Received: 12 October 2023 | Revised: 2 May 2024 | Accepted: 29 May 2024

DOI: 10.1111/phc3.13000

ARTICLE

WILEY

Transformative Experience

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Funding information
Swiss National Science Foundation, Grant/Award Number: 186151

Abstract

Since its publication in 2014, L. A. Paul's book *Transformative Experience* has sparked many discussions in philosophy and beyond. Her main argument is that experiences we have not had before can transform us epistemically (i.e., we learn something we could not learn without the experience) and personally (i.e., our point of view changes radically). This has implications for decision theory in particular, but also for other fields. The present paper provides an overview of how transformative experiences are thought to challenge rational choice and how authors have responded to this challenge (with a focus on the epistemic transformation). Furthermore, it also shows how the concept of transformative experience has been fruitful beyond the decision-theoretical context, with a particular focus on illness, medical treatment, and the ethical issues involved. Finally, the paper presents open questions in the literature on transformative experiences.

1 | INTRODUCTION

Can we rationally and authentically decide whether to become a parent? This is one of the prominent questions that underlies L. A. Paul's (2014) highly influential book *Transformative Experience*. Her answer is rather pessimistic. According to Paul, becoming a parent comes with an experience that transforms us in one or two ways. First, there is an epistemic transformation, because by becoming a parent we learn first-hand what it is like to become a parent. Second, there is probably also a personal transformation since becoming a parent likely changes our very preferences and therefore who we are as a person. The (epistemically) transformative nature of becoming a parent

prevents us from anticipating its subjective value which is why we cannot assess whether becoming a parent or not becoming a parent is the better option to choose. Rational decision-making runs into a dead end.

Many authors have responded to the challenge that epistemically and/or personally transformative experiences (both together are simply called transformative experiences) pose to rational decision-making according to Paul (e.g., Arvan, 2015; Bykvist & Stefánsson, 2017; J. Campbell, 2015; Cath, 2019; Chang, 2015; Dougherty et al., 2015; Isaacs, 2020; Kauppinen, 2015; Khan, 2021; Kind, 2020; Mathony & Messerli, 2022; McKinnon, 2015; Pettigrew, 2015, 2016, 2019; Reuter & Messerli, 2018; Sharadin, 2015; Villiger, 2021, 2022, 2023). After a detailed outline of Paul's general argument and its underlying assumptions (Section 2), the present article provides an overview of these responses (Section 3), shows how the concept of transformative experience has been fruitful beyond its original decision-theoretical context (Section 4), and points to open questions (Section 5). In doing so, the article focuses primarily on the epistemic aspects of transformative experiences. These aspects have also been the subject of the most discussion both in Paul's book and in the literature that has arisen from it. It should be noted, however, that a great deal of work, not covered in this article, has also been done on the more general issue of personally transformative choice, both by Paul (e.g., Das & Paul, 2020; Paul, 2015a, 2020a) and by others (e.g., Bykvist, 2006; Pettigrew, 2019; Strohmaier & Messerli, 2024; Ullmann-Margalit, 2006).

2 | PAUL'S VALUE IGNORANCE OBJECTION AND ITS UNDERLYING ASSUMPTIONS

According to Paul (2014), rational decision-making involves the following procedure which ordinary reasoners perform in an approximate manner.[1] First, an agent takes one of her available options and assesses the value of each of its possible outcomes by means of her value function. Second, the agent assesses how probable each of these outcomes is by means of her credence function. Third, the agent multiplies each outcome's value with the outcome's probability and adds up all products. This leads to the option's expected value. Fourth, the agent does the same with every other option available and chooses (one of) the option(s) with highest expected value.

Given that (at least) one of the option's outcomes involves an epistemically transformative experience, the first of these four steps can no longer be executed. Here is why. Paul (2015a) argues that part of an outcome's value stems from the ways we experience ourselves in that outcome. She calls this experientially grounded value, which includes the assessment of the nature of what it is like to *live* the outcome, the subjective value.[2] Next, Paul says that in order to assess an outcome's subjective value, we have to mentally simulate what it would be like if the outcome were to occur. But according to her, this is not possible if the outcome is epistemically transformative: we cannot mentally simulate what it would be like to experience an outcome if we have not experienced that kind of outcome before. In other words, the outcome's transformative character makes its subjective value epistemically inaccessible, and it only gets accessible through experience (which is the very reason why the experience is epistemically transformative). As we cannot calculate the transformative outcome's subjective value, we do neither know its overall value, nor the option's value. Consequently, we cannot know which of the available options maximize(s) expected value and should therefore be chosen. Ultimately, the situation becomes even more complicated from a decision-theoretical perspective if a potential outcome is not only epistemically but also personally transformative. In such a case, both the outcome's subjective and non-subjective value can become inaccessible since we do not know how the personal transformation will change our preferences. In addition, we have to decide on which preferences we want to base our decision: past, present, and/or transformed preferences, while we are likely to be ignorant of the latter.

At this point, it is important to mention that the general notion of a transformative experience and the epistemic challenge it poses to decision theory is not completely new. First, several moral philosophers have referred to the effects of epistemically and personally transformative experiences before Paul's book (e.g., Rosati, 1995, p. 318; Sidgwick, 1907, Ch. 3, Section 7; Sobel, 1994, p. 797). For example, Sobel (1994) refers to the transformative power of revelatory experiences when he writes: "Revelatory experiences enliven our appreciation

of facts and descriptions such that although we were vividly aware of the facts and descriptions of the case, we had previously been dead to the import that we now find in them." (p. 797) Second, it has been argued that the epistemic challenge posed by transformative experiences can be seen as an instance of a more general problem, namely, how to act rationally under *awareness growth* (Steele & Stefánsson, 2022). Awareness growth means an expansion of the agent's possible outcome space and has been discussed in decision theroy and economics for decades (for a recent paper, see, e.g., Vierø, 2021).[3] But while it is important to acknowledge these predecessors, it was Paul's book that first connected and developed the deep relationships between epistemic and personal transformation (and further made the connection with philosophy of mind-type cases like Jackson's Mary and Nagel's bat), defining the concept of transformative experience as involving both, and additionally suggested that there was a unique decision puzzle that resulted. Ultimately, it was not until Paul's book that the notion and challenge of transformative experiences became such a widely discussed topic in analytic philosophy and beyond. So, let us now analyze more closely the basis of her challenge.

The challenge of transformative experiences posed by Paul grounds on an understanding of rational decision-making that is characterized by three basic assumptions (see Figure 1). The first basic assumption involves her understanding of decision theory, which is mostly a deliberative realist one (cf. Pettigrew, 2015, 2020). Let's unfold what this understanding involves. Psychological realism says that utility and credence are real mental states (Buchak, 2013). As a consequence, we might be able to access the facts about our own utility function by direct introspection or, maybe, by the method of mental simulation of outcomes. A deliberative understanding of decision theory does not only govern which option is chosen but also the deliberation that led to choosing that option (Pettigrew, 2020).[4]

What are the consequences for the challenge that transformative experiences pose to decision theory according to Paul if we move away from a deliberative realist understanding of decision theory? (1) If we assume that utilities and credences are not real mental states, there is no way to calculate options' expected value and therefore also no way to ground our preference ordering on such calculations. Instead, our behavior is simply the product of our preferences, as it is for example assumed in the revealed preference theory commonly used by economists (Choi et al., 2014; Varian, 1982). Here, rational choice and, in this way, rational preferences are defined by the axioms of revealed preference theory (Kreps, 1988). Thus, the decision to become a parent is rational as long as the

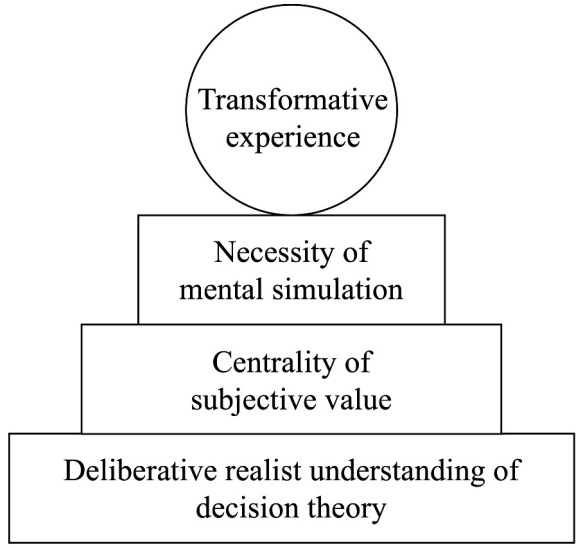

FIGURE 1 The three basic assumptions of Paul's understanding of rational decision-making, creating the challenge of transformative experience.

agent's preferences satisfy the axioms of revealed preference theory. (2) A mere evaluative understanding of decision theory is only concerned about whether the choices we make maximize expected utility: even if you chose to become a parent for no good reason (e.g., if it rains on my next birthday, I start trying to become a parent) but it maximized expected utility, your choice would still be rational. Therefore, Paul needs a deliberative account because transformative experiences (mainly) pose a problem in deliberation and not evaluation.[5] To summarize, Paul's proposed inaccessibility of transformative options' value primarily poses a problem in the case of a deliberative realist understanding of decision theory.

Paul's second basic assumption defining her understanding of rational decision-making refers to the importance of subjective value. As the outline of her value ignorance objection at the beginning of this section has shown, an outcome's transformative character does only veil its subjective value. In contrast, the outcome's non-subjective value can be assessed (although this may not always be true, as personal transformations may also be able to affect some non-subjective values). Paul (2014, p. 25) acknowledges that such non-subjective values, as for example objective moral values, can be important as well and may even be decisive in some decisions. Still, in her analysis, she concentrates on the subjective value and sets non-subjective values aside since they are not significant in the transformative choices she is interested in (so-called first-personal choices). Paul (2015c, p. 165) justifies the insufficiency of non-subjective values for rational decision-making with the following argument: even if the value of an outcome's non-phenomenological features can be assessed, its unknown phenomenological value might be so positive or negative that its known non-phenomenological value would no longer be decisive. Additionally, regarding the question of why knowing an outcome's (expected) subjective value is a necessary condition for rational decision-making, Paul (2014) writes: "If, as a member of an affluent, contemporary Western culture, you dispense with subjective deliberation and subjective values in today's world, you reject a central tenet of that culture's ordinary way of thinking about the choice." (p. 85) Thus, in line with this dominant cultural paradigm, Paul's understanding of rational decision-making implies that agents want to consider the subjective value of an option when choosing or rejecting it (at least in the kind of decision in which she is interested).

The third basic assumption of Paul (2014) involves how an outcome's subjective value has to be assessed, namely by means of mental simulation, and why this is the case. As she writes: "[Y]ou evaluate each possible act and its experiential outcomes by imagining or running a mental simulation of what it would be like [for you] … After you run each cognitive simulation, you assign each outcome a subjective value." (pp. 26–27) Paul prescribes this procedure because it results in a decision made from a first-personal perspective, which makes the decision authentic. Consequently, authenticity is essential to her understanding of practical reasoning, and abandoning it would be "unappealing in the extreme" (p. 112). In fact, even if the agent miraculously knew an outcome's subjective value without mentally simulating it, the resulting choice would still not be authentic.[6] Now, to mentally simulate an outcome, an agent needs experiential acquaintance with it, meaning that the agent must have experienced this kind of outcome before. This implies that mere second-hand information (e.g., testimony) about an outcome's phenomenological character must remain insufficient for mental simulation (unless testimony tells the agent that the outcome is similar to another outcome which she has experiential acquaintance of). To summarize, only by mentally simulating an outcome of which the agent has experiential acquaintance, she is able to infer its (expected) subjective value in a rational and authentic way.[7]

3 | RESPONSES TO PAUL'S CHALLENGE OF TRANSFORMATIVE EXPERIENCES

We start with Paul's (2014, pp. 113–120) own solution to the challenge that transformative experiences pose to rational choice: the revelatory account. The revelatory account holds that while we cannot rationally choose an option that involves a transformative experience due to its subjective value, we can do so due to its revelatory value. The revelatory value is the value of discovering how it is to live an outcome, regardless of whether the outcome turns out to be good or bad. Thus, the critical question in arriving at a rational transformative choice is not

whether an outcome maximizes expected (subjective) value, but whether one wants to discover what it would be like if the outcome were to occur.

Paul's revelatory account found little favor and has been criticized for three main reasons (e.g., Bykvist & Stefánsson, 2017; Callard, 2018; Kauppinen, 2015; Pettigrew, 2019). First, if, as Paul suggests, the subjective value may always override non-subjective values, then she must provide a reason why this is not also true in the case of the revelatory value. So far, no such reasons have been given. Second, it is unclear to which value category the revelatory value belongs. On the one hand, if it is experientially grounded, that is, it is the value of experiencing a new experience (regardless of whether the experience is good or bad), it falls under subjective value. Consequently, the revelatory value is inaccessible until the unfolding of the experience. On the other hand, if it is not experientially grounded, that is, it involves something like the value of broadening one's spectrum of experiences, it falls under non-subjective value. In this case, the revelatory value should be treated akin to other non-subjective values, which is why, if we follow Paul's argument, it cannot alone suffice for rational transformative decision-making. Third, the revelatory account is not helpful when deciding between transformative options.

Most of the responses to Paul, however, do not concern her revelatory account. Instead, they address the value ignorance objection itself, challenging (at least) one of its three basic assumptions. A common objection to the first basic assumption involves that a deliberative realist understanding of decision theory differs from standard decision theory (cf. Isaacs, 2020; Khan, 2021). In standard decision theory, agents exclusively base their decision on current preferences and do not need to access their utilities in order to determine these preferences. Accordingly, both epistemically and personally transformative experiences do not pose a problem to standard decision theory (Isaacs, 2020). Instead, transformative decisions are simply decisions involving (a lot of) uncertainty.

Regarding Paul's second basic assumption, several authors challenge the proposed centrality of an outcome's subjective value in the decisions Paul is interested in. They argue that in these decisions, the assessment of non-subjective values can be and often is sufficient for rational transformative decision-making, at least for agents who are not "texture fetishists" (e.g., Bykvist & Stefánsson, 2017; Chang, 2015; Khan, 2021; Reuter & Messerli, 2018).[8] Moreover, Kauppinen (2015) even declares an outcome's subjective value as generally irrelevant. He argues that the life choices which Paul is interested in should be based on "something objectively valuable that builds on our past efforts and experiences, and is consistent with our commitments" (p. 373). However, the idea that the subjective value can be irrelevant for rational transformative decision-making is not uncontested in the literature. For example, in Villiger (2023), I defend Paul's position that the unknown subjective value of an outcome can always swamp its assessable non-subjective value, thereby rejecting "the irrelevance hypothesis."

Paul's third basic assumption including the necessity of mental simulation has probably been criticized most. This criticism comes in four types. First, several authors presented (decision-theoretical) models where rational transformative decision-making becomes possible by use of testimony (Dougherty et al., 2015; Pettigrew, 2015, 2016, 2019; Sharadin, 2015; Villiger, 2023). At this, they argue that while the use of testimony may not lead to an authentic choice in Paul's sense, such testimony still tells agents something about their own utilities. So, the use of testimony does not per se contradict authentic choice. Ultimately, my own desire-based account aims to show that by reflecting on past and present desires and consulting testimony, a choice that is both rational and authentic in Paul's sense becomes possible (see Villiger, 2023).

Second, a meta-analytic study that examined agents' affective forecasting abilities shows that these abilities do not get worse when confronted with a transformative outcome compared to a familiar outcome (Mathony & Messerli, 2022). With reference to this finding, it becomes questionable why the supposed unreliability of mentally simulating a transformative experience should pose a particular challenge to rational decision-making.

Third, some authors argue that the human ability to (approximately) mentally simulate an experience is much more advanced than Paul presumes (e.g., Cath, 2019; Chang, 2015; Dougherty et al., 2015; Kind, 2020; Randell, 2023; Villiger, 2021). While these authors grant that some transformative experiences such as becoming a vampire or seeing red for the first time may be impossible to mentally simulate before undergoing them, this is not true for many other examples such as becoming a parent. This is because most transformative experiences still

share some similarities with familiar experiences, which enable us to mentally simulate them (at least in an approximative way) despite their transformative character.

Fourth, Paul's general understanding of what makes a choice authentic has been criticized (e.g., J. Campbell, 2015; Khan, 2021). More specifically, Campbell (2015) argues that her idea of authenticity is too much restricted on "knowing what it is like" and does not account for external or impersonal factors. Khan (2021) criticizes that Paul's definition of rational preferences and authentic preferences both presuppose imaginative acquaintance with potential outcomes.

Finally, beside these articles that question the challenge of transformative experiences posed by Paul, there is also a field of research that examines its rational implications. Thus, the three basic assumptions at the heart of the challenge of transformative experiences are not under scrutiny here. Instead, the question of interest is how to rationally approach life's transformative experiences given that these experiences cannot be anticipated. Arvan's (2015) answer is straightforward: you should cultivate resilience and accept that beyond a certain limit, life cannot be planned and must be taken as it comes. In Villiger (2022), I give a similar answer, but take a different route to get there: I analyze the impact that mentally simulating an outcome has on the actual experience of that outcome and demonstrate that positive/optimistic affective expectations tend to maximize subjective value. Accordingly, rational agents should form positive/optimistic affective expectations when being confronted with transformative experiences (which in turn is a source of resilience).

Overall, it must be emphasized that while many authors reject some aspects of Paul's value ignorance objection, they still acknowledge the relevance of the issues it raises, such as: What kinds of expectations about transformative experiences are reasonable/unreasonable? To what extent should agents be concerned about changes in their preferences in the future? Or what role should authenticity play in rational decision-making? As a result, Paul's work is the source of many new debates as well as the revival of old ones (cf. Isaacs, 2020). This is what makes it of such great value to the literature on decision theory.

4 | TRANSFORMATIVE EXPERIENCES BEYOND THE DECISION-THEORETICAL CONTEXT

The concept of transformative experience has proven relevant not only to decision theory, but also to other fields, as it provides a fruitful framework for understanding the richness of experience, transformational processes, and the implications of them (cf. Chan, 2023).[9] For example, it has already been applied in religious studies (e.g., Blanchard & Paul, 2021; Chan, 2019; De Cruz, 2018), education studies (e.g., Paul & Quiggin, 2020; Yacek, 2020; Yacek & Gary, 2020), psychology (e.g., Brouwer & Carhart-Harris, 2021; Forstmann et al., 2020; Yudkin et al., 2022), medical ethics (e.g., Egerton & Capitelli-McMahon, 2023; Hofmann, 2023; Jacobs, 2023; Letheby & Mattu, 2022; McQueen, 2017; Peterson et al., 2022; Walsh, 2020), and other areas of philosophy besides decision theory (e.g., Akhlaghi, 2023; Aumann, 2022; Carel et al., 2016; Carel & Kidd, 2020). Since it is not possible to cover all of these topics, I will focus on work that applies the concept of transformative experiences to illness, medical treatment, and the ethical issues involved. I do so because these are currently the most actively discussed topics in the transformative experience literature (next to issues connected to decision theory).

Carel and Kidd (2020) expand the concept of transformative experiences in several ways. For example, they differentiate between voluntary, non-voluntary, and involuntary transformative experiences. The first category includes transformative experiences that we directly choose, and is therefore primarily discussed in the decision-theoretic literature reviewed in the last section. In contrast, non-voluntary transformative experiences are not chosen, but simply occur, such as the onset of a genetic disease. Finally, involuntary transformative experiences are chosen indirectly, meaning that we chose the action that led to the transformative experience but without considering its transformative nature. Saving a child from an oncoming car, which then hits the rescuer and leaves her disabled is an example of an involuntary transformative experience. In fact, the authors argue that many, if not

most, transformative experiences are involuntary, forced upon us by the contingencies of life. Carel and Kidd further expand the concept of transformative experiences by adding the type of cumulative transformative experiences. In contrast to dramatic life-changing transformative experiences such as becoming a parent or having a severe accident, cumulative transformative experiences are a gradual process: each experience by itself is not transformative, but there cumulation is. This helps explain how people can grow and change over time without having to go through dramatic experiences.

The expanded concept of transformative experience provides an interesting perspective on illness. First, illness is often an epistemically and personally transformative experience (Carel et al., 2016). At this, the experience is almost always non-voluntary (i.e., it is not the result of our actions) or involuntary (i.e., we have not reflected on how our actions promote illness). There are a few cases where illness is a voluntary choice (e.g., some medical treatments can result in illness, see Hofmann, 2023). Second, the transformative nature of illness makes it epistemically inaccessible. This offers an explanation for why "[p]eople with serious health conditions, ranging from paraplegia to renal failure and cancer, consistently rank their wellbeing higher than healthy controls asked to imagine what living in a particular health state would be like and to provide a ranking for that state" (Carel et al., 2016, pp. 1152–1153).

At the same time, the transformative nature of illness raises ethical issues. To give two examples: (1) Advance directives that refer to degenerative diseases such as dementia may carry little moral weight (Walsh, 2020). This is because people do not know what the disease will be like and how it may change their preferences when they make such advance directives. Ultimately, the self that makes the advance directive and the self that is affected by it may not be identical (Paul, 2020b). It is argued that this possibility of personal transformation and the resulting preferences should be given moral weight in medical decision-making. (2) In the case of medical interventions that can or do result in (more serious) illness, patients may not be able to anticipate the consequences of the intervention due to its potentially transformative nature. In turn, having relevant beliefs about the consequences of a medical intervention is considered a prerequisite for informed consent (cf. Beauchamp, 2010). This raises the question of whether the potentially transformative nature of an intervention precludes informed consent (Egerton & Capitelli-McMahon, 2023; Hofmann, 2023).

Informed consent is questioned not only in interventions that may lead to (more serious) illness, but in transformative interventions more generally. Most prominently, psychedelic-assisted therapy is argued to have the potential to be both epistemically and personally transformative (Jacobs, 2023; Smith & Sisti, 2021). This is due to the ineffability of a psychedelic experience and its power to shift one's values and personality. There is currently a debate in medical ethics as to whether the transformative nature of psychedelic-assisted therapy allows for informed consent (at least as it is commonly understood) (cf. Villiger, 2024a, 2024b). Jacobs (2023) and Egerton and Capitelli-McMahon (2023) are skeptical. In contrast, Smith and Sisti (2021) argue that informed consent to psychedelic-assisted therapy is possible under an enhanced informed consent process. One reason for this is that informed consent is also not questioned in other transformative treatments, such as psychotherapy, which can also be personally transformative. However, this argument may not work properly because the two treatments differ in how fast the personal transformation takes place: while it is rather fast in psychedelic-assisted therapy, it is rather slow in psychotherapy. In fact, psychotherapy could be an example of a cumulative personally transformative experience. The different speed of transformation of the two treatments could be a reason why informed consent is possible for one but not for the other (cf. Jacobs, 2023). Overall, the analysis of these issues is crucial because psychedelic-assisted therapy is expected to be used more and more in the coming years (Ducharme, 2023; Goldhill, 2022).

To conclude, a great feature of the concept of transformative experience is that it can be applied to many different contexts, and authors from various fields have already done so. Specifically, the concept of transformative experience can provide a framework for explaining experiential and/or personality-changing phenomena. In turn, the newly gained perspective on these phenomena may reveal new implications, such as new ethical issues: for

example, there is an intense new debate in medical ethics about whether the epistemically and personally transformative nature of some medical treatments precludes informed consent to them.

5 | OPEN QUESTIONS

Despite the vast amount of literature that has drawn on transformative experiences since Paul's (2014) book, many questions and debates remain. (1) From a conceptional point of view, it is not yet clear at what point an experience becomes transformative; neither for epistemically transformative experiences nor for personally transformative experiences. Furthermore, the concept of authenticity in the transformative experience framework remains underexplored. For example, there is no satisfactory definition of what authentic decision-making requires (cf. Khan, 2021). (2) From a decision-theoretic point of view, it is still debated whether rational transformative decision-making is possible (even under Paul's three basic assumptions about rational choice). In addition, little thought has been given to the impact of transformative experiences on non-subjective values, as for example moral values (cf. May, 2023). Ultimately, it is unclear where to draw the line between choices in which non-subjective values can be swamped by subjective values and those in which they cannot. (3) From a medical ethics point of view, it is debated whether it is possible to give informed consent to transformative interventions. Moreover, it is unclear how much moral weight advance directives should have in the context of transformative diseases.

There are, of course, many more open questions than those outlined here. So, it is safe to assume that transformative experience will remain a highly active and illuminating topic in philosophy and beyond for years to come.

ACKNOWLEDGMENTS

I would like to thank Michael Messerli for his valuable comments on a previous version of this paper. This research was funded by the Swiss National Science Foundation grant number 186151.

Open access funding provided by Universitat Zurich.

CONFLICT OF INTEREST STATEMENT

The author reports no conflict of interest.

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ENDNOTES

[1] Regarding ordinary reasoners, Paul (2015c) writes: "Decisions made by ordinary people can be rational if they conform to the realistic standards set by a normative decision theory, where such standards make allowances for a certain amount of approximation, ignorance, uncertainty, and mistaken beliefs." (p. 151).

[2] In contrast, the non-subjective value of an outcome is derived from its non-experiential aspects.

[3] I thank an anonymous reviewer for pointing out these predecessors of the notion of transformative experiences.

[4] Within psychological realism, there is a further distinction between constructive realism and non-constructive realism. It involves "whether or not facts about an agent's utilities go beyond the facts about the agent's preferences between options" (Collins, 2015, p. 286). While non-constructive realists believe that they do, constructive realists believe that they do not. Collins (2015) argues that Paul follows non-constructive realism because only then does the unavailability of mental simulation block access to the agent's preferences (see also Khan, 2021). However, Paul (2015a) writes in her response to Collins that while she takes preferences to be psychologically real, she has no stronger claim about the metaphysics of utilities and is therefore not committed to non-constructive realism. She argues that "an agent facing an epistemically transformative experience lacks psychologically real, rationally assignable utilities concerning the

epistemically inaccessible outcomes because she cannot represent (or "see") the outcomes in the necessary way. If utilities are understood in constructive realist terms, then on this view, psychologically real preferences don't exist either. The agent lacks the capacity to grasp or entertain the natures of the relevant outcomes, and thus lacks the desires and beliefs needed for her to have psychologically real preferences." (p. 494) I thank an anonymous reviewer for providing clarification in this debate.

[5] It could be argued that if an agent chose between two transformative options, she cannot evaluate which option maximized expected value as the value of the non-chosen option remains unknown.

[6] There are exceptions such as swimming with sharks or getting your legs amputated without anesthesia. In the case of such "sharky outcomes" authentic choice does not require mental simulation (cf. T. Campbell & Mosquera, 2020).

[7] In her replies, Paul (2015a, 2015b) acknowledges that using testimony about the subjective value of an outcome to assess the (expected) subjective value it has for oneself can sometimes lead to a "rational" choice. But it does so at the cost of authenticity, which is generally unacceptable to Paul (cf. Pettigrew, 2020). There is, however, the exception of "reflective replacement," which allows a rational and authentic decision to be made in the absence of mental simulation (Paul, 2015b). Reflective replacement is legitimate when science can tell the agent with very high accuracy how positive or negative the subjective value of a transformative outcome will be. For instance, if science clearly indicates that taking a dangerous drug such as heroin will provide negative (long-term) subjective value, an agent can rationally and authentically refuse to take it, despite its transformative nature.

[8] Bykvist and Stefánsson (2017) define a texture fetishist as an agent for whom "the value of an outcome is to a very large extent determined by the texture of experiencing the outcome" (p. 131).

[9] As a side note, the term "transformative experience" is also used in work unrelated to Paul (for a conceptual analysis, see Chirico et al., 2022).

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How to cite this article: Villiger, D. (2024). Transformative experience. *Philosophy Compass*, e13000. https://doi.org/10.1111/phc3.13000