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Transplanting brains?

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Brain transplant thought experiments figure prominently in the debate on personal identity. Such hypotheticals are usually taken to provide support for psychological continuity theories. This standard interpretation has recently been challenged by Marya Schechtman. Simon Beck argues that Schechtman's critique rests upon 'two costly mistakes'—claiming that (1) when evaluating these cases, philosophers mistakenly try to figure out the intuitions that they think people inhabiting such a possible world ought to have, instead of pondering their own intuitions. Beck further asserts that (2) brain transplant thought experiments cannot confirm any given theory of personal identity but rather they can only rule out theories. I argue on grounds of the social ontology of personhood that Beck has things back to front. Since our concept of personhood is shaped and informed by contingent de facto norms and structures of the natural world, and as such is heavily normatively laden, the conceptual genesis of personhood must be taken into account. This calls for constructing thought experiments as realistically as possible in order to trigger reliable intuitions. Furthermore, drawing on recent evidence from cognitive science, an empirically informed look at brain transplant thought experiments considering 'Embodied Cognition' reveals that Beck's arguments not only fall short for supporting psychological continuity theories, but also suggests an advantage of Schechtman's 'Person Life View'.

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Introduction: personal identity and thought experiments

Theories of personal identity emphasise competing necessary and sufficient conditions that must be met in order to account for a person persisting through time. The perhaps most widely held view is that some form of psychological continuity is indispensable for personal identity (Shoemaker 1970). Other philosophers place their bets on the continuity of a living organism and posit that psychology is neither here nor there for a person's identity over time (Olson 1997). Yet others appeal to more holistic concepts, seeing personal identity preserved in the complex interplay of biological, psychological and social factors (Schechtman 2014).

The tension between these rival views is not always apparent in everyday life scenarios, but they often start disagreeing heavily in imagined, mostly counterfactual, cases. Eliciting and pondering intuitions by inventing thought experiments is thus a widespread method in the literature on personal identity. Such thought experiments have a common structure: a person undergoes some transformative event which raises questions about the transformed person's identity. It is then asked whether the person, who was alive before the event occurs, is the same person as somebody who is alive afterwards. More often than not, there is more than one possible contender which makes such cases particularly intricate. These types of thought experiments are usually presented in a way that suggests some change in the ontological status of the person undergoing the imagined scenario, and are commonly employed as fundamental parts (occasionally also as illustrative elements) of philosophical arguments on personal identity. Although such counterfactuals have been criticised for relying on predictions about possible world scenarios that we are in no position to make (Wilkes 1988), there is some agreement that conclusions drawn from thought experiments are able to reveal tensions and inconsistencies in views about personal identity. A good deal of the so invoked thought experiments, albeit counterfactual, do not appear to be impossible in principle but merely technically or contingently impossible.

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Brain transplants

In the spirit of John Locke's famous 'Prince and the Cobbler', brain transplant thought experiments figure prominently in the personal identity literature. The story goes something like this: imagine someone's brain (or their cerebrum as the seat of their distinct psychology) is transplanted into someone else's empty skull (or their brain with a removed cerebrum). Then we are asked to ponder: who is the person that wakes up after the operation has been performed; is the resulting person identical to the 'brain donor', or to the 'body donor', or is it an altogether different person? Ever since Sydney Shoemaker (1963) introduced these sorts of imagined cases into the modern debate, they are frequently presented as support for psychological continuity theories and seen as troublesome for competing views. Particularly, they are fairly often regarded as more or less decisive evidence against animalist takes on personal identity. However, there are at least two lines of reasoning against this interpretation. Advocates of bodily continuity theories such as Bernard Williams (1970) have claimed that a variant of brain transplants, sometimes described as 'body swapping', actually works in favour of bodily continuity views. Modern day animalists such as Eric Olson (1997) are allies in this interpretation of brain transplants. Paul Snowdon (2014) has recently presented further arguments questioning the alleged support for psychological continuity theories gathered from hypothetical brain transplants. Another, more general line of criticism comes from Kathleen Wilkes (1988), who claims that due to an inevitable lack of detail in the description of hypothetical scenarios, conclusions drawn from there often lead to a false reliance on predictions about how our concept of personal identity would apply in the imagined case. On this view, brain transplant thought experiments do not support psychological continuity theories but simply track intuitions that have no bearing on our concept of personal identity.

Simon Beck (2014) has recently argued that discounting brain transplant thought experiments that seemingly work in favour of psychological continuity views comes with 'two costly mistakes'. He thinks that (1) when evaluating these imagined cases, philosophers are mistakenly trying to figure out the intuitions that they think people inhabiting such a possible world ought to have, instead of pondering their own intuitions. Beck further argues that (2) brain transplant thought experiments cannot confirm any given theory of personal identity but rather they can rule out theories. So, we should not see them as being able to yield positive results but merely as being able to falsify theories. Along these lines, Beck claims that even if brain transplant thought experiments do not provide direct support for psychological continuity theories, they nevertheless render competing views implausible; and by so doing they present 'indirect' support for psychological continuity views. He aims to show this by applying his 'two costly mistakes' to Marya Schechtman's 'Person Life View' which is a promising alternative to psychology continuity theories.

In what follows, I argue on conceptual grounds and in due consideration of recent empirical evidence that Beck has things back to front, both in his general claims in favour of brain transplant thought experiments as indirect support for psychological continuity theories and in particular in his attack on the 'Person Life View'. I attempt to demonstrate this by shedding some light on the social ontology of personhood, arguing that since our concept of personhood is shaped and informed by contingent de facto norms and structures of the natural world, and as such heavily normatively laden, the conceptual genesis of personhood must be taken into account and thought experiments need to be constructed as realistically as possible in order to trigger reliable intuitions. Furthermore, an empirically informed look at brain transplant thought experiments, considering an 'Embodied Cognition' framework, reveals that Beck's arguments fall short for supporting psychological continuity theories—to the contrary, such an analysis rather suggests an advantage of the 'Person Life View'.

'Two costly mistakes' unveiled

Beck takes brain transplant thought experiments to indirectly support psychological continuity theories—a view that he endorses on positive grounds elsewhere (Beck 2011). The support that comes from such hypotheticals is 'indirect', because he thinks that thought experiments can never confirm a theory but only rule out theories. But, if such brain transplant thought experiments refute alternative views, then they leave us with psychological continuity as the most plausible contender,

or so Beck claims. It should be noted that Beck, at least implicitly, advocates a particular form of psychological continuity theory; one that—although insisting on the continuity of a person's distinct psychology as the necessary and sufficient condition for personal identity—is based on the persistence of an integral part of the human organism, namely the brain (or more precisely the cerebrum) as the supposed seat of psychological continuity. So, the view Beck aims to defend indirectly is not some 'any cause' (Parfit 1984) psychological continuity theory that allows for a detachment of mental states from brain states (at least in principle), but rather what can be called a 'brain cause' view. On this view, it is a person's distinct psychology that matters for personal identity over time, and this is realised by the brain's continuous instantiation of that psychology. This goes to show that Beck is not exclusively concerned with mere metaphysical issues taking place in some possible world, but with a discussion of personal identity somewhat in touch with empirical considerations. Now, given the empirical fact that the brain cannot simply be disconnected from the body, the human organism in its entirety must play at least a major derivative role in constituting personal identity; that is, if Beck's 'brain cause' view is intended to hold up to empirical scrutiny. Although, Beck presents the case for his view slightly differently: personal identity is secured through psychological continuity which is instantiated in a person's cerebrum—so the person goes where the cerebrum goes. Surely, Beck's view is not freed from empirical constraints; otherwise it seems odd to explicitly place such importance on the cerebrum as implementing and maintaining psychological continuity.

Given Beck's insistence on the involvement of the brain, it is fair to assume that he is not merely concerned with metaphysical speculation, but does worry about how things are in the world. In this light, one would think that he ought to welcome Kathleen Wilkes's (1988) methodological concerns about counterfactual puzzle cases. Wilkes suggests that any thought experiment envisaged to reveal ontological features of personal identity would need a mass of information before the phenomenon could be 'established'. She rightly points to the fact that there is a crucial difference between linguistic concerns about how our concept of a person would be used in a world in which these counterfactuals were actually happening, and ontological features of that concept in the natural world. Drawing conclusions from investigating how our concept compares to alleged linguistic conventions in a possible world to ontological features of the natural world seems contentious. Nevertheless, Beck takes issue with what he considers to be two wrong assumptions about criticising thought experiments that he believes Wilkes and Schechtman are guilty of. He does so with the aim of showing that when these two wrong assumptions are straightened out, brain transplant thought experiments do indirectly support his type of psychological continuity view. I will discuss each of Beck's points in turn.

'Mistaking us for them'

Beck agrees with Wilkes that if counterfactual personal identity thought experiments are consulted with the aim of finding out what 'we' would say if we were to live in that fictional world, than we are doomed to fail. Beck, however, stipulates that the demand of knowing how we would respond—in terms of linguistic conventions and ontological convictions—if we were to inhabit such a possible world as a means to investigate whether, and if so, how 'our' concept of personal identity is plausible in the absence of that counterfactual phenomenon, is too hard a requirement to meet. According to Beck, Wilkes's dissatisfaction with a lack of sufficient circumstantial detail provided in thought experiments is then misplaced, because the demand itself is misplaced. Here comes the crucial disclaimer in Beck's argument requiring a longer quote in which he discusses Wilkes's complaints about splitting thought experiments—these are, though different from brain transplants, similar in the role they play as test cases for theories of personal identity. Important to emphasise is that in Parfit's (1984) well-established version of them, splitting scenarios are inspired by actual events and Parfit goes to great lengths to discuss empirical considerations.

Brain bisection comes along with the appearance of two separate streams of consciousness, triggered by disconnecting the brain's two hemispheres due to cutting the corpus callosum (a neurosurgical technique that was used to treat epilepsy). Extrapolated from this observation, splitting thought experiments ask us to imagine what would happen if the two hemispheres, each maintaining the

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original person's distinct psychology, were transplanted into the empty skulls of two other human bodies. Both of the resulting persons, we are told, would continue living their lives believing that they are identical to the original person. Here goes Beck's interpretation of splitting, explaining why he thinks that we are mistaken to assume that we need to know more about how a society in which splitting occurs would function in order to test our concept of personal identity.

> What we are after is our concept, not the concept that people in the society would have. We test the limits of our concept by whether or not we are able to apply it when certain of the conditions in which it is usually applied change, but that does not mean that we are constrained in any way by how those in an imagined scenario apply their terms. Adding details to the scenario about how those in it use their terms might make it easier for someone who claims to be having trouble imagining the scenario to get around their difficulty—that is what Williams and Shoemaker see themselves as doing—but it is not a crucial factor in whether or not the implicit conditions underlying our application of a concept are met. Why, for instance, is it necessarily a problem for the possibility of a person splitting into two if universities and marriage would need to be handled differently if everyone were to do so? How does a university's student population doubling in size if all of its current students go in for a split mean that we cannot understand the idea of one person doing so under very special circumstances? Wilkes says that these things are 'obviously and essentially' relevant to any splitting thought-experiment. But not only are they not obviously relevant, they are not relevant at all to one that is carefully and simply enough described (Beck 2014: pp. 192–193).

Beck is explicit in pointing out that what he is after is 'our' concept of a person. Thought experiments of this sort must then be seen against the backdrop of the limits to which our concept is applicable in a world so much unlike ours that some have a hard time even imaging what it would be like to inhabit such a world. What is at issue is whether we can apply our concept of a person or whether it reaches its limits in such cases. Now, the crucial mistake in Beck's reasoning is this: if we are after 'our' concept of a person, then the genesis of this concept cannot be altogether ignored. This is so because the contingent de facto norms and structures that shape and inform the concept of personhood, and the practical implications that come along with it, cannot simply be disregarded. However, quite frankly, the conceptual genesis of personhood would be vastly different in a possible world very much unlike ours in which splitting is daily fare; thus, the defining features of personhood would be different as well. Comparing the way in which a person so defined figures in the world we live in, with a possible world in which we have reason to believe that the concept of a person would be shaped and informed in accordance with the workings of that world merely from a logical point of view, is to compare apples and oranges. Therefore, as Wilkes rightly says, such a way of using thought experiments is of little value to support or refute our concept of personhood. But, 'our' concept of personhood is what Beck is after. Yet, he is unwilling to concede that our intuitions triggered by these hypotheticals might simply not be applicable to the way in which personhood serves in ontological debates and normative disputes in the natural world. This problem becomes particularly apparent when Beck asks: 'Why, for instance, is it necessarily a problem for the possibility of a person splitting into two if universities and marriage would need to be handled differently if everyone were to do so?' (Beck 2014: p. 193) Asking this question reveals the wrong assumption that Beck applies; namely the conviction that the concept of a person exists in a vacuum based solely on some intrinsic person-constitutive features, and taking this to assume that personhood would not be a different concept if it were shaped by vastly unlike circumstances. This calls into question the idea of a purely metaphysical view of persons. It is unclear whether such a metaphysical view that posits some intrinsic person-constitutive features could hold across all possible worlds. This seems particularly problematic since persons are essentially relational beings, such that their conditions for individuation and identification cannot be given independently of how they stand in relation to others—of course, there is an ongoing dispute about this view as well. If the social ontology of personhood was vastly different in a possible world, then there is little to gain for an investigation of 'our' concept of a person. And so, universities and marriages and all the other socially constructed observer-relative facts (Searle 2010) work in a specific way precisely because

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they are so closely tied to our social ontological concept of personhood. We cannot treat these observer-relative facts as though they were observer-independent facts holding across all possible worlds. Marriages and universities in a world in which splitting is commonplace would potentially be unlike ours in a great many different ways because the underlying concept of a person would be significantly different. Perhaps in such a world your split sister was also married to your husband and your split brother was also allowed to take your upcoming metaphysics exam because you were seen as one and the same person. The reason, then, for why we need to hear more about the practices that people in such a possible world would have is not to know what 'they' would think, but because we cannot figure out what 'we' think without information about the social functionality of the transformed beings. So, Beck's claim that we are making a 'mistake' to think we do need to know about the social context in which these transformations take place is really part of a conditional—assuming that nothing essential to personal identity can either include or depend upon these social factors. But this is up for debate and, as I have suggested, there are reasons to think that these social and relational elements can indeed be essential. Beck's argument works only if a certain picture of personal identity is assumed—the picture that he wants to proof; namely the view that only intrinsic features matter for personhood and personal identity, and thus it is circular.

Furthermore, this shows why such thought experiments are unable to trigger reliable intuitions about 'our' concept of a person. If the aim is to discover some hidden ontological features about our concept of personhood by applying it to counterfactual thought experiments of this sort, then Wilkes is right to claim that this has its limits in that conclusions drawn from such scenarios might no longer reveal any illuminating features of our concept of personhood. It is, then, a mistake to posit, as Beck does, that the implicit conditions underlying our application of the concept of personhood can be ignored when evaluating counterfactual thought experiments like the splitting case.

This, however, is not a plea for dismissing thought experiments in questions of personal identity altogether. But it calls for a careful construction of hypotheticals paying close attention to the way in which de facto norms and structures of the natural world inform the concept of a person, including principled (not merely technical) empirical limitations. If these conditions are met, thought experiments might very well be able to trigger reliable intuitions that can help to reveal ontological features of our concept of personal identity.

'Mistaking thought-experiments as confirmers'

Sure enough, Beck concedes, brain transplant thought experiments do not prove his psychological continuity view to be correct. Then again, Beck thinks that this is not something we should have expected them to do in the first place. It goes without saying that this is in contrast to the vast majority of philosophers who have deployed such hypotheticals as confirming their views—or at least rendering positive evidence in favour of a given theory. What brain transplant thought experiments are in a position to do, Beck says, is to provide indirect support for a given view by showing that opposing theories are in trouble. In other words, Beck claims that we should not see thought experiments as confirming a particular theory. And it is in part this mistake, he thinks, that has led philosophers like Wilkes to believe that there is a lack of sufficient detail in order to make such hypotheticals work. Beck, however, remains short of providing compelling reasons for why this is so. He merely asserts that performing the task of refuting a particular view of personal identity (rather than confirming) does not call for such painstaking requirements of detail. Here is how Beck makes his case:

> [T]he point of a thought-experiment of the kind that draws out intuitive responses is to illustrate that we don't *have* to see things in the way a particular theory says we do. It is not, or should not be, to show that we *must* see things in the way a particular theory suggests. Establishing that would be a much more difficult task, with perhaps the difficulties Wilkes foresees. But performing the task of offering a counter-example—as a refuter—to a claim of necessity has no such onerous requirements. It need only present conditions, as minimal as you like in which we have a case in which we can apply a concept in the way the theory in question implies we can't (Beck 2014: p. 194, italics in original).

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If we are able to construct a scenario that seemingly offers support for an application of personhood that is at odds with what a certain theory requires, this, then, is enough for Beck to render said theory implausible. This is so, he thinks, because the necessity claim of that theory has then been disproven. Beck's mistaken assumption is that theories of personal identity are ipso facto committed to making necessity claims, because he thinks that such views only depend on intrinsic features and must hold across all possible worlds. However, as I suggested, this way of seeing things is up for debate and thus cannot be invoked as a decisive way of refuting theories of personal identity, for not all of them are committed to making necessity claims. Not only is Beck's view a highly idiosyncratic way of seeing the role of thought experiments in the personal identity debate, but also, and more to the point, if only these minimal requirements were to be fulfilled, one wonders why not stay away from applying them all together? After all, for virtually any theory of personal identity, numerous fanciful and ingenious thought experiments have been invented that uncovered problems or odd implications of that theory. This, however, has mostly been done in order to support a rival view by showing that this view does not suffer from problems in the scenario. The rather low hanging fruit of merely debunking another theory via a thought experiment serves, if at all, only the purpose of getting rid of thought experiments as crucial parts of arguments on personal identity altogether. Since there are no limits to the imagination of possible worlds in which splitting, fusion, teletransportation and all the rest of it occur, I am unaware of any theory that has not been haunted by dubious counter-examples. Of course, one is free to conclude from here that we simply have not discovered the ultimate theory of personal identity yet—a theory that is able to deal with every possible counterfactual thought experiment, no matter how far-fetched. Or we can think of requirements along the lines suggested above to restrict thought experiments in a way that allows for a more realistic evaluation of 'our' concept of a person.

In any case, it does not help Beck's argument to assert that there is reason to stick to the brain transplant thought experiment by pointing to the seemingly modest role it is supposed to play, merely serving to rule out opponents of the psychological continuity theory he favours. Nonetheless, Beck insists:

> But as I have argued, we are perfectly capable of applying our concepts to circumstances in which the characters involved apply theirs differently. So whether or not their view is plausible to us does not prevent us from applying our concept to their situation. And whether or not we would actually be like them when things changed is a sociological or psychological issue and not the conceptual one that we face in this debate (Beck 2014: p. 197).

In addition to the objection based on the conceptual genesis of personhood and its social ontology, one might wonder what, then, is the point at issue? It remains to be shown in what way an account of personal identity that relies on other theories being refuted by counterfactuals—thought experiments in which an apparently different concept of personhood is at stake—could be informative or illuminative to the concept as we have it.

On a less charitable interpretation, the role of thought experiments seen as mere refuters might even be self-defeating. 'But, as I argued, thought-experiments can do very little by way of confirming a theory. That you can tell a plausible story that is consistent with a theory does little or nothing for it other than illustrate it' (Beck 2014: p. 197). By the same token, the fact that you can tell a story that is inconsistent with a certain theory does little or nothing in support of a different theory, unless the different theory itself is better able to deal with that thought experiment. But then the thought experiment serves to confirm the theory, and Beck does not want to have it that way. The burden of proof may very well lie on the defender of the refuter role of thought experiments. If a thought experiment cannot ipso facto support any given view, as Beck says, then how should it nevertheless be able to render another view significantly (let alone decisively) implausible? At most, this point calls for restricting thought experiments to more realistic constraints, but not for pushing a psychological continuity theory on the basis of a particular thought experiment offering 'indirect' support by ruling out other views. It remains to be shown why we are supposed to buy the assertion that the brain transplant case does very little for any given theory but a lot against all theories other than the psychological continuity view.

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Correcting Beck's 'two costly mistakes' in support of the 'Person Life View'

Having asserted the 'two costly mistakes' that shall serve to undermine critics of the psychological continuity view's interpretation of brain transplant thought experiments, Beck sees himself in a position to be able to apply his two conditions to a particular rival view. He does so in order to show how Schechtman's critique of the psychological continuity view's interpretation of the transplant case fails. Beck claims that not only does the standard brain transplant case indirectly support psychological continuity theories of the sort he endorses, but he also presents an altered version of the thought experiment that is supposed to render Schechtman's 'Person Life View' implausible. I now turn to argue why both of Beck's claims are mistaken.

Beck's target is Schechtman's 'Person Life View', holding that persons are defined in terms of the characteristic lives they lead, and seen as unified loci of practical interaction. 'The duration of a single person,' she writes, 'is determined by the duration of a single person life' (Schechtman 2014: p. 110). A person life is made up of three interrelated elements: 'individual capacities, typical activities and interactions, and a social infrastructure' (Schechtman 2014: p. 115). The identity conditions of persons are not so much set by metaphysical considerations, but by the typical structure of person lives. This structure is based on the interplay between psychological, biological and social features. Crucial in Schechtman's view is that instead of assuming one of these features as the relation that constitutes personal identity, their interactions with one another is what constitutes a person's persistence over time. On the standard approach, the fact that biological, psychological and social considerations of a person's life are intertwined is seen as a complication which makes it difficult to determine which relation constitutes personal identity. Here, an advantage of Schechtman's view is that the interplay between these features is the true nature of personal identity, allowing persons to enter what she calls the 'person space'. Schechtman thinks that psychological continuity theories fail to capture all of the practical importance associated with personhood, since '[s]ome of our person-related practices and concerns apply to individuals who are not Lockean persons (e.g. infants and the demented), and the relation which constitutes a unit of these practices and concerns cannot be one that requires the cognitive machinery necessary for Lockean personhood' (Schechtman 2014: p. 81). Accordingly, infants and those with dementia are persons at particular life stages; they are persons without some of the typical attributes of adult persons, but they are entirely persons. Just as someone with heart disease is still a human animal, only without some of a human animal's typical functionality, so a person with cognitive deficits is, on her view, still a person. A person life, then, continues as long as a particular place in person space is occupied, which happens before, and independent of, higher-order cognitive features that are usually taken as necessary conditions for psychological continuity.

Beck now constructs a version of the brain transplant thought experiment intended to raise serious problems for the 'Person Life View':

> Consider a society in which a cerebrum transplant operation occurs. The cerebrum of a person, with their fully developed psychology is transplanted into another body, leaving her original body as a living organism with whatever support it requires to function in a minimal way as before. This society sees this organism as the original person and treats her accordingly, just as they treat someone who has lost her capacities and is in very advanced dementia. They ignore the troublesome individual who keeps turning up at the hospital entreating them to take notice of her. They are firm in the belief that they are acting correctly and eventually resort to a restraining order against this annoyance. According to the PLV there is no problem, since there is only one individual who takes up the original person life and who is the subject of the required social continuity and has one of the other two continuities, the biological one (Beck 2014: p. 198).

Beck takes this thought experiment to show that we must all agree that there is something wrong with the 'Person Life View', given its seemingly savage implications in this scenario. After all, everyone ought to see that the person who received the cerebrum really is the original person and not the organism that is left behind in the hospital and falsely equipped with a place in the person space that truly belongs to the new person, the one that now has the hospital inhabitant's cerebrum. Apart

from not treating Schechtman's view with much courtesy, Beck asks: 'If there is something relevant and deeply impossible that is being glossed over, that would need to be shown, and I can't see what it could be' (Beck 2014: p. 198). I now turn to argue that there actually is something relevant and deeply impossible being glossed over in the way Beck attempts to make this thought experiment work. The seeming force against the 'Person Life View' stems from a conceptual implausibility and an empirical impossibility.

Covert dualism and embodied cognition

The problems with Beck's brain transplant case begin early on. The cerebrum in his scenario is assumed to have many of the features that were traditionally attributed to the soul—serving as a discrete locus of a person's psychological life within the human body. What is presupposed here is a conception of the psychological subject as a discrete and unified object located within the brain and as such (at least in principle) removable from the rest of the body. However, taking the empirical fact that the brain plays a pivotal role in maintaining a person's psychology and conclude from there that the cerebrum is the actual 'location' of the mind involves a serious mistake. In her earlier work Schechtman (1997) called this the 'Brain-body Problem' and presented an alternative 'Distributed View' of the mind which coheres well with a widely accepted theory in cognitive science, known as 'Embodied Cognition' (Clark 1997, 1999; Lakoff and Johnson 1999; Shapiro 2014). Roughly, theories of embodied cognition hold that a person's mind is deeply dependent upon their bodily features. That is, aspects of a person's body beyond the brain play a significant causal or physically constitutive role in cognitive processing (Wilson and Foglia 2011). Along these lines, Schechtman states that the 'Distributed View'

> conceives of the brain's role in producing mental phenomena as analogous to the role of the heart in circulation, or the lungs in respiration. The heart is, without a doubt, the center of the circulatory system, but it is not the place where circulation is located nor do we say that the lungs are the location of respiration. Circulation and respiration are distributed systems of the entire organism, with a major organ at their core (1997: p. 152).

In just the same way, the brain does not by itself sustain a person's distinct psychology. Rather, the brain is in constant interaction with the rest of the body, and the physiological understanding of mental features almost inevitably involves not only an understanding of what is happening in the brain, but an understanding of the entire feedback loop between brain and peripheral systems. So, the close interdependency between brain and body in sustaining one's distinct psychology makes it far from clear how the cerebrum transplant thought experiment envisaged by Beck would actually turn out, if it were at all possible. There are widely accepted empirical reasons to believe that a clear-cut distinction between brain and body is fallible.

What seems to be at play here, is a reliance on different presuppositions of the relation between brain and body, constituting one's distinct psychology. Beck assumes that personal identity is not necessarily predicated upon brain-body relations but merely upon the cerebrum as the integral part of the body that is in charge of one's distinct psychology. By contrast, on Schechtman's view, the closely intertwined relation between brain and body (ultimately involving the social environment) is crucial in preserving personal identity and defines what makes someone the person she is.

Conceptually, Beck's mistake stems from the impulse to impose conceptions of the mind formed within the context of dualism onto a materialist ontology. Presupposing the cerebrum as the material equivalent to the soul—a single place of one's distinct psychology. What empirical evidence actually reveals, however, is the very live possibility that there is no material object that plays this role. From a neurobiological perspective brain and body are intimately related through neuronal, hormonal, immunological, nervous, etc. functions: hormones, antibodies and neuronal impulses are produced in the body and affect brain functions and vice versa. Bodily features such as weight and height, and sensorimotor as well as somatosensory functions such as vision and processing of auditory and tactile stimuli shape the way one navigates the world, which in turn has a significant impact on one's distinct psychology. Furthermore, there is a strong 'brain-body historicity' based on immunological mechanisms observed in brain tissue transplantations. The immune system distinguishes the body's

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own tissue from foreign tissue only on the basis of the quality of the inserted material, whereas the quantity of inserted material is largely irrelevant. Even if the quantity of foreign inserted material is small, the immune system may still reject it. Thus, from an immunological perspective, there appear to be no principled differences between brain tissue transplantations and entire brain transplantations: both are subject to the close interdependence between brain and body (Munzer 1994). We cannot expect, therefore, to transplant a cerebrum into some other person's empty skull assuming that this would result in the original person's distinct psychology having been transplanted.

Here are two additional conceptual points that are contentious in Beck's version of the brain transplant thought experiment. (1) Something like the scenario Beck describes is unlikely to happen—unlikely to the point of near impossibility. Because our interactions with each other depend on psychological features, we would be no more likely to act as he says than to treat someone who received a blood transfusion as a new person. But, since we cannot decisively rule out that a successful cerebrum transplant might happen, let us grant, for argument's sake, that it would happen. (2) But even if it did happen, one could argue that it is not obvious that those people would be wrong in claiming that the original person would be the donor and not the recipient. What we would have discovered is not that that is how people in this other world think of things, but rather that that is how 'we' think of things. Take an example: you might say, 'If I win the lottery I would quit my job in an instant' and then find out, when you do win the lottery that you actually do not want to quit. Similarly, we might say that the recipient of the cerebrum would surely be the same person, but if the experiment were performed it might turn out that we actually feel differently. In fact, animalists already feel differently, insisting that in a cerebrum transplant the person stays with the body.

In sum, it seems clear that Beck and Schechtman do not share the same presuppositions when it comes to the cerebrum transplant thought experiment that Beck takes to cause trouble for the 'Person Life View'. However, as has been shown, Beck's presuppositions rest upon both conceptual and empirical mistakes. And so, since Beck's thought experiment is deeply at odds with how things really are, it can safely be discounted when one is sincere about being after 'our' concept of a person. At best, Beck's cerebrum transplant case can serve to push a psychological continuity theory that is covertly based on dualistic assumptions, positing some intrinsic person-constitutive features that are nowhere to be found in the natural world. But since Beck insists on the fundamental role of the brain for personal identity, suggesting that he does care about how things actually are, it seems unlikely that he would want to go down that road.

Concluding remarks

My aim was to show that Beck's attempt to save the support that brain transplant thought experiments supposedly yield for psychological continuity theories of personal identity fails. I have argued that the conceptual genesis of personhood based on its social ontology suggests that psychological continuity theories can neither be rescued by asserting that we ought to trust our own intuitions instead of pondering the alleged intuitions of people inhabiting a possible world nor by pointing to a more restrictive role of thought experiments serving as refuters rather than confirmers of a theory.

Looking at Beck's version of the brain transplant thought experiment from an empirically informed perspective has revealed a covert dualism present in his interpretation of this scenario—assuming that the cerebrum is the seat of the mind. If this misconception is dropped, and instead the well-established 'Embodied Cognition' framework is given serious consideration, Schechtman's 'Person Life View' appears to be a far more plausible theory of personal identity.

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