# *The Association between Free Will Beliefs and Stereotypes: People's Belief in Fatalism Promotes Gender Stereotypes*

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**Abstract**
The problem of free will has been analyzed by philosophers over the ages. In addition to these analyses, social psychologists have recently begun to explore the problem of free will from a different perspective. In specific, they examine what constitutes laypeople's belief in free will and how these beliefs function in people's social life. As an example of such attempts, Zhao and his colleagues proposed and found that if people are induced to disbelieve in free will, they are likely to show stereotypes against out-group (Zhao, Liu, Zhang, Shi, & Huang, 2014). The present study sought to replicate this work but failed to confirm the effects of disbelief in free will on stereotypes. Then we additionally analyzed the relationships between subordinate concepts of free will beliefs (free will, scientific determinism, fatalistic determinism, and unpredictability) and stereotypes. This analysis found the unpredicted association between fatalistic determinism and stereotypes. Specifically, the more people endorsed the belief in fatalism, the more they expressed gender stereotypes. Despite its preliminary character, our findings indicate it is not disbelief in free will but belief in fatalism which causes stereotype in people's minds. Implications are discussed with regard to laypeople's concept of free will and its social functions.

Keywords: Free Will, Fatalism, Stereotype

## 1. Introduction

### Lay Conception of Free Will

The problem of free will has been debated by philosophers over the centuries. Does it exist? Is it compatible with determinism? These are essentially problems for philosophers and not problems for psychologists. The authors, as psychological researchers, do not seek to resolve these philosophical questions. Rather, the present investigation aims to explore psychological processes associated with free will beliefs. In specific, we elaborate the relationships between free will beliefs and gender stereotypes. But before we review the experimental evidence on the effects of free will beliefs on various judgments and behaviors, it will be necessary to confirm what lay concept of free will is.

Free will is a term frequently used in the philosophical literature, but to date there is no consensus about what is meant by free will. While a variety of definitions of the free will have been suggested (e.g., Haggard, Mele, O'Connor, & Vohs, 2010; Kane, 2005), the term is generally understood to mean alternative possibility (the ability to choose actions from at least two options) and agency (the ability to cause intended actions). This idea is supported by empirical research of Monroe and Malle (2010, 2015). Specifically, they asked participants to explain the conception of free will. On the basis of participants' free description data, they claimed that lay people's concept of free will consists of (a) the ability to make a decision/choice, (b) doing what you want, and (c) acting without internal or external constraints. We could argue that the responses categorized as "the ability to make a decision/choice" are associated with alternative possibility while those categorized as "doing what you want" and "acting without internal or external constraints" reflect agency.

Having confirmed the lay concept of free will, we will now turn to consider whether people hold strong free will beliefs in their everyday lives. In specific, do people think that they have the abilities to choose actions among possible options (alternative possibility) and cause intended actions (agency)? The available evidence suggests that people do believe in such free will (Laurene, Rakos, Tisak, Robichaud, & Horvath, 2011; Nahmias, Morris, Nadelhoffer, & Turner, 2005, 2006; Paulhus & Carey, 2011; Rakos, Laurene, Skala, & Slane, 2008). For instance, Rakos et al. (2008) demonstrated that people are likely to judge that they have free will when asked, and the following studies succeeded in replicating this tendency.

### Effects of Disbelief in Free Will

So far this paper discussed that the lay concept of free will consists of alternative possibility and agency, and people believe they have such abilities. But what would happen if people's belief in free will is challenged? Recently, this question has been addressed by researchers in social psychology and they have shown that inducing disbelief in free will changes people's social judgment and behavior. In the typical experiment, participants are shown or read several sentences which support or deny the existence of free will. In a subsequent task, participants who are primed with disbelief in free will are likely to judge or act differently compared with those primed with belief in free will.

As an example of such attempts, Vohs and Schooler (2008) examined the effects of disbelief in free will on willingness to cheat on the test. In one of their experiments, participants were presented with sentences which supported (free will condition), denied (determinism condition), or were unrelated (control condition) to the existence of free will. After this manipulation task, they completed a cognitive test in which they were allowed to overpay themselves. Results provided evidence that participants in the determinism condition took more money than those in the free will or control conditions. Thus, telling people that they do not have free will would prompt them to cheat on the test.

Subsequent work using the similar procedure has expanded the work by Vohs and Schooler (2008). For example, Baumeister, Masicampo, and DeWall (2009) investigated the effects of disbelief in free will on helping and aggression. They found that participants in the determinism condition were less willing to help others and restrain aggression than those in the free will and control conditions. Furthermore, Zhao, Liu, Zhang, Shi, and Huang's (2014) work demonstrated that induced disbelief in free will facilitates individuals to have negative stereotypes against outgroups. In specific, participants whose belief in free will was undermined were more likely to agree with statements which affirm racial stereotypes. Taken together, it seems plausible that to undermine people's belief in free will would lead to anti-social attitudes and behaviors.

Why does disbelief in free will facilitate anti-social attitudes and behaviors? According to Baumeister et al. (2009), statements which deny free will undermine the motivation of self-control, which is the capacity to override one's automatic responses. If people are told that they cannot choose their actions and cause intended actions, they would be less motivated to exert effort of self-control. At the same time, motivation of self-control is needed for restraining anti-social attitudes and behaviors and people tend to act impulsively without self-control. Thus, people whose belief in free will is challenged would be less motivated to control their automatic responses, resulting in the increase of anti-social attitudes and behaviors such as showing negative stereotypes.

**The Present Hypothesis**

As mentioned in the opening paragraph, this paper is intended as an investigation of relationships between free will beliefs and gender stereotypes. Although several studies have established that disbelief in free will motivates people to act anti-socially, replications are needed for the findings. The present work focuses on the research by Zhao et al. (2014) and aims to conceptually replicate their findings that disbelief in free will results in increased stereotypes. In the current experiment, participants are assigned to conditions which prime disbelief in free will (scientific determinism and social determinism conditions) or a condition which prime belief in free will (free will condition). Our analysis predicts participants in the scientific determinism and social determinism conditions would report stronger gender stereotypes than control participants.

## 2. Method

### Participants

Forty-eight undergraduates (34 men, 14 women, $M_{age}$ = 20.67, *SD* = 1.36) agreed to participate in an experiment by responding to a series of questions. They were randomly assigned to one of the three conditions (free will vs. scientific determinism vs. social determinism).

### Free Will Belief Manipulation

Participants completed computer-based tasks, consisting of the free will belief manipulation, the positive and negative affect measures, the stereotype measure, and the free will belief measure. At the first phase of the experiment, we used a sentence completion task as the manipulation of free will belief. This task requires participants to produce as many meaningful sentences as possible out of a series of words, and the contents of the words were changed across the conditions. In the free will condition, the sentence completion task included words such as "free will," "make choices," and "decide." Thus, participants in the free will condition were induced to make sentences which support free will. In contrast, in the scientific determinism condition, the task included words like "genes," "biological computers," and "neural activity." In a similar way, in the social determinism condition, "culture," "external world," and "home environment" were included in the task words. Accordingly, participants in these conditions were induced to make sentences which deny free will either because their actions are determined by scientific or social factors.

### Positive and Negative Affects

After the free will manipulation, participants completed the Japanese version of Positive and Negative Affect Schedule (PANAS; Sato & Yasuda, 2001) to check the possibility that the free will belief manipulation affects participants' mood. The Japanese version of PANAS consists of a 8-item Positive Affect subscale and a 8-item Negative Affect subscale.

### Stereotype

We used the Scale of Egalitarian Sex Role Attitudes (SESRA; Suzuki, 1994) as a measure of stereotype. This scale included 15 items, such as "A woman should have and raise one or more children," and "It is extremely important to raise a boy to be masculine and a girl to be feminine." Items were rated on a 5-point scale (1= *strongly disagree* and 5 = *strongly agree*), and higher scores represent stronger gender stereotypes.

**Free Will Belief Measure**

After the stereotype measure, participants completed the Japanese version of the Free Will and Determinism Plus Scale (FAD+; Watanabe, Sakurai, Watamura, & Karasawa, 2014) as a manipulation check. This scale consists of four subscales: free will (7 items), scientific determinism (7 items), fatalistic determinism (5 items), and unpredictability (8 items). Participants were instructed to rate their responses to these items on a 5-point scale (1= *strongly disagree* and 5 = *strongly agree*). Finally, participants were probed for suspicion and debriefed.

## 3. Results

**Preliminary Analysis**

Before testing the substantive hypotheses, we first examined the internal reliability of dependent variables and found that participants' responses to each measure were reliable (positive affect, $\alpha = .81$; negative affect, $\alpha = .89$; gender stereotype, $\alpha = .83$; free will, $\alpha = .57$; scientific determinism, $\alpha = .61$; fatalistic determinism, $\alpha = .79$; unpredictability, $\alpha = .83$). Then we conducted an ANOVA to test the possible effect of the free will belief manipulation on participants' mood. As we found no effects of the manipulation on positive and negative affect ($F$s $\leq 0.73$, *n.s.*), these variables were excluded from subsequent analyses.

**Stereotype**

The mean scores of gender stereotype are presented in Figure 1. We conducted an ANOVA on this measure, but the effect does not reach significance ($F = 1.21$, *n.s.*). Thus, contrary to our prediction, people's gender stereotypes have not changed as a function of free will belief.

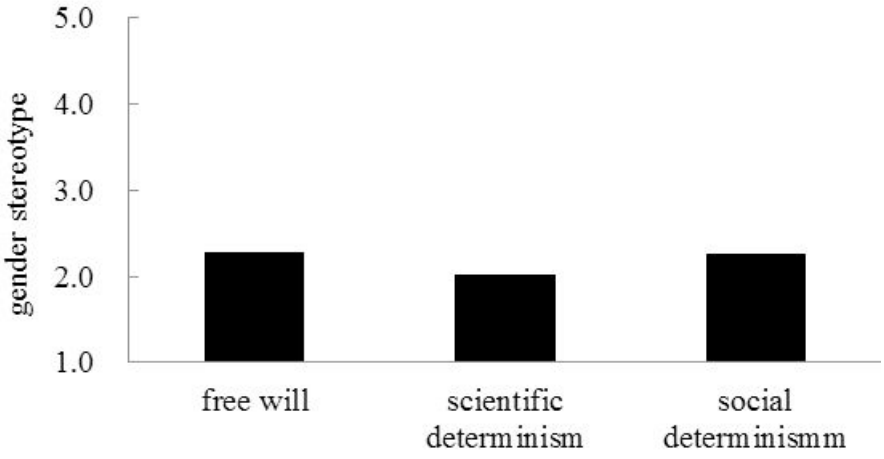


Figure 1: Mean gender stereotype scores as a function of free will belief

**Free Will Belief**

As a manipulation check, we included the FAD+ in the end of the experiment. Although we introduced the manipulation of free will belief, the scores on each subscale did not differ among the free will, scientific determinism, and social determinism conditions ($F$s $\leq$ 0.92, *n.s.*). Therefore, the manipulation of free will belief was not effective in the present experiment, suggesting that the lack of effects on stereotypes might be due to the failure of the free will belief manipulation.

**Relationships between Free Will Belief and Stereotype**

Although the manipulation of free will belief had no effects on gender stereotypes, we additionally analyzed correlation between the FAD+ subscales (free will, scientific determinism, fatalistic determinism, and unpredictability) and gender stereotypes. A significant correlation was found between fatalistic determinism and stereotypes ($r$ = .30, $p$ < .05), but not between free will and stereotypes ($r$ = -.03, *n.s.*). Scientific determinism and unpredictability were not also significantly correlated with stereotypes ($r$ = -.03, *n.s.*; $r$ = .03, *n.s.*). Therefore, gender stereotype seems to be associated with the beliefs concerning fatalism but not free will per se.

**4. Discussion**

**Hypothesis Testing**

This study investigated the relationship between free will beliefs and stereotypes. Contrary to our expectations, there was no evidence for the effects of the free will belief manipulation on gender stereotypes: people were not likely to show gender stereotypes in the condition where they were induced to disbelieve in free will. However, the manipulation did not have an effect on the FAD+ scores as well as gender stereotypes, so the lack of effect on gender stereotypes could be due to the failure of manipulation. This possibility is partially supported by the correlational analysis between FAD+ scores and gender stereotypes. As we found the significant correlations between fatalistic determinism and stereotypes, it is suggested that beliefs relating free will have some effects on gender stereotype.

Before speculating the reasons for this finding, we have to discuss why the manipulation of free will belief did not work. One explanation is that the contents of scientific and social determinism messages might have caused psychological reactance among participants. Psychological reactance means the motivation to act counter to pressure that is put on people and it is likely to occur when freedom is threatened or lost (Brehm & Brehm, 1981). If psychological reactance occurs, participants resist or act repulsively to the messages of manipulations, leading to a null or opposite effect. In the same manner, the observed no significant effects in the present study could be attributed to participants' psychological reactance because the contents of the "no free will" messages in the scientific and social determinism conditions are expected to threaten or lose freedom. In fact, Schooler, Nadelhoffer, Nahmias, and Vohs (2015) have pointed out that the manipulation of inducing disbelief in free will sometimes elicits psychological reactance. Therefore, we speculated that participants' psychological reactance might account for the manipulation failure of free will belief to some extent.

## Belief in Fatalism and Stereotypes

Although we failed to replicate the work by Zhao e al. (2014) that disbelief in free will leads to enhanced stereotypes, we found the unpredicted association between fatalistic determinism and gender stereotypes. Fatalism is the view that everything happens in the world is inevitable and there is nothing to do for us to change the fate. This belief in fatalism would make it difficult to override one's automatic responses because our efforts and intentions come to nothing under the fate. Therefore, it may be belief in fatalism and not disbelief in free will which undermines motivation of self-control such as showing gender stereotypes. In the meantime, however, previous research has indicated disbelief in free will as distinct from belief in fatalism prompts people to cheat on the test (Vohs & Schooler, 2008), which suggests denying free will is crucial for individuals disinclined to exert effort of self-control. Since the current and past research did not include a direct measure of self-control, it remains inconclusive how belief in fatalism or disbelief in free will affect social judgments and behaviors such as stereotypes and cheating. Accordingly, there would be a clear need for additional research to address more extensive processes behind these effects.

## Conclusion

In closing, it is important to note that the present investigation only deals with beliefs related with free will concepts, not free will itself. As discussed in the introduction, the questions whether free will exists, or whether free will is compatible with determinism have been debated by philosophers. Whereas the current study has nothing to say about these philosophical questions of free will, it does suggest social function of belief in free will and fatalism. In specific, this study found evidence that belief in fatalism and not belief in free will is associated with gender stereotypes. These social functions of people's beliefs in metaphysical concepts seem only solvable by empirical data, so future inquiries should be addressed to further uncover how people judge or act on the basis of their beliefs in fatalism or free will.

**References**


Baumeister, R. F., Masicampo, E. J., & DeWall, C. N. (2009). Prosocial benefits of feeling free: Disbelief in free will increases aggression and reduces helpfulness. *Personality and Social Psychology Bulletin*, *35*, 260-268.

Brehm, S. S., & Brehm, J. W. (1981). *Psychological reactance: A theory of freedom and control*. Academic Press.

Haggard, P., Mele, A., O'Connor, T., & Vohs, K.D. (2010). *Lexicon of key terms*. Retrieved from http://www.freewillandscience.com/FW_Lexicon.doc

Kane, R. (2005). *A contemporary introduction to free will.* New York: Oxford University Press.

Laurene, K. R., Rakos, R. F., Tisak, M. S., Robichaud, A. L., & Horvath, M. (2011). Perception of free will: The perspective of incarcerated adolescent and adult offenders. *Review of Philosophy and Psychology*, *2*, 723-740.

Monroe, A. E., & Malle, B. F. (2010). From uncaused will to conscious choice: The need to study, not speculate about people's folk concept of free will. *Review of Philosophy and Psychology, 1*, 211-224.

Monroe, A. E., & Malle, B. F. (2015). Free will without metaphysics. In Mele, A. (ed.), *Surrounding free will* (pp. 25-48). New York, NY: Oxford University Press.

Nahmias, E., Morris, S., Nadelhoffer, T., & Turner, J. (2005). Surveying freedom: Folk intuitions about free will and moral responsibility. *Philosophical Psychology*, *18*, 561-584.

Nahmias, E., Morris, S., Nadelhoffer, T., & Turner, J. (2006). Is incompatibilism intuitive? *Philosophy and Phenomenological Research*, *73*, 28-53.

Paulhus, D. L., & Carey, J. M. (2011). The FAD-Plus: Measuring lay beliefs regarding free will and related constructs. *Journal of Personality Assessment*, *93*, 96-104.

Rakos, R. F., Laurene, K. R., Skala, S., & Slane, S. (2008). Belief in free will: Measurement and conceptualization innovations. *Behavior and Social Issues*, *17*, 20-39.

Sato, A., & Yasuda, A. (2001). Development of the Japanese version of Positive and Negative Affect Schedule (PANAS) scales. *The Japanese Journal of Personality*, *9*, 138-139 (in Japanese).

Schooler, J., Nadelhoffer, T., Nahmias, E., & Vohs, K. D. (2015). Measuring and manipulating beliefs and behaviors associated with free will: The good, the bad, and the ugly. In Mele, A. (ed.), *Surrounding free will* (pp.72-94). New York, NY: Oxford University Press.

Suzuki, A. (1994). Construction of a short-form of the scale of egalitarian sex role attitudes (SESRA-S). *The Japanese Journal of Psychology*, *65*, 34-41.

Vohs, K. D., & Schooler, J. W. (2008). The value of believing in free will: Encouraging a belief in determinism increases cheating. *Psychological Science*, *19*, 49-54.

Watanabe, T., Sakurai, R., Watamura, E., & Karasawa, K. (2014). Development of a Japanese version of the Free Will and Determinism Plus Scale (FAD+). *The Japanese Journal of Personality*, *23*, 53-56 (in Japanese).

Zhao, X., Liu, L., Zhang, X. X., Shi, J. X., & Huang, Z. W. (2014). The effect of belief in free will on prejudice. *PLoS ONE*, *9*, e91572.

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