of control condition that the protagonist is subject to – be it *guidance* (responsible) or *regulative* (not responsible). For detailed discussion on this and other aspects of Fischer and Ravizza’s position, see Haji (2005).

3. S is morally responsible for performing A, even though (due to the presence of F) S could not have not performed A.²

Should Jones show any inclination towards deciding otherwise, he is made *to decide* and *to do* what Black wants him to decide and to do. A question has therefore arisen over what this inclination amounts to. Fischer (2002), for example, notes that within the Frankfurt-style scenarios:

...one can always find a flicker of freedom... in so far as they are developed as “prior sign” cases. That is, the agent will always at least have the power to exhibit an alternative sign. (p.98)

Fischer does not consider such ‘flickers of freedom’ to be sufficiently robust to form the basis for our moral judgements. In other words, the prior sign is not equivalent to an alternate decision. It is not, therefore, that Jones at first decides to do something other than what Black wants him to and is then made to change his mind. In fact, in an example by Stump (1996), the prior sign takes the form of a particular neural excitation which always occurs at the beginning of a larger neural sequence, which in turn always culminates in a certain decision to act. Stump makes it clear that the initial neural excitation does not amount to a decision and, like Fischer, claims it is not sufficiently robust to count as an alternate possibility.

In what is to follow, I will provide my own Frankfurt-style scenario in which Jones, as well as, Black is able to monitor the prior sign. What I aim to show by introducing this amendment is that Frankfurt’s original scenario and its variations only succeed in establishing that Jones could not have *done* other than he did, but not that he could not have *decide to do* otherwise (Widerker 1995 makes a similar claim). To do this, I will interpret the role played by the sign in different ways. I will show that whichever way the sign is interpreted – whether it be as a prior determinate of the decision, or as prior to the decision but indeterminate, or even as a decision the subject is not yet aware of – each interpretation requires the same conclusion: that the sign and what it indicates constitutes more than a mere flicker of freedom and, therefore, that the protagonist could have decided other than he did.

Self-monitoring the Sign

In each Frankfurt-style scenario, the sign is, by definition, observable to the counterfactual intervener: sticking with tradition, I’ll call him Black. Black monitors the protagonist, Jones, and either intervenes or does nothing depending on whether Jones exhibits the sign or not. Now, if the sign is available to Black, is it not also available to Jones (in principle, at least)? I can think of no good reason why it should not be; after all, it is something that can be monitored. If it can be monitored by Black, from a third-person perspective, then why not by Jones from the same perspective? Accepting, then, that both Black and Jones are privileged with the same third person knowledge of what the sign indicates, how does this fact impact on the coherence of the Frankfurt-style scenario?

In considering this question, let us start with Frankfurt’s suggestion of a twitch as a sign, although it could just as easily be a blush, or frown, or any other behaviour (I will introduce *neural* signs later). In my amended version, Jones, like Black, is aware of what the twitch

²Adapted from Schnall (2001).

indicates – that he (Jones) is about to decide not to kill Smith, and thereby not kill Smith (which of course is the opposite of what Black wants him to do). If we continued to follow the Frankfurt format, at this point Black would intervene and Jones would decide to kill Smith. However, instead, let us focus on the fact that Jones is aware of the twitch and what it reliably indicates. Which is what exactly? Well, what it is not, apparently, is an indication of the decision itself. Rather, it indicates only that a decision is *about to be made*. The twitching, then, is associated with the decision *process* and not the decision *event* (Widerker 1995). Importantly, we are told that the twitching does not indicate simply that a deliberation is taking place (it is not a kind of nervous twitch that occurs whenever Jones is thinking hard). Instead, it is meant to reliably indicate what the *outcome* of the deliberation will be – in this case, the decision not to kill Smith. We are told specifically that the twitch precedes the decision to act. Therefore, at the ‘twitching stage’ no decision has been made. Yet, in my amended scenario, I am allowing that Jones is aware of what this sign reliably indicates (from the same third-person perspective as Black). As such, upon commencement of twitching, would Jones declare: “Ah, it seems I am about to decide not to kill Smith.” After all, if this is what Black would conclude then why not Jones? What Jones would not say, as yet, is this: “I have *decided* not to kill Smith.” Why? Because we are told that this decision has not yet been made.

But does it not strike the reader as odd that the presently-twitching Jones would state, on good authority, that he is about to decide not to kill Smith, but not that he has decided not to kill Smith? Surely Smith would be just as relieved (although perhaps a little puzzled) by the declaration from Jones “Although I haven’t yet decided not to kill you, I am about to decide not to kill you” as he would by simply being told “I have decided not to kill you.” It leaves one to puzzle over what the difference might be, in this context, between Jones’s being about to decide to do A and actually deciding to do A?

Interpreting the Sign

How could we make sense of the fact that, in this situation, Jones is aware of the fact that he is about to decide not to kill Smith and also of the fact that he has not yet decided not to kill Smith? Consider two possible responses (they are not mutually exclusive).

- (a) Being about to decide not to kill Smith could simply mean that Jones has not yet made the actual decision not to kill Smith, even though it looks (based on the sign) like that is what he will decide. It allows for the possibility that, despite what the sign reliably indicates (that Jones is about to decide not to kill Smith), he could decide to do otherwise. If it does not allow for this, then there must be a determinate relationship between the sign and the decision, which brings us back to my original point about how they differ. (More on this later.)
- (b) It could be that the sign indicates that Jones has *decided* not to kill Smith although he is not yet aware (from a first-person perspective) of having made this decision. This interpretation requires further explanation as it goes against what we are led to believe in the Frankfurt-style scenario – namely, that the sign is something which precedes the decision and is not therefore an indicator of the decision itself. Under this interpretation, it is not that the twitch occurs pre-decision, and acts only as a reliably indicator of it. Rather, the twitch indicates a decision which, under normal circumstances (in which only Black monitors the sign), Jones would not yet be aware

of (he would not yet have first-person awareness of the decision). To reiterate, what the twitching precedes is Jones' normal first-person awareness of the decision; not, importantly, the decision itself. Under this interpretation, the sign indicates that the decision has been made.

Let us consider each interpretation in more detail. Suppose, as is suggested by (a), that Jones, despite what the sign indicates, is able to decide not to do A, thereby making it only *likely* that he will decide not to kill Smith (Widerker 1995). It would seem, then, that being about to decide to do A is really just another way of saying that I am still in the process of thinking about what to do. As things stand, it is likely that I will decide to do A, but I may not. I have, as it were, the power of veto. Such a possibility, of course, immediately raises the question of what it is to reliably indicate something under such circumstances.³ That issues aside: by allowing for the possibility of an alternate decision to be made, the twitch now indicates not what the decision will be but what the decision is most likely to be.

Black, of course, could still intervene even if it were only *likely* that Jones would decide not to kill Smith. However, this would surely result in Black having to intervene regardless of the presence or absence of a reliable indicator. To explain: if it is possible, in the end and contra what the sign indicates, for Jones to decide to kill Smith, so it is possible, in the absence of any such sign, for him to decide not to kill Smith. This means that if Black felt that there was no need to intervene because Jones was not twitching, and therefore was likely to decide to kill Smith, Jones could still decide, in the absence of intervention, to do otherwise. Alternatively, if Black were to intervene – just to be on the safe side, so to speak – even though Jones was not twitching (and therefore unlikely to decide not to kill Smith), then the responsibility undermining factor (Black's intervention) would be present continuously. In other words, if Black wanted to be certain that Jones would decide to kill Smith then he would have to intervene irrespective of what the sign indicated because the sign is only capable of predicting the likely outcome. Under such circumstances, Jones could not be held morally responsible for something he is, in effect, compelled to decide to do, irrespective of any sign.

With regard to interpretation (a), there is nothing new in what I have said so far. Therefore, let us again focus on what Jones is aware of in my amended scenario. Jones (having the same third-person knowledge as Black) still understands that the twitching is a sign, except now it indicates only that he is *likely* to decide not to kill Smith. How will the availability of this information affect his impending decision? Imagine that I am Jones. What would my experience be like? Presumably, I would be aware of the fact that I am deliberating over whether to do A or B; and that it seems likely that I will decide to do A (not kill Smith) because I have started to twitch. Now, as an indicator of my likely decision, the twitching must be either congruent or incongruent with my current reasoning if my reasoning favours a particular course of action. It could be, of course that I have no preference either way: at least nothing I am aware of. However, leaving that aside for the moment, let us say (for the sake of argument) that the sign does not coincide with aspects of my reasoning – reasoning that favours killing Smith. In such a situation, presumably my sudden twitching would come as a surprise to me because it would indicate an imminent decision that is likely to be contrary to my present reasoning. I might say to myself: "My

³If by reliable indicator we mean that it indicates only what is likely to occur, then we are left to wonder: How likely is likely? If, on the other hand, the reliable indicator cannot indicate anything other than what the decision will be then this is suggestive of determinism. It also returns us to the question I posed earlier: What is the difference between Jones knowing what he is about to decide and knowing his actual decision if one necessarily follows from the other?

current reasoning leads me to favour killing Smith (although I haven't yet decided), so why (based on what my twitching indicates) does it seem likely that am about to decide against killing him?" Alternatively, suppose my deliberation is leading me towards the decision not to kill Smith. In this case, the twitching is merely confirming what I am already aware of – that it is likely that I will decide not to kill Smith (based on my deliberation).

If my reasoning favours killing Smith then, first of all, why would I start twitching? What would cause in me the occurrence of a sign that is meant to reliably indicate that I am about to decide not to kill Smith? After all, it is incongruent with the direction of the deliberation I am aware of. Secondly, if I am, as part of my conscious deliberation, leaning towards killing Smith, then why would a sign to the contrary alter the likely direction of my decision when it finally occurs? The sign indicates which decision I am likely to make. What it does not do is provide a reason for this decision. In fact, in this situation, it is incongruent with the likely outcome of my reasoning as it currently stands. In terms of what I would experience, I can only suggest that it would be puzzlement if my conscious deliberation indicated one likely outcome and my twitching the opposite. Furthermore, would I not want to ignore the sign and what it indicates, perhaps passing it off as some strange anomaly in favour of my reasoned deliberation? If I cannot, then does this not make my deliberation epiphenomenal, and, if so, then why would it only be *likely* that I would decide to do A and not that I *would* decide this?

Alternatively, perhaps the sign, and my awareness of what it indicates, gives me reason to reconsider the direction of my deliberation. I may entertain the possibility that there is some reason for my twitching that I am unaware of: that “deep down” I do not want to kill Smith, despite being conscious of favouring the opposite course of action. If we allow for this possibility then all that would happen, I contend, is that I would suddenly have a reason for favouring a decision that is now congruent with what the sign indicates – namely, not to kill Smith. My decision, when it is made, would be based on *some* reason I am aware of, even if my awareness of the sign and what it indicates, caused me to reconsider what this reason might be – namely, that “deep down” I don't want to kill Smith, which is why I started twitching.

Finally, suppose that even after prolonged deliberation I have no preference either way regarding the fate of Smith. Black might conclude that no preference, and therefore continued (endless) deliberation, amounts to the same undesired outcome – namely, Smith's continued existence. To overcome this, we could set Jones a deadline which, for the sake of argument, is about to expire. Still in the role of Jones, I have to make a decision now. I am aware of having no preference either way, but also that I have to decide to do something. Whatever my decision, it would be experienced as capricious;⁴ brought about simply because I was in a forced-choice situation. It also seems unlikely that a decision to kill or not kill someone could be made without any preferred reason either way. I prefer to believe (even if this belief is misplaced) that a decision to kill someone is based on *some* reason, even if it is a poor one, rather than simply as the result of not having a reason not to kill. As such, let us make the choice of whether to do A or B simply a choice between a scone and a Danish (pastry). In addition, let us change the sign reliably indicating the impending decision to that of a particular neural event. Better to have this than have someone twitching prior to his decision to select a scone! Just as before, both the sign and what it indicates are available to me (as Jones).

As the deadline approaches, I (along with a surreptitious Black) monitor my neural activity. A neural event occurs that reliably indicates that I am about to decide to choose the

⁴For a detailed discussion on such capricious, forced-choice conditions, see Balaguer (2004).

scone. Now, upon becoming aware of this impending decision, via the neural monitor, what do I in fact decide? If the reliable indicator indicates that I *will* choose the scone, even though I am not aware of having any reason for making this decision (other than having to decide to choose one of the two food items), then I will decide to choose the scone irrespective of any deliberation. Perhaps I would conclude that “deep down” this is in fact what I ‘really’ want. However, this would only be a rationalisation; it would make no difference to the decision I make, the outcome of which is already indicated by the sign.⁵ Under such conditions, as before, we are left to ask what the difference is between being aware that one is about to decide to choose A and deciding to choose A. Imagine that someone had placed a bet on my choosing the scone. If I were to report “I haven’t yet decided to choose the scone, but I am about to decide this,” would our gambler not be on his way to collect his winnings?⁶ Alternatively, if the neural event indicates only that it is *likely* that I will decide to choose A then, as previously stated, I may in fact decide to choose B irrespective of what the sign is telling me. If I am aware of what my likely decision is going to be – to choose A (the scone) – but, equally, that it is only likely that I will choose this, then any alternate decision, should it arise, would surely have to be based on a reason that stems from my awareness of what the neural event reliably indicates. We know I have no preference for either the scone or the Danish (at least none that I am aware of), so my decision, when it is made, must stem from either my wanting to accept what the likely decision will be (choose the scone), or from my not wanting to accept this. Not because I have a sudden preference for one food item over the other, but because I wish to ‘go along with’ (or against) the indicated likely outcome as indicated by the sign. Whatever decision is finally made, it will be based upon some reason – perhaps whether to accept or reject whichever putative decision the neural event reliably indicates is likely to occur.

If Black wishes to force Jones (for reasons best known to himself) to decide to choose B (the Danish) then, as before – in the case of killing Smith – he must either intervene regardless of the sign (to be on the safe side) or accept that Jones, even if it seems as if he will choose the Danish, could still do otherwise. What this means for the Frankfurt-style scenario is either that the sign is equivalent to the decision that is about to be made (because there is no difference between an awareness of being about to decide and actually deciding), in which case it is sufficiently robust to constitute an alternate possibility, or it is indeterminate – in which case, contrary to Frankfurt’s claim, an alternate decision is possible.

Returning, now, to interpretation (b). Recall that I claimed that the sign, rather than being prior to the decision, in fact constituted an unconscious decision to act; something Jones (under normal circumstances) would not have first-person awareness of until moments later.

In support of this claim, consider the work of Kornhuber and Deecke (1965) who were able to measure the neuronal activity directly preceding a voluntary act. This they called the *Bereitschaftspotential* or ‘readiness’-potential (RP). They found that neuronal activity occurred up to 1 s prior to the onset of the motor act. Similarly, Libet et al. (1983) discovered that in the case of pre-planned, but otherwise free movement, RPs occurred on average 800 ms before the self-initiated action. Of significance, then, is the fact that, on average, a subject’s awareness of her decision to act begins 350 ms *after* the RP is measured. It seems that neuronal activity relating to the onset of an intentional act precedes

⁵Even though, under these conditions, this rationalisation makes no difference to the decision, perhaps it provides us with a sense of freedom. This is compatible, I believe, with Korsgaard’s (1996) Kantian claim that in order to do anything, we must decide what to do as if we are free (p.163).

⁶Once again we are left to consider whether such an eventuality leads us towards determinism.

by some time the subject's awareness of her *decision* (see Young 2006 for a more recent review of this research).

Bittner (1996) argues that despite the delay between the RP and the subject's awareness of the decision, the two are identical in so far as they relate to the same decision: for although the RP corresponds to our original decision to act, we do not become aware of it until moments later. In a similar vein, Stephens (1996) states:

“Suppose that my subjective experience of deciding to do A results from an (internal) perceptual process and that this process takes time. In that case, it is possible that, having decided to do A, it requires more time for me to become conscious of that decision than is required for the decision to initiate my doing A.” (p.97)

The findings of Libet et al. are certainly compatible with the Frankfurt-style scenario. Let us say that the sign monitored by Black corresponds to the RP that constitutes the initiation of the decision to do A. In the absence of intervention, Jones would become aware of that same decision. With intervention (in the form of Black eradicating the original RP and replacing it with one he has generated in Jones' brain), it would be this new RP that Jones would become aware of.

If we interpret the Frankfurt-style scenario in this way, the sign amounts to more than a flicker of freedom; rather, it constitutes the unconscious decision to act for which Jones can be held morally responsible. Despite the compatibility of Libet et al.'s findings with the Frankfurt description, it would be easy enough to amend the sequence of events so as to incorporate their findings and still maintain that the sign occurs prior to the decision to act (or RP). After all, something must cause the RP to occur. If this adjustment is made – such that at t_1 the sign occurs, at t_2 the decision is made, at t_3 Jones becomes aware of the decision, and at t_4 Jones carries out the act – then any proponent of the Frankfurt-style scenario must still overcome the initial objections that stem from my own amended scenario when explaining the relationship between the sign at t_1 and the decision at t_2 . In other words, it would still require us to ask: What is the difference between a third-person awareness at t_1 (equivalent to Black's awareness) of the sign and the RP which, in the absence of intervention, will lead to an awareness of the decision at t_3 ? If the relation is determinate then surely the t_1 event must count as more than a flicker of freedom. If it is indeterminate then Jones could always have done other than what the sign reliably indicated.

Conclusion

By maintaining that the sign is nothing more than a pre-decision indicator, Frankfurt and his supporters are vulnerable to just the kind of amended scenario presented here, in which we are left to consider what the difference would be between one's awareness of the pre-decision indicator and one's awareness of the decision itself, and therefore between being about to decide and actually deciding. There seems to be no real difference between the two (as is evident when the subject is aware of both), unless one leaves room for the possibility that Jones could decide otherwise. This is unpalatable if one wishes to support Frankfurt's conclusion. Alternatively, if we allow that the pre-decision indicator is in fact an indicator of a decision already made, but for which the subject is not normally aware (until later), then, once again, Frankfurt's conclusion is undermined: for it cannot be claimed that the subject could not have decided otherwise, because he may well have.

In the absence of intervention, Jones could have decided other than to kill Smith: he simply refrained from making that decision. We know that he could have decided other than he did because if he could not, then there would be no need for the presence of Black as a counterfactual intervener. The need for an intervening device prior to any decision Jones makes is therefore evidence for the possibility of an alternate decision (Lamb 1993 make a similar point). Frankfurt-style scenarios maintain that Black's intervention occurs prior to a decision being made. Intervention is initiated on the basis of an inclination towards a particular decision, as indicated by the sign. However, my amended scenario in which Jones, like Black, is aware of what the sign reliably indicates, demonstrates either that:

- (a) The inclination indicated by the sign is causally determinate to the extent that Jones is aware that he is about to decide to do A (just as Black is which is why he intervenes).
- (b) Jones is aware of his likely decision, based on what his inclination indicates, although he could decide otherwise (for reasons discussed). (Black must either intervene irrespective of the sign, or allow that, whatever the sign indicates, Jones may make a contra-inclination decision).

Either way, at the point prior to Black's intervention – call it t_1 – Jones is free to decide other than he is forced to decide after the intervention (at t_2). Moral responsibility based upon alternate possibilities should therefore stem from the state of Jones at t_1 and not t_2 . At t_1 , I have argued that Jones's inclination is either equivalent to a decision (due to its determinate nature) – which Black then intervenes against – or it is indeterminate and therefore allows for the possibility of deciding other than indicated. Whichever interpretation is adopted, it is my contention that Frankfurt's conclusion is undermined.

References

- Balaguer, M. (2004). A coherent, naturalistic, and plausible formulation of libertarian free will. *Noûs*, 38(3), 379–406.
- Bittner, T. (1996). Consciousness and the act of will. *Philosophical Studies*, 81, 331–341.
- Blumenfeld, D. (1971). The principle of alternate possibilities. *The Journal of Philosophy*, 68(11), 339–345.
- Fischer, J. M. (1994). *The metaphysics of free will*. Oxford: Blackwell.
- Fischer, J. M. (2002). Frankfurt-style examples, responsibility and semi-compatibilism. In R. Kane (Ed.), *Free will*. Oxford: Blackwell.
- Fischer, J. M., & Ravizza, M. (1991). Responsibility and inevitability. *Ethics*, 101(2), 258–278.
- Fischer, J. M., & Ravizza, M. (1998). *Responsibility and control: A theory of moral responsibility*. Cambridge: Cambridge University Press.
- Frankfurt, H. G. (1969). Alternate possibilities and moral responsibility. *The Journal of Philosophy*, 66(23), 829–839.
- Haji, I. (2005). Introduction: Semi-compatibilism, reasons-responsiveness, and ownership. *Philosophical Explorations*, 8(2), 91–93.
- Kornhuber, H. H., & Deecke, L. (1965). Hirnpotentialänderungen bei Willkürbewegungen und passiven Bewegungen des Menschen: Bereitschaftspotential und reafferente Potentiale. *Pflügers Archiv für Gesamte Physiologie*, 284, 1–17.
- Korsgaard, C. M. (1996). *Creating the kingdom of ends*. Cambridge: Cambridge University Press.
- Lamb, J. W. (1993). Evaluative compatibilism and the principle of alternate possibilities. *The Journal of Philosophy*, 90(10), 517–527.
- Libet, B., Gleason, C. A., Wright, E. W., & Pearl, D. K. (1983). Time of conscious intention to act in relation to onset of cerebral activity (readiness-potential): The unconscious initiation of a freely voluntary act. *Brain*, 106, 623–642.
- McKenna, M. (2005). Reasons reactivity and incompatibilist intuitions. *Philosophical Explorations*, 8(2), 131–143.

- Pereboom, D. (2000). Alternative Possibilities and Causal Histories. In: J. E. Tomberlin (Ed.), *Philosophical Perspectives, 14, Action and Freedom: A Supplement to Nous*, 119–137.
- Schnall, I. M. (2001). The principle of alternate possibilities and ‘ought’ implies ‘can.’ *Analysis*, 61(4), 335–340.
- Stephens, G. L. (1996). Commentary on “free will in the light of neuropsychiatry.” *Philosophy, Psychiatry, & Psychology*, 3(2), 97–98.
- Stump, E. (1996). Libertarian freedom and the principle of alternative possibilities. In J. Jordan & D. Howard-Snyder (Eds.), *Faith, freedom, and rationality* (pp. 73–88). Lanham, MD: Rowman and Littlefield.
- Widerker, D. (1995). Libertarianism and Frankfurt’s attack on the principle of alternative possibilities. *The Philosophical Review*, 104(2), 247–261.
- Young, G. (2006). Preserving the role of conscious decision making in the *Initiation* of intentional action. *Journal of Consciousness Studies*, 13(3), 51–68.
- Zagzebski, L. (2000). Does Libertarian Freedom Require Alternate Possibilities? In J. E. Tomberlin (Ed.), *Philosophical Perspectives, 14, Action and Freedom: A Supplement to Nous*, 231–248.