



What kinds of alternative possibilities are required of the folk concept(s) of choice?

Jason Shepard^{a, b, *}, Aneyn O'Grady^a

^a Emory University, Department of Psychology, United States

^b Emory University, Center for Ethics, Neuroethics Program, United States

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ABSTRACT

Our concept of choice is integral to the way we understand others and ourselves, especially when considering ourselves as free and responsible agents. Despite the importance of this concept, there has been little empirical work on it. In this paper we report four experiments that provide evidence for two concepts of choice—namely, a concept of choice that is operative in the phrase *having a choice* and another that is operative in the phrase *making a choice*. The experiments indicate that the two concepts of choice can be differentiated from each other on the basis of the kind of alternatives to which each is sensitive. The results indicate that the folk concept of choice is more nuanced than has been assumed. This new, empirically informed understanding of the folk concept of choice has important implications for debates concerning free will, responsibility, and other debates spanning psychology and philosophy.

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1. Introduction

Our concept of choice is integral to the way we understand others and ourselves, especially when considering ourselves as free and responsible agents. For example, in research conducted by Ogletree, Archer, and Hill (2016), participants were presented with scenarios in which a negative outcome occurred (e.g., receiving bad grades) as a result of a current situation (e.g., living in a dorm in which late-night partying is frequent). In the vignettes the degree of choice the protagonist had over their current situation was manipulated to reflect the presence of choice (e.g., “Taylor is a 19-year-old college student who chose to live in a dorm ...”), the absence of choice (e.g., “Taylor is a 19-year-old student who had no choice but to live in a dorm ...”), or was neutral with respect to choice (e.g., “Taylor is a 19-year-old student who is living in a dorm ...”). Participants blamed the protagonist for the negative outcome (e.g., receiving bad grades) to a greater degree in the choice condition than in the neutral and the no-choice condition. In other work, Savani and colleagues (Savani & Rattan, 2012; Savani, Stephens, & Markus, 2011) manipulated people’s concept of choice (e.g., through a task in which participants were to press a spacebar every time a character in an animation made a choice versus a control condition where participants were to press a spacebar for some types of actions). They found that by simply activating a person’s concept of choice increases acceptance and maintenance of wealth inequality (Savani & Rattan, 2012), increases victim blaming, and decreases empathy for disadvantaged persons (Savani et al., 2011). The perception of choice does not just impact third-party judgments of responsibility and blame, but also first-person judgments. People tend to blame themselves more for unexpected negative outcomes when they think they had a choice than when they think they did not have a choice (Arkin, Gleason, & Johnston, 1976).

Choice also plays a central role in the folk concept of free will (Baumeister, Sparks, Stillman, & Vohs, 2008; Coyne, 2012; Monroe, Dillon, & Malle, 2014; Monroe & Malle, 2010; Nahmias, 2009; Ogletree & Oberle, 2008; Shepard & Reuter, 2012;

* Corresponding author at: Emory University, Department of Psychology, 36 Eagle Row, Atlanta, GA 30322, United States.

Emory University Department of Psychology 36 Eagle Row Atlanta GA 30322 United States

Email address: jason.s.shepard@emory.edu (J. Shepard)

Turri, in press), as well as in philosophical analyses of free will (Biehl, 2008; Brown, 2006; Donagan, 1987; Freeman, 2000; Ginet, 1966; Holton, 2006; Kane, 1996; Murray & Nahmias, 2014; Unger, 2002; van Inwagen, 1983). The connection between choice and free will is so strong that simply recalling choices in one task leads to stronger endorsement of beliefs in free will in an ostensibly unrelated task (Feldman, Baumeister, & Wong, 2014). The link between choice, freedom, and responsibility appears across cultures (Chernyak, Kushnir, Sullivan, & Wang, 2013; Sarkissian et al., 2010; cf., Savani, Markus, Naidu, Kumar, & Berlie, 2010), and the basis of these connections can be found early in development (Chernyak & Kushnir, 2014; Chernyak et al., 2013; Nichols, 2004).

While many researchers agree that choice plays a central role in free will and responsibility (cf., Biehl, 2008), it's not clear that all parties have the same idea in mind when they talk about choice. Specifically, it is not clear whether all parties agree on whether choice requires an agent to have *genuinely open alternatives*, or *the ability to do otherwise*. An understanding of choice that requires genuinely open alternatives appears to be the view of choice (often implicitly) assumed by many incompatibilists (i.e., people who hold the view that that free will is not compatible with determinism) (e.g., Coyne, 2015; Ginet, 1966; Greene & Cohen, 2004; Kane, 1996; Miles, 2013; van Inwagen, 1983).

Another possible view is that choice doesn't require genuinely open alternatives; rather choice requires *psychologically open alternatives*.¹ In other words, choice may simply require an *ability to consider alternate possibilities*, rather than an ability to actually do otherwise. This psychological conception of choice appears to be the view of choice implicit in Monroe and Malle (2010) explication of the folk concept of free will. Contrary to viewing a choice-centered view of free will as implying a requirement for genuinely open alternatives, Monroe and Malle argued that the folk concept of free will is tied to a "psychological" notion of choice that does not have such requirements.

This distinction in how choice is construed is not only important for theoretical reasons, but also for practical reasons. While humans have the ability to construct and consider alternate possibilities, it is a question of physical fact whether we have genuinely open possibilities. Some have argued that the world as a matter of physical fact does not afford genuine open alternatives, and thus, at best, we only have an illusion of choice (Coyne, 2012; Freeman, 2000; cf., Unger, 2002). If this is right and if free will and moral responsibility require choice, then our practices of holding each other morally responsible, including in everyday contexts and in legal contexts, would be built upon flawed assumptions and need to be revised (Coyne, 2012; Greene & Cohen, 2004; Miles, 2013).

While many of these theorists tend to treat choice as a unitary concept, work by Porter (2013) provided evidence that the English word 'choice' is often used to express two distinct, though closely related, concepts. Porter (2013) conducted semi-structured interviews on issues related to childhood obesity. Interested in the role that perceptions of choice played in childhood obesity, she analyzed these interviews focusing on how people expressed notions of choice. She found evidence for a meaningful distinction between the ways people talk about *making choices vs. having choices*.²

If Porter is right, then treating choice as a unitary construct that either requires genuinely open possibilities or psychologically open possibilities may be misguided. It's possible that one of these notions of choice requires genuinely open possibilities, while the other only requires psychologically open possibilities. Such a possibility may also help explain the disagreement on the nature of choice. Some researchers may implicitly assume a notion of choice that requires genuinely open possibilities, while others may implicitly assume a notion of choice that only requires psychologically open possibilities. These implicit assumptions may well be a source of apparent disagreement in the literature. There is some anecdotal evidence that this may be the case: Those who have the view that choice requires genuinely open possibilities often use the language of *having choices* (e.g., Coyne, 2012; Ginet, 1966; van Inwagen, 1983), while those who have the view that choice only requires psychologically open possibilities often use the language of *making choices* (e.g., Monroe & Malle, 2010).

In other research on the concept of choice, Turri (in press) found evidence that our concept of choice is sensitive to the goodness or badness of an outcome, finding that when an outcome is bad or neutral, our concept of choice appears to be sensitive to whether there were genuinely open possibilities, but when an outcome is good, our concept of choice does not appear to be sensitive to genuinely open possibilities. While Turri's research is one of the few projects that has empirically investigated the folk concept of choice, his research does not address whether choice is sensitive to psychologically open alternatives nor the possibility that there are two distinct concepts of choice expressed in the phrase 'made a choice' and 'had a choice'. Woolfolk et al. (2006) and May (2014) found evidence that our concept of choice is sensitive to constraints on possible options, providing evidence that our concept of choice may be sensitive to the extent in which an agent has open possibilities. However, in both Woolfolk et al.'s and May's research they used the phrasing of 'had a choice'. The question still remains whether there is a distinction between 'made a choice' and 'had a choice', and if there is, whether 'made a choice' and 'had a choice' might be differentially sensitive to genuinely open possibilities or psychologically open possibilities.

¹ Another way to think about the distinction between genuinely open alternatives and psychologically open alternatives is in terms of whether alternatives are *objectively available* (i.e., as a matter of fact about the world, the alternatives are available) or *subjectively available* (i.e., from the point of view of the decision maker, the alternatives are available), respectively. The distinction between the ability to do otherwise and the ability to consider alternate possibilities is also similar to the distinction made by Monroe and colleagues (Monroe & Malle, 2010; Monroe et al., 2014; see also Nahmias, Shepard, & Reuter, 2014) when they discuss whether free will is "metaphysical" or "psychological."

² This distinction was also recognized as important distinction by the philosopher Biehl (2008).

In this paper, we report four experiments that provide greater insight into the nature of the folk concept(s) of choice, with two emphases: testing whether there is a distinction between ‘making a choice’ and ‘having a choice’, and (2) whether the folk concept(s) of choice requires genuinely open possibilities or only psychologically open possibilities.

2. Experiment 1

2.1. Method

2.1.1. Participants

The study was administered to 60 people recruited online through Amazon’s Mechanical Turk (mTurk).³ All participants were located in the United States and spoke English as their first language.

2.1.2. Materials and procedure

Participants were asked to provide definitions for the phrases ‘making a choice’ and ‘having a choice’. The presentation order of the questions was randomized.

2.2. Results and discussion

In order to identify commonly occurring themes in participant responses, three hypothesis-blind coders independently reviewed responses and developed categories based on common themes. The coders then worked together to provide a final list of common themes, resulting in 10 themes: Decision/Commitment, indicated by the use of words like ‘decision’ or synonyms or explicit mention of committing to a course of action; Evaluation, indicated by evaluative terms such as good, bad, and valued; Alternatives/Options, indicated by the explicit mention of alternatives, options, or any synonyms; Process, indicated by defining choice as something that unfolds in multiple stages; Outcome, indicated by an explicit mention of the outcome of a decision as part of the definition of choice; Freedom, indicated by the use of words such as “freedom,” “free will,” and other similar terms; Ability, indicated by the use of words like “ability,” “can,” and synonyms; Diversity, indicated by explicit mention of option being numerous or through contrasting options as being very different; Common, indicated by explicit mention of choice being a common act; Necessity, indicated by choices being necessary to make. The coders then independently coded participant responses based on the 10 themes. Any one definition could be coded into multiple themes. For example, one of the participant-provided definitions, “making a choice means thinking of all options and choosing the one that best suits your needs,” was coded involving a Decision (“choosing the one”), Evaluation (“best suits your needs”) and Alternatives (“thinking of all options”). Coding agreement was high for both making a choice (Fleiss’ Kappa = 0.868) and having a choice (Fleiss’ Kappa = 0.681). Where disagreements occurred, final classification was based on majority rule.

There was wide agreement among participants for three main components of ‘making a choice’: 92% of definitions included Alternatives/Options, 58% of definitions included Evaluation, and 30% of definitions included Decision/Commitment. No other theme was included in more than 10% of definitions. Ninety-seven percent of definitions included at least one of these three themes, 53% included at least two of the three themes, and 15% included all three themes.

There was also wide agreement among participants for three main components of ‘having a choice’: 81% of definitions included Alternatives/Options, 55% included Ability, and 28% included Freedom. No other theme was included in more than 10% of the definitions. Ninety-seven percent of definitions included at least one of these three themes, over 57% included at least two of the three themes, and 10% included all three themes (see Table 1).

The definitions provided by participants differed in some important ways for ‘making a choice’ and ‘having a choice’, providing evidence for two distinct concepts. Making a choice involves evaluating alternatives and committing to an alternative, whereas having a choice involves the ability to freely decide between alternatives. Though the most common theme expressed in participants’ definitions for making a choice and having a choice was Alternatives/Options, the method used in this study does not allow insight into finer grain distinctions, such the type of alternatives (genuinely open vs. psychological open) required of the concepts.

3. Experiment 2a

In this experiment, we tested whether people judge that the concepts ‘making a choice’ and ‘having a choice’ depend on genuinely open alternatives.

³ mTurk is a crowdsourcing service administered by Amazon and is regularly used to recruit participants for psychology studies. Samples from Amazon Turk are more demographically diverse than typical American college samples and data obtained are at least as reliable as those obtained via traditional methods (Buhrmester, Kwang, & Gosling, 2011).

Table 1

Examples of definitions provided by participants for “making a choice” and “having a choice”.

Make or Have	Participant’s Definition
Make	“Assessing the available choices and then committing to a particular course of action”
Make	“To select an option that is most beneficial or least harmful”
Make	“To pick the best option that you can perceive among a set of possibilities”
Have	“The chance to willingly make a decision between multiple options or behaviors”
Have	“Having the ability to choose, of free will, from multiple options”
Have	“It’s physically possible to pick another course of action when faced with a situation”

3.1. Method

3.1.1. Participants

The experiment was administered to 60 people recruited online through mTurk. All participants were located in the United States and spoke English as their first language.

3.1.2. Materials and procedures

Materials included four versions of eight scenarios (for a total of 32 scenarios). The four versions were obtained from creating two factors with two levels of each factor. In the first factor (factor: ALTERNATIVES), the levels corresponded to whether the actor had an alternative (Level: Alternatives) or did not have an alternative (Level: No Alternatives). In the second factor (factor: AGREE), the levels corresponded to whether the actor agreed to a certain course of action (level: Agree) or declined (level: Decline⁴).

An example of an Alternatives scenario was: Stephanie is a college student who often goes camping on weekends. Stephanie’s friend informs her that there is a departmental camping trip this week and that Stephanie is invited to come. Stephanie tells her friend that she will go [will not go] on the camping trip

In the No Alternatives version, a sentence was added that made it clear that the course of action was not actually available to the actor; though, importantly, the course of action was still psychologically open. For example, in the No Alternatives version of Stephanie and the camping trip scenario, the following sentence was added:

Unbeknownst to Stephanie or her friend, the camping trip was cancelled earlier that day, so Stephanie would not have been able to go.

Scenarios were randomly assigned to participants with the restriction that they read two of each scenario type (i.e., two scenarios from each level of each factor) and that they did not read two versions of the same scenario. Participants read one version of all eight scenarios. After reading each scenario, participants were asked whether the character in the story *made a choice* to perform the action and whether the character *had a choice* to perform the action. Participants were also asked whether the character *made a choice not* to perform the action and whether the character *had a choice not* to perform the action. Participants were asked all four questions for each scenario, but for the sake of theoretical interest and intelligibility, we only report data for the cases in which the questions were congruent with the action. Participants gave a rating using an 8-point scale anchored at the poles of 0 DEFINITELY NO and 7 DEFINITELY YES. Question order was randomized.

3.2. Results and discussion

Participant ratings for each scenario type were averaged. Given the design of the experiment, initial probing for an interaction could have been conducted as two separate 2 (Alternatives vs. No Alternatives) × 2 (Agree vs. Decline) interactions, one for each question. Alternatively, the analysis could have been conducted as a three-way ANOVA with question type as the third variable (Made Choice vs. Had Choice). We opted for the latter analysis since it is of interest whether the ALTERNATIVES manipulation differentially affects attribution of the concepts ‘having a choice’ vs. ‘making a choice’ to the scenarios. The three-way interaction was significant, $F(1, 59) = 16.943, p < 0.001, \eta_p^2 = 0.223$, indicating that the ALTERNATIVES manipulation interacted with making a choice and having a choice in different ways.

For ‘making a choice’ the two-way interaction was significant, $F(1, 59) = 7.658, p = 0.008, \eta_p^2 = 0.115$. The ALTERNATIVES manipulation did not impact attributions of making a choice in Agree scenarios, $t(59) = 0.000, p = 1.000$, but the ALTERNATIVES manipulation had a small impact people’s attributions of making a choice in the Decline scenarios, $t(59) = 2.89, p = 0.005$, Cohen’s $d = 0.37$. Even when attributions of making a choice were lowest, people tended to attribute making a

⁴ To help clarify factor versus level of a factor, we adopt the convention of using all caps when referring to a factor. For levels, only the first letter of each word is capitalized.

choice, $ps < 0.001$ (comparison was to midpoint of 3.5). In fact, attributions of making a choice were less than one point off of ceiling in all cases. When taken together, these patterns of results indicate that our concept of ‘making a choice’ is only weakly sensitive—if sensitive at all—to whether or not genuinely open alternatives are present.

For having a choice, the two-way interaction (Alternatives \times Agree) was also significant, $F(1, 59) = 5.372$, $p = 0.024$, $\eta_p^2 = 0.083$. The ALTERNATIVES manipulation impacted people’s attributions of having a choice in the Agree scenarios, $t(59) = 5.89$, $p < 0.001$, Cohen’s $d = 1.04$, and in the Decline scenarios, $t(59) = 4.184$, $p < 0.001$, Cohen’s $d = 0.75$. Thus, the significant two-way interaction in this case indicates that the effect, while strong for both the Agree and Decline conditions, was stronger for the Agree condition. This interaction is different from the interaction observed for making a choice where there was no effect when the character agreed and only a small effect when the character declined. Even though the Alternatives manipulation had a bigger impact on attributions of having a choice, people still tended to attribute having a choice in all cases, $ps \leq 0.01$. For a summary of the results, see Fig. 1a and b.

4. Experiment 2b

One possible worry about Experiment 2a is that the participants were considering different time points when answering the “made a choice” question and the “have a choice” question, specifically that participants are considering the status of choice at the time of the decision when responding to the “made a choice” question but that they are considering the status of choice at a later point in time, perhaps after the character is made aware that the action is no longer available.⁵ To help address this concern we ran a follow-up experiment to Experiment 2a.

4.1. Method

4.1.1. Participants

The experiment was administered to 30 people recruited online through mTurk. All participants were located in the United States and spoke English as their first language.

4.1.2. Materials and procedures

Materials and procedures were identical to Experiment 2a except participants were only ran on the Agree condition, and we added language to the questions that stressed the relevant time period that the participant should consider when answering the question. For example, we asked [italicized clause was added]: “*At the moment in time that Stephanie agreed to go on the camping trip, did she make a choice/have a choice?*”.

4.2. Results and discussion

This experiment replicated the results of the original, finding that there was no difference between scenarios for “made a choice,” $t(39) = 0.93$, $p = 0.36$, and a difference between scenarios for “had a choice,” $t(39) = 3.437$, $p < 0.001$.

5. Experiment 3

In Experiment 2, only ‘having a choice’ was strongly impacted by the ALTERNATIVES manipulation; ‘making a choice’ was not impacted in the Agree scenarios and only minimally impacted in the Decline scenarios. Additionally, even when the ALTERNATIVES manipulation had a strong effect on attributions of choice, people still tended to attribute choice. Of course, this does not mean that making a choice is not sensitive to the availability of alternatives. It could be that our concepts of choice, especially that of making a choice, are more dependent on psychologically open alternatives than genuinely open alternatives. In Experiment 3, we sought to test whether and to what extent choice depends on alternatives being psychologically open.

5.1. Method

5.1.1. Participants

The experiment was administered to 60 people recruited online through mTurk. All participants were located in the United States and spoke English as their first language.

⁵ We thank an anonymous reviewer for raising this worry.

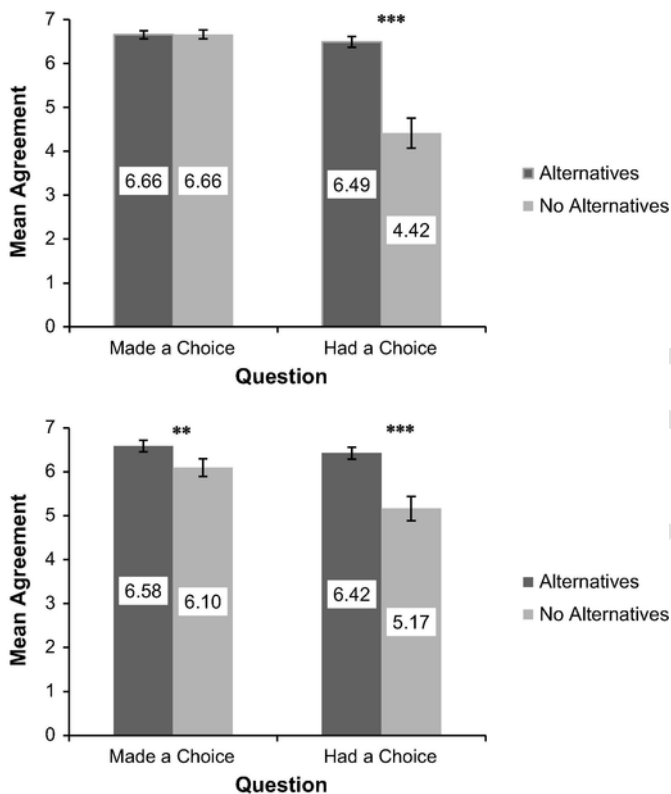


Fig. 1. (a) and (b) Attributions of making a choice and having a choice depending on whether the choice was to agree (a) or decline (b) and depending on whether both alternatives were open (Alternatives) or whether one of the alternatives was closed (No Alternatives). Mean ratings for each condition were significantly above the mean, $p < 0.01$, indicating that even in cases which genuinely open alternatives were not available, people still tended to attribute choice. Error bars represent standard errors of the mean. ** $p < 0.01$, *** $p < 0.001$.

5.1.2. Materials and procedures

Materials and procedures were identical to Experiment 2 except a different ALTERNATIVES manipulation was employed, which we will refer to ALTERNATIVES₂. Instead of being presented with Alternatives and No Alternatives version of the scenarios, participants were presented with No Alternatives and No Psych Alternatives of the scenarios.

The only difference between the No Alternatives scenario and the No Psych Alternatives scenario was that in the No Psych Alternatives scenarios the main character knew that the agree option was not available. For example, in the Stephanie and camping trip scenario, in order to create the No Psych Alternatives scenario, the last sentence in the No Alternatives was changed from:

Unbeknownst to Stephanie or her friend, the camping trip was cancelled earlier that day, so Stephanie would not have been able to go.

To:

Stephanie knows that the camping trip was cancelled earlier that day, so Stephanie knows that she would not have been able to go.

Since Stephanie knew the agree option was not available, it was an option that she could not have seriously considered. In other words, the option was closed to Stephanie based on her psychological state (e.g., of belief or knowledge).

5.2. Results and discussion

The analyses conducted were analogous to Experiment 2. To test whether the ALTERNATIVES₂ manipulation differentially impacted attributions of having a choice and making a choice, a 2 (No Alternative vs. No Psych Alternatives) \times 2 (Agree vs. Decline) \times 2 (Made vs. Have) ANOVA was conducted. The three-way interaction was significant, $F(1, 59) = 8.075$, $p = 0.006$, $\eta_p^2 = 0.120$, indicating that the alternatives manipulation interacted with making a choice and having a choice in different ways.

For making a choice, the two-way interaction ($ALTERNATIVES_2 \times AGREE$) was significant, $F(1, 59) = 9.885$, $p = 0.003$, $\eta_p^2 = 0.143$. When the character agreed to the action, attributions for making a choice were significantly lower in the No Psych Alternatives condition than in the No Alternatives condition, $t(59) = 7.57$, $p < 0.001$, Cohen's $d = 1.34$. When the character declined the action, attributions for making a choice were also significantly lower in the No Psych Alternatives condition than in the No Alternatives condition, $t(59) = 4.503$, $p < 0.001$, Cohen's $d = 0.667$. Thus, the significant two-way interaction in this case indicates that the effect, while present in both the Agree and Decline conditions, was stronger in the Agree condition. Additionally, when the character agreed to the course of action, participants tended to neither attribute making a choice nor not attribute making a choice. In other words, the average attribution was not significantly different from the mid-point of 3.5, $t(59) = 1.547$, $p = 0.127$. Attributions of making a choice in the other cases remained above the mid-point, $ps < 0.001$, indicating that in all the other cases participants tended to attribute making a choice. Clearly, the $ALTERNATIVES_2$ manipulation used in this experiment had a much stronger impact on attributions of making a choice than the $ALTERNATIVES$ manipulation used in Experiment 2, indicating that 'making a choice' is strongly sensitive to whether or not psychologically open alternatives are present but only weakly sensitive to whether genuinely open alternatives are present.

For having a choice, the two-way interaction ($ALTERNATIVES_2 \times AGREE$) was not significant, $F(1, 59) = 0.200$, $p = 0.657$, $\eta_p^2 = 0.003$, indicating that the effect of the $ALTERNATIVES_2$ manipulation was similar regardless of whether the character in the story agreed to or declined the course of action. There was a main effect for $ALTERNATIVES_2$, such that participants' attributions of had a choice was lower in the No Psych Alternatives condition than in the No Alternatives condition, $F(1, 59) = 17.708$, $p < 0.001$, Cohen's $d = 0.472$. There was no main effect for the $AGREE$, $F(1, 59) = 3.148$, $p = 0.081$. The average attribution of had a choice in the No Psych Alternatives condition did not significantly differ from the midpoint, $t(59) = -0.252$, $p = 0.802$. As in Experiment 2, average attributions remained above the midpoint in the No Alternatives condition, $t(59) = 3.519$, $p = 0.001$. These results indicate that having a choice is strongly affected by the presence of genuinely open alternatives (Experiment 2) and by the presence of psychologically open alternatives (Experiment 3). For a summary of Experiment 3 results, see Fig. 2a and b.

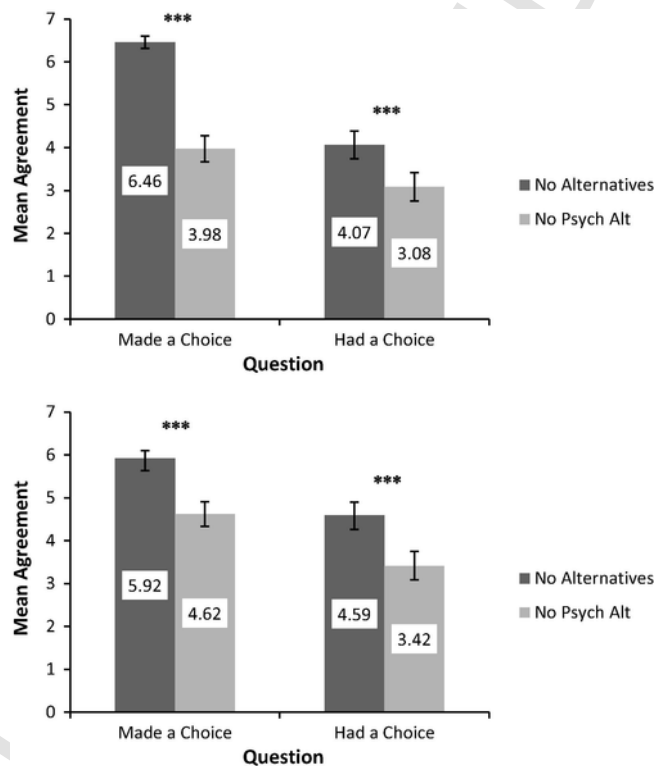


Fig. 2. (a) and (b) Attributions of making a choice and having a choice depending on whether the choice was to agree (a) or decline (b) and depending on whether the alternative was closed but not psychologically closed (No Alternatives) or was closed and psychologically closed (No Psych Alt). Error bars represent standard errors of the mean. Replicating results from Experiment 2, mean ratings in all the No Alternatives conditions were significantly above the mid-point, $p < 0.001$, again, indicating that when genuinely open alternatives were not available people still tend to attribute choice; however, mean ratings for three of the four No Psych Alternatives conditions did not differ from the midpoint, $p > 0.05$. Error bars represent standard error of the mean. *** $p < 0.001$.

6. Experiment 4

Experiments 2 and 3 shed light on a subtle but theoretically important difference between the notion of choice employed in the phrase ‘making a choice’ and in the phrase ‘having a choice’: Making a choice is more dependent on one’s psychological attitude toward alternatives (Experiment 2) than the presence of genuinely open alternatives (Experiment 1), while having a choice is dependent on genuinely open alternatives (Experiment 2) and one’s psychological attitude toward those alternatives (Experiment 3).

However, those who claim that choice requires genuinely open alternatives may object to the scenarios used in Experiment 2 as they may not have closed off the “right set” of alternatives. Participants may have presumed that the actor had a genuinely open alternative to agree or to decline at the time of the decision, in spite of the fact that the actor could not follow through on the decision.

Scenarios that explicitly block the ability to decide in any way other than the way that was decided are needed in order to assert that ‘making a choice’ is not (strongly) dependent on genuinely open alternatives. Such scenarios have been used in experiments in the free will literature (Miller & Feltz, 2011; Shepard & Reuter, 2012; Woolfolk et al., 2006). A special set of these cases are known as Frankfurt cases (Frankfurt, 1969). Frankfurt cases are particularly apt at making salient that an actor could not have chosen any other way than the actor chose. Take the following example of a Frankfurt case adapted from Fischer (1994; see also Shepard & Reuter, 2012):

Jones is in a voting booth for his town’s mayoral election, and he is still debating for whom he will vote. Unbeknownst to Jones, a neurosurgeon named Black has implanted a chip in Jones’s brain that monitors Jones’s brain states and can alter them if need be. Black is a diehard supporter of Mayor Smith. Should the chip detect brain activity indicating that a decision to not vote for Mayor Smith is forthcoming, the chip will activate, ensuring Jones votes for Mayor Smith. Jones’s brain activity never indicates a decision to not vote for Mayor Smith is forthcoming, so the chip does not activate. Jones votes for Mayor Smith without any intervention from Black’s chip.

Given the facts of this scenario, Jones could not have made any other decision than the decision he in fact made. If there was any brain activity indicating that any action other than a vote for Mayor Smith was forthcoming, the device would have activated causing Jones to make the decision to vote for Mayor Smith. Frankfurt cases are designed to explicitly cut off the relevant alternatives, including the alternative to make or not make a certain decision, without subverting the psychological processes that underlie the decision. In other words, these cases completely close off genuinely open alternatives at a point prior to the decision without cutting off psychologically open alternatives.

If choice requires genuinely open alternatives in any sense (e.g., could have decided differently, even if one could not have followed through on the decision), then we would expect people not to attribute making a choice or having a choice to characters in Frankfurt cases. However, if choice is primarily dependent on psychological factors, we would expect that people will tend to attribute choice. We suspect that people will not treat the Frankfurt cases much differently than the No Alternative cases used in Experiments 2 and 3.

Experiment 4 is also designed to address a second concern: We have yet to observe a situation in which people generally withheld attribution of choice (i.e., we have not observed attributions of choice significantly below the midpoint). Given the centrality of alternatives to definitions of making and having a choice (Experiment 1), it is surprising that closing both psychological alternatives and genuine alternatives did not lead to attributions of choice significantly below the midpoint (Experiment 3). Of course, it could be that we haven’t closed off the right set of alternatives and that once we close the right set of alternatives by using Frankfurt cases, we will observe much lower attributions of choice, perhaps even attributions nearing floor levels. We are less convinced that Frankfurt cases will achieve this, because we suspect that both genuinely open alternatives and psychologically open alternatives will need to be closed off in a very powerful and salient way to get people to fully withhold attributions of choice. Frankfurt cases shut down genuinely open alternatives in a powerful and salient way, but leave the psychological processing of the character completely intact.

In order to achieve a powerful and salient closure of both genuinely open alternatives and psychologically open alternatives, we used altered Frankfurt cases that involve manipulation (see Shepard & Reuter, 2012, for a similar approach). Prior work has shown that manipulation is perceived as a subversive act that bypasses and impairs important psychological capacities and processes (Sripada, 2012) even in situations in which the actor does not know they are being manipulated (Nahmias et al., 2014). An example of a manipulation case is provided below in Materials and Procedures.

6.1. Method

6.1.1. Participants

The experiment was administered online to 60 people recruited and paid via Amazon Mechanical Turk. All participants were located in the United States and spoke English as their first language.

6.1.2. Material and procedure

Materials included 8 scenarios. There were two types of each scenario: standard Frankfurt scenarios (Frankfurt) and manipulation versions of Frankfurt scenarios (Manipulation). For an example of a Frankfurt scenario used in this experiment see Jones' voting example given above. In the manipulation scenarios, everything was kept the same except the chip detected an alternate decision was forthcoming and thus activated, intervening on the decision making process. Here is the Manipulation version of the Jones' voting scenario:

Jones is in a voting booth for his town's mayoral election, and he is still debating for whom he will vote. Unbeknownst to Jones, a neurosurgeon named Black has implanted a chip in Jones's brain that monitors Jones's brain states and can alter them if need be. Black is a diehard supporter of Mayor Smith. Should the chip detect brain activity indicating that a decision to not vote for Mayor Smith is forthcoming, the chip will activate, ensuring Jones votes for Mayor Smith. Jones's brain activity indicates that a decision to not vote for Mayor Smith is forthcoming, so the chip activates. Jones votes for Mayor Smith, because of the intervention of the Black's chip.

Scenarios were randomly assigned to participants with the restriction that they were assigned four Frankfurt scenarios and four Manipulation scenarios and that they only assigned one version of each scenario. After reading each scenario, participants were asked whether the character *made a choice* to perform the action and whether the character *had a choice* to perform the action. Participants gave ratings using an 8-point scale anchored at the poles of 0 DEFINITELY NO and 7 DEFINITELY YES. The order of questions was random.

6.2. Results

To test whether the Frankfurt vs. Manipulation conditions differentially impacted attributions of having a choice and making a choice, a 2 (Frankfurt/Manipulation) \times 2(Made/Had) ANOVA was conducted. The interaction was significant, $F(1, 59) = 87.609$, $p < 0.001$, $\eta_p^2 = 0.598$, indicating that the Frankfurt vs. Manipulation conditions differentially affected attributions of making a choice and having a choice.

Attributions were higher in the standard Frankfurt cases than in the Manipulation cases for making a choice, $t(59) = 23.325$, $p < 0.001$, Cohen's $d = 4.457$, and having a choice $t(59) = 6.109$, $p < 0.001$, Cohen's $d = 0.773$. Though the effect is in the same direction for both having a choice and making a choice, the effect is much stronger for making a choice than having a choice.

Furthermore, attributions for making a choice and having a choice were above the midpoint in the standard Frankfurt cases, $p < 0.001$. This finding is consistent with our predictions, but contrasts with the prediction of those who believe choice requires genuinely open alternatives. This finding indicates that the folk concept of choice is compatible with situations in which one cannot make any decision other than the decision made, so as long as that decision goes through typical psychological processing. This is especially true for people's judgments of making a choice which remained near ceiling in the standard Frankfurt cases. In the Manipulation cases, attributions of making a choice were significantly below the midpoint, $t(59) = -11.670$, $p < 0.001$, further indicating that manipulation is incompatible with our concept of making a choice and that people are not just attributing choice whenever an agent makes a decision—the *agent* is not making a choice when manipulated to do so. However, attributions of having a choice did not differ from the midpoint, $t(59) = -1.881$, $p = 0.065$, though they did trend toward being below the midpoint and thus toward attributing not having a choice. See Fig. 3 for summary of results.

7. General discussion

The data presented here provide evidence that there are at least two distinct, though related, concepts of choice—one expressed in the phrase 'making a choice' and another expressed in the phrase 'having a choice'. One difference between these concepts involves the kinds of alternatives each is sensitive to. Making a choice is primarily sensitive to whether or not psychologically open alternatives are present (Experiment 3) and whether an agent's decision goes through normal psychological processes (Experiment 4), but only minimally sensitive to whether or not genuinely open alternatives are present (Experiments 2 and 4). In contrast, having a choice is sensitive to whether genuinely open alternatives are present (Experiment 2) and whether psychologically open alternatives are present (Experiment 3, Experiment 4).

Though many of the reported effects were large, there was only one kind of case in which people tended *not* to attribute choice: manipulation cases. We believe the reason why the manipulation cases were the only cases in which people tended to withhold attributions of choice was because manipulation cases closed off genuinely open alternatives and psychologically open alternatives in ways more powerful than any of the other cases. However, from our studies alone, we do not know what is the active feature that makes them so powerful. It could be because manipulation disrupts the first-person experience of agency or because of the simple presence of manipulation⁶ (i.e., including manipulation that does not disrupt first-person experiences of

⁶ We appreciate an anonymous review for bringing up, and pushing us, on this point.

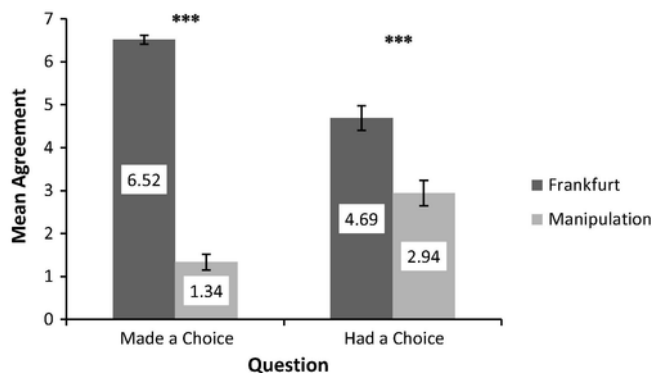


Fig. 3. Attributions of making a choice and having a choice for Frankfurt cases and Manipulation cases. In the Frankfurt cases, attributions for making a choice and having a choice were significantly above the midpoint, $p < 0.001$, indicating that even when genuinely open alternatives are closed at the moment of decision people still tend to attribute choice. In the Manipulation cases, attributions for making a choice were significantly below the midpoint, $p < 0.001$, indicating that manipulation effectively robs one of the ability to make choices. Error bars represent standard errors of the mean. *** $p < 0.001$.

agency). The manipulation cases we used could have been interpreted either way by participants. There are hints in prior research that are suggestive of an answer. For example, the manipulation cases used in Nahmias et al. (2014) made it explicit that the manipulation did not disrupt the first-person experience of agency (see also Sripada, 2012), and they found a very large effect of manipulation on free will judgments. However, these studies did not test how manipulation affects attributions of choice. While it may be reasonable to assume attributions of choice will be sensitive to the same kinds of features as attributions of free will, there are reasons to be cautious. Attributions of *making a choice* and *having a choice* may be sensitive to different features of manipulation. It's possible that one is sensitive to the simple act of being manipulated, while the other is sensitive to the disruption of first-person experience of agency. It's also possible that attributions may be sensitive to both simple manipulation and the disruption of first-person experience of agency. More research is needed before we can be confident of answer.

These results have implications for the free will debate, at least as it concerns people's beliefs about free will. For example, Monroe and Malle (2010) found strong evidence that choice was central to people's concept of free will. Under the assumption that choice is, to use their language, a "psychological" (i.e., requires psychologically open alternatives) concept and not a "metaphysical" (i.e., requires genuinely open alternatives) concept, they argued that free will was psychological and not metaphysical (see also Monroe et al., 2014). However, our results indicate that choice can be understood both as a psychological and as metaphysical concept depending on whether one understands choice in the terms of making a choice or in terms of having a choice. Whether our concept of free will is psychological or metaphysical depends on whether free will is about making choices or having choices.

While there is currently no experiment that explicitly tests whether making a choice or having a choice is the relevant concept of choice for free will, findings suggest attributions of free will more closely mirror attributions of making a choice than having a choice. For example, in an experiment that compared free will attributions on Frankfurt cases and manipulation cases, Shepard and Reuter (2012) found high attributions of free will in the Frankfurt cases but low attributions in manipulation cases. These patterns of free will attributions were very similar to the pattern of attributions of 'making a choice' reported in Experiment 4. Similar data reported by Nahmias and colleagues (Nahmias & Thompson, 2014; Nahmias et al., 2014) provide further evidence that free will appears to be more sensitive to psychologically open alternatives (making a choice) than genuinely open alternatives (having a choice). However, these findings are not conclusive. Results of several other experiments suggest that free will may depend more on genuinely open alternatives (having a choice) (Nichols, 2004; Nichols & Knobe, 2007; Sarkissian et al., 2010). Clearly, caution should be taken until direct evidence is gathered that can help us adjudicate between whether people's concept of free will is more dependent on making choices or on having choices. This caution, perhaps especially, applies to those who make normative claims about the need to reform our responsibility-holding practices based on the claim that choice and free will are illusions (e.g., Coyne, 2012).

The implications of our findings may go beyond the free will debate. For example, Ryan and Deci (2006) posed the question, "Does psychology need choice, self-determination, and will?" For Ryan and Deci, these constructs are central to self-determination theory (Ryan & Deci, 2000), a theory that has applications to educational practice, goal achievement, relationship quality, and well-being. However, their theory becomes difficult to defend if concepts like 'choice', 'self-determination', and 'will' are only fictions. In response to those skeptical of the existence of choice, determination, and will, Ryan and Deci have argued that a more nuanced understanding of these terms is required. The data from our experiments provide empirical support for the claim that the concept of choice is indeed more nuanced than often assumed. When challenged by a skeptic who claims that choice cannot exist because we do not, as a matter of physical fact, have genuinely open alternatives (e.g., Coyne, 2012), the evidence provided here can provide a response: Choice—or at least making a choice—does not appear to depend on genuinely open alternatives in the ways suggested by the skeptic's argument.

One of the more intriguing implications of our results is that a person may be able to make a choice without having a choice. We saw indications of this pattern across three different experiments: When genuinely open alternatives were not available but psychologically open alternatives were available, participants were more likely to attribute making a choice than having a choice. These findings may appear counterintuitive when considered in the abstract. After all, it just seems that making a choice requires actually having a choice. However, these findings are intuitive when we consider concrete cases. When Mary does not know the camping trip has been cancelled, she still has the ability to consider whether she wants to go. Regardless of whether she ends up telling her friend she has decided to go or not, the act of considering and deciding constitutes making a choice. However, Mary did not actually have a choice to go given the camping trip had already been cancelled.

The fact that one can make a choice without having a choice is important for some of the theoretical debates we have considered. If one believes making a choice requires having a choice and one believes that having a choice requires genuinely open alternatives, then any argument or evidence that demonstrates that alternatives are not genuinely open would demonstrate that both making a choice and having a choice are illusions. However, such an inference may not be sound in light of the findings of the present experiments. Making a choice and having a choice are distinct and dissociable concepts, and as such we can no longer treat the concept of choice as monolithic. If we do, we are likely to continue to make theoretical blunders, blunders that may lead to hasty claims about the nature of human beings, including the way we hold each other responsible.

8. Uncited references

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