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**ORIGINAL RESEARCH REPORT**

# It's in Your Control: Free Will Beliefs and Attribution of Blame to Obese People and People with Mental Illness

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People's belief in free will is shown to influence the perception of personal control in self and others. The current study tested the hypothesis that individuals who believe in free will attribute stronger personal blame to obese people and to people with mental illness (schizophrenia) for their adverse health outcomes. Results from a sample of 1110 participants showed that the belief in free will subscale is positively correlated with perceptions of the controllability of these adverse health conditions. The findings suggest that free will beliefs are correlated with attribution of blame to people with obesity and mental health issues. The study contributes to the understanding of the possible negative implications of people's free will beliefs.

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**Keywords:** Belief in free will; Blame attribution; Obesity stigma; Mental illness

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## Introduction

The questions concerning the nature and existence of free will have captured the imagination of philosophers and laypersons alike. Philosophers have engaged in metaphysical arguments on free will for millennia. More recently, research in social-cognitive psychology and experimental philosophy has moved beyond the debate on the existence and metaphysical questions around free will, to look at laypersons' understanding of the free will and related beliefs (Baumeister, 2008; Feldman, 2017). Belief in free will is the belief that people have the capacity to act freely, and people vary in the extent to which they endorse this belief. Work on the psychology of free will, in particular, has been fruitful in shining light on the pertinent individual and societal implications of such beliefs (Baumeister & Monroe, 2014).

A number of empirical studies have found that the strength of belief in free will has several downstream consequences on individuals' behavior. Firstly, studies have looked at the influence of belief in free will on individuals' behaviors and outcomes. For example, findings show that people who believe in free will perform better at work and in academic environments (Feldman, Chandrashekar, & Wong, 2016; Stillman et al., 2010), and in self-control tasks (Rigoni, Kühn, Gaudino, Sartori, & Brass, 2012). On the other hand, weakening the belief in free will has been shown to induce maladaptive behaviors, such as racism (Zhao, Liu, Zhang, Shi, & Huang, 2014) and aggression toward others (Baumeister,

Masicampo, & DeWall, 2009). This strand of studies finds an adaptive socio-functional role of believing in free will, and documents the positive outcomes for individuals with stronger belief in free will. Secondly, researchers have investigated the implications of free will beliefs on the underlying perceptions of moral responsibility. This approach delineates the role of free will beliefs in societal considerations, in particular in the ideas that form the basis of justice and accountability. The assumption that a perpetrator engaged in wrongdoing had the ability to control their actions, and could make different free choices, is essential to legal and moral judgments (Searle, 2007). In fact, studies find that individuals' belief in free will is positively related to the severity of their punishment of wrongdoing (Krueger, Hoffman, Walter, & Grafman, 2014; Martin, Rigoni, & Vohs, 2017). In contrast, reducing belief in free will makes people less retributive in their punishments (Shariff et al., 2014).

There is evidence that people's free will beliefs influence fundamental social-cognitive processes that are engaged in the perception and understanding of others' behavior. People tend to view addictive behaviors as indicative of a lack of free will (Vonasch, Clark, Lau, Vohs, & Baumeister, 2017). Work by Genschow and colleagues finds that belief in free will increases the tendency to attribute other people's behavior internally, and decreases the tendency to attribute these behaviors to external factors (i.e., correspondence bias) (Genschow, Rigoni, & Brass, 2017). Similarly, free will belief increases the tendency to view others' behavior as intentional (Genschow, Rigoni, & Brass, 2019). Overall, the findings suggest that when it comes to judgments of others, free will beliefs may have important societal consequences.

In summary, belief in free will is the general belief that human behavior is free from internal and external constraints across situations (Feldman, 2017; Monroe & Malle, 2014). In particular, past research has demonstrated that belief in free will promotes the view that people have intentional control over behaviors and outcomes (Genschow et al., 2017; Genschow et al., 2019). Recently, work by Willoughby and colleagues (2019) looked at the correlations between free will beliefs and perceived contribution of genes (vs. environment) to various human traits, that included obesity and mental health issues (bipolar disorder, schizophrenia, and attention deficit hyperactivity disorder). The correlations were non-significant for these traits, suggesting that free will beliefs are not related to attributions to genes (although internal, beyond individuals' control) vs. environment. Building on these findings, in the present research, I explore the relationship between beliefs in free will and perception of controllability of adverse health conditions such as obesity and mental illness. I argue that free will belief is positively correlated with the controllability perceptions of health issues such as mental illness and obesity. The controllability perceptions of adverse outcomes are powerful predictors of blame attributions toward obese people and people with mental illness (Crocker, Major, & Steele, 1998). As a result, free will beliefs can contribute toward the stigmatization of obese people and people with mental illness.

Social stigma refers to attributes that are seen as undesirable and that most people in a society disapprove (Goffman, 1963). Controllability perceptions for both obesity and mental illness contribute to stigmatization of affected individuals (Crandall, 1994; Corrigan, 2000). In particular, attribution theory framework explains how perceptions of controllability lead to the stigmatization of individuals with mental health and obesity issues (Weiner, 1995; Weiner, Perry, & Magnusson, 1988). Weiner and coauthors (1988) found that when obesity of a target was described to be due to controllable factors (vs. uncontrollable factors), participants attributed more negative stereotypes and stigma with the affected individual. When mental illness is described as an outcome of an internal cause, people are less willing to help the affected person (Corrigan, 2000). Therefore, perceptions of controllability have proved to be one of the important factors that contribute toward stigma associated with obese people and people with mental illness.

### **Overview of current work**

The goal of the current work is to empirically examine the confirmatory hypothesis that belief in free will is positively correlated with blame attributions toward obese people and people with mental illness. Blame attributions refer to the extent to which people are thought to have control over and have responsibility for their obesity or mental illness. To measure free will beliefs, I chose a scale that presented the advantage of considering three distinct dimensions of belief in free will, namely free-will, determinism, and dualism, as independent constructs. I tested the two

predictions using a correlation coefficient between the free will subscale and measures of blame attributions to obese people and people with mental illness.

## **Method**

### **Pre-registration, power analysis, and open-science**

I pre-registered the study on the Open Science Framework (OSF). Pre-registrations, power analysis, and all study materials are available in the supplementary material. All measures, manipulations, and exclusions are reported, and data collection was completed before analyses. The pre-registration details, data, and analysis script based on R/RMarkdown code (R Core Team, 2015) are available on the OSF (<https://osf.io/bwzfk/>). The study was pre-registered with the aim to detect the smallest effect size of  $r = 0.10$  (Pearson correlation coefficient) given an alpha of .05 and power of .90, which suggested the total sample size of 1046.

### **Participants and procedure**

A total of 1110 participants were recruited online through American Amazon Mechanical Turk (MTurk) using the TurkPrime.com platform. The participants (572 males, 533 females, 5 unspecified) were between the ages of 19–80 ( $M_{age} = 39.78$ ,  $SD_{age} = 11.97$ ). Among participants, 76.1% reported their ethnicity as Caucasian, 4.7% as Asian or Pacific Islander, 12.2% as Black, 4.6% Hispanic, and 2.4% as Other. Participants were informed of the nature of the study, completed the survey measures after giving their consent, and were debriefed at the end. The pre-registration included possible exclusion criteria related to self-reported seriousness, English proficiency, and failing attention checks. Yet the exclusions had no impact on the findings; therefore, I present the results based on the full sample.

## **Measures**

### **Free will measures**

The study employed the Free Will Inventory (FWI; Nadelhoffer, Shepard, Nahmias, Sripada, & Ross, 2014) to assess participants' belief in free will. The FWI is a 15-item scale in which participants had to rate their agreement with each statement on a 5-point scale (1 = "Strongly disagree", 7 = "Strongly agree"). The scale includes three dimensions of free-will: free will (e.g., "People always have free will," "People ultimately have complete control over their decisions and their actions"), determinism (e.g., "Everything that has ever happened had to happen precisely as it did, given what happened before," "People's choices and actions must happen precisely the way they do because of the laws of nature and the way things were in the distant past"), and dualism (e.g., "The human mind cannot simply be reduced to the brain," "The human mind is more than just a complicated biological machine").

### **Blame attributions**

To measure participants' blame attributions to obese people, I used two widely used scales: the three-item willpower subscale of the Anti-Fat Attitudes (AFA)

Questionnaire (Crandall, 1994) and the eight-item Beliefs About Obese Persons (BAOP) scale (Allison, Basile, & Yucker, 1991). Sample items from the BAOP scale included “The majority of obese people have poor eating habits that lead to their obesity,” and “Obesity is rarely caused by a lack of willpower (R).” The sample items from the AFA scale included “Fat people tend to be fat pretty much through their own fault,” and “Some people are fat because they have no willpower.” Participants responded on 6-point scales, ranging from “Strongly disagree” to “Strongly agree”. The responses to two scales were consolidated into a single 11-item measure of blame attribution to obese people.

As a measure of blame attributions to people with mental illness, participants read a vignette about a patient with schizophrenia and responded to three statements based on the vignette. The vignette read:

“Harry is a 30 year-old single man with schizophrenia. Sometimes he hears voices and becomes upset. He lives alone in an apartment and works as a clerk at a large law firm. He had been hospitalized six times because of his illness.”

Three items measured the blame attribution: “I would think that it was Harry’s own fault that he is in the present condition,” “How controllable, do you think, is the cause of Harry’s present condition?” and “I would think one of the main causes of Harry’s mental illness is a lack of self-discipline and willpower.” Responses were recorded on a 9-point scale (1 = “not at all”, 9 = “very much”).

## Results

The predictions were tested using multiple correlation analyses. The results are presented in **Table 1**. First, the FWI subscales (i.e., free will, dualism, and determinism) were correlated with the extent of blame attributions to obese people. The results indicated that the belief in free will subscale was positively correlated with blame attribution to obese people. Similarly, the belief in free will subscale was positively correlated with blame

attribution toward the mentally ill person described in the scenario.

Although the determinism and dualism subscales were not part of the theoretical predictions, I collected responses to these scales and therefore report the correlations as part of the exploratory results (see **Table 1**). I found significant positive correlations between the dualism subscale and blame attributions to obese people and people with mental illness. On the other hand, the findings related to the determinism subscale were inconsistent. The determinism subscale was positively correlated with blame attributions to people with mental illness. In contrast, there was no significant association between the determinism subscale and blame attributions to obese people.

In an additional analysis, I ran two separate multiple regression analyses with all the FWI subscales as predictors of blame attributions to obese people and toward people with mental illness. In both the analyses, entering the dualism and determinism subscale into the regression equation, the belief in free will subscale remained significant in predicting blame attributions (see supplementary material for detailed results).

## Discussion

The purpose of this brief report was to test the hypothesis that belief in free will is strongly correlated with attribution of personal blame to obese people and to people with mental illness for their adverse health outcomes. The results showed consistent positive correlations between the free will subscale and the extent of blame to obese individuals and individuals with mental illness. The study employed both generic survey measures of internal blame attributions and a survey that measured the responses based on a person described in a vignette. The current study, although correlational, contributes to recent work that argues that belief in free will is linked to processes underlying human social perception (Genschow et al., 2017). Besides theoretical implications, the findings demonstrate the societal consequences of free-will beliefs.

**Table 1:** Means, standard deviations, and correlations with confidence intervals.

Variable	M	SD	1	2	3	4	5
1. Free-will subscale	5.04	1.24	<b>(0.88)</b>				
2. Determinism subscale	3.28	1.46	.07*	<b>(0.87)</b>			
			[.01, .13]				
3. Dualism subscale	4.82	1.57	.34**	.18**	<b>(0.90)</b>		
			[.28, .39]	[.12, .24]			
4. Blame attribution to obese people	4.37	0.80	.29**	-0.02	.09**	<b>(0.86)</b>	
			[.24, .35]	[-.08, .04]	[.03, .15]		
5. Blame attribution to people with mental illness	2.35	2.06	.10**	.45**	.11**	0.01	<b>(0.96)</b>
			[.04, .15]	[.40, .50]	[.06, .17]	[-.05, .07]	

Note: N = 1110; M and SD are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. \*  $p < .05$ . \*\*  $p < .01$ . Cronbach’s alphas of the scales are presented along the diagonal.

Perception of controllability and personal responsibility is a well-documented predictor of negative stereotypes and stigma associated with people with mental illness and obesity (Blaine & Williams, 2004; Crandall, 1994). Perceptions of controllability related to people with health issues have detrimental social outcomes such as social rejection of the affected individuals (Crandall & Moriarty, 1995), and reduced social support and help from others (Crandall, 1994). The current study underlines that belief in free will as an individual-level factor is particularly relevant for developing a broader understanding of predictors of stigmatization of those with mental illness and obesity.

This study is not without limitations. The correlational study design prevents any causal interpretation of the relationships between free will beliefs and the judgments associated with mental health conditions and obesity. Further work, in which free will belief is experimentally manipulated (e.g., Vohs & Schooler, 2008), is needed for testing of the causality of relationships. However, some recent work suggests that such priming manipulations do not bring about robust effects (Nadelhoffer et al., 2019). Besides, the current study measured blame attribution to just one mental health illness (schizophrenia). Further work is needed to test if belief in free will is associated with blame attributions to individuals with other mental health conditions. Future research can extend the current findings by directly examining the possible link between belief in free will and the endorsement of negative stereotypes toward people with obesity and mental illness with attribution of blame as the mediator.

### Data Accessibility Statement

All the stimuli, presentation materials, participant data, and supplementary materials can be found on this paper's project page on the OSF. <https://osf.io/bwzfk/>.

### Supplemental Material

All supplementary materials are publically available at <https://osf.io/bwzfk/>.

### Ethics and Consent

Ethical approval was obtained before the collection of the survey responses (Ref.No: HE-BA2019/01).

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### Competing Interests

The author has no competing interests to declare.

### Author Contributions

- Conception and design: SPC
- Acquisition of data: SPC
- Analysis and interpretation of data: SPC
- Drafting the article and revising it critically for important intellectual content: SPC
- Final approval of the version to be published: SPC

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