

The Dark Triad of personality and folk intuitions about free will and moral responsibility

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ARTICLE INFO

Keywords:

Dark triad
Compatibilism
Moral responsibility
Determinism
Free will

ABSTRACT

The present research aimed to investigate the association between the Dark Triad of personality and philosophical intuitions regarding freedom and moral responsibility. In this study, 871 participants evaluated free will and moral responsibility for either a positive or a negative moral action performed by an agent in completely deterministic or indeterministic conditions. Subsequently, they completed a self-report scale to assess the Dark Triad of personality traits. The results revealed that psychopathy and, to a marginal extent, narcissism—in contrast to Machiavellianism—were significantly linked to lower agreement regarding the agents' possession of freedom and moral responsibility. This association remained significant even after statistically controlling for demographic factors, moral valence, and conditions. Discrepancies between components of the Dark Triad concerning folk intuitions about free will and moral responsibility, as well as their compatibility with determinism, are discussed.

1. Introduction

Over the past decade, scholars have closely examined the relationship between the Dark Triad of personality and moral values and moral decision-making patterns (see Conway & Gawronski, 2013; Djeriouat & Trémolière, 2014; Djeriouat & Trémolière, 2020; Karandikar, Kapoor, Fernandes, & Jonason, 2019; Zamora, Ungson, & Seidman, 2022). Notably, there is a general observation that the Dark Triad traits encourage selfish choices at the expense of those that favor the community (Jones & Paulhus, 2010). People with Dark Triad traits exhibit lower concerns for basic axiological and moral standards (Jonason, Strosser, Kroll, Duineveld, & Baruffi, 2015), particularly those regarding 'individualizing' moral foundations such as harm/care and fairness/reciprocity (see Karandikar et al., 2019). Other studies have found that psychopathic individuals and, to a lesser extent narcissists and Machiavellians, show less attunement to social desirability and moral norms (Kay & Saucier, 2020).

A fundamental approach to understanding the root causes of variations in moral judgment patterns linked to dark triad traits involves exploring the impact of philosophical determinism or indeterminism on intuitions about free will and moral responsibility. Examining how individuals comprehend and interpret these concepts can yield valuable insights into how an individual's perceived sense of agency and control

within specific situations shapes their moral judgments and behaviors.

Most investigations have primarily focused on the consequences of belief in free will or determinism on social behaviors. For example, numerous findings suggest that disbelief in free will correlates with a higher tendency towards passive and active cheating, as well as aggressive and antisocial behaviors (Carey & Paulhus, 2013; Stillman & Baumeister, 2010; Vohs & Schooler, 2008). However, it's important to note that these relationships have faced empirical scrutiny (Nadelhoffer et al., 2020; Nadelhoffer, Yin, & Graves, 2020), and the perceived strength of these associations might not be as substantial as initially thought. The present study diverges from this research trajectory by aiming to examine the interplay between aversive personality traits and individuals' philosophical intuitions about free will and moral responsibility in constrained and unconstrained conditions.

1.1. The debate on free will and moral responsibility

The free will debate revolves around the distinction between having an unrestricted capacity or having a conditional ability to perform alternative actions. In a broad sense, determinism suggests that individuals have a constrained capacity to act differently, indicating that they could have made alternate choices only if preceding events and circumstances had been different from what they are now. In contrast,

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<https://doi.org/10.1016/j.paid.2023.112457>

Received 28 May 2023; Received in revised form 3 October 2023; Accepted 15 October 2023

Available online 21 October 2023

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indeterminism proposes that people inherently possess the capability to make different choices without limitations. This means they can select options that differ from their actual decisions, even if all the previous factors leading up to their choice remain unchanged (Nadelhoffer, Yin, & Graves, 2020).

There is an ongoing philosophical debate concerning the compatibility of determinism with the notions of free will and moral responsibility (Nahmias, Morris, Nadelhoffer, & Turner, 2005). Compatibilist philosophers assert that recognizing the existence of individuals in a deterministic reality does not prevent us from attributing free will and moral responsibility to them. (Ayer, 1972; Strawson, 2008). Conversely, incompatibilist philosophers contend that if we accept the truth of determinism, it fundamentally precludes our ability to ascribe free will and moral responsibility (Kane, 1996).

One approach taken by philosophers to address this issue has been to examine the judgments of laypeople about these specific cases. The idea is that theoretical relevance of one conception or another would be strengthened if it dovetails with ordinary intuitions and prephilosophical beliefs of the majority of laypersons (See Nahmias et al., 2005). Unfortunately, numerous experimental endeavors have yielded mixed findings regarding whether the majority of laypersons lean towards compatibilism or incompatibilism (See Cova, Bertoux, Bourgeois-Gironde, & Dubois, 2012). According to Nichols and Knobe's performance error model (Nichols & Knobe, 2007), individuals tend to have an inherent inclination towards incompatibilism. Compatibilism is more likely to manifest when individuals engage with thought experiments that elicit strong emotional reactions. For instance, individuals are less inclined to attribute free will and moral responsibility to an agent who evades taxes in a purely deterministic universe, in contrast to an agent who commits a sexual assault in the same deterministic universe (Nichols & Knobe, 2007). In essence, if the emergence of compatibilism primarily results from the distorting influence of emotions, this raises questions about the inherent pretheoretic compatibilist beliefs of individuals.

Conversely, Nahmias and Murray's error theory (Nahmias & Murray, 2011) posits that individuals tend to hold pretheoretic compatibilist beliefs, and instances of incompatibilist responses in specific contexts arise from the mistaken conflation of determinism with ineluctability or inescapability. According to this perspective, actions are perceived as determined by factors that "bypass" conscious deliberation and agential capacities of the agent. This perspective suggests that individuals hold the belief that "an agent's decisions, desires, or beliefs make no difference to what they end up doing, and that such misconceptions then shape people's intuitions about the agent lacking free will and moral responsibility" (Nahmias & Murray, 2011, p. 191). From this viewpoint, apparent incompatibilist responses represent a form of inauthentic incompatibilism.

1.2. The Dark Triad and the attribution of free will and moral responsibility

To resolve conflicting interpretations of the data, some researchers have suggested including participants' dispositional affective characteristics in addition to varying scenario types (e.g., high- or low-affect scenarios, abstract or concrete scenarios) (Cova et al., 2012). The rationale behind this idea is that if free will and moral responsibility ascription has something to do with the affective context, then judgment patterns of people with affective deficits can be used as a standard of comparison to arbitrate between the aforementioned models. Cova et al. (2012) conducted a study involving patients with frontotemporal degeneration, a condition that impairs emotional functioning. Their findings revealed that these patients did not exhibit fewer compatibilist responses compared to the control group, regardless of whether the scenarios presented had high or low affective content. This result did not confirm the predictions of Nichols and Knobe's performance error model. In addition, Feltz and Cokely (2009, 2019) indicated that

individuals with higher levels of extraversion were more likely to provide compatibilist responses. According to the authors, extravert's social sensitivity and relative unwillingness to inhibit emotional reactions make them more supportive of free will and moral responsibility of others in a deterministic world. Finally, a meta-analysis indicated that the impact of emotions on moral intuition was statistically significant, albeit linked to a very small effect size (Feltz & Cova, 2014). Moreover, a growing body of evidence suggests that individuals tend to intuitively lean towards compatibilism rather than incompatibilism (Cova, 2023).

Examining the Dark Triad of personality in relation to folk intuitions about free will and moral responsibility presents the advantage of delving deeper into the issue beyond the shared core of callous-unemotional tendencies (Book et al., 2016; Furnham, Richards, & Paulhus, 2013), and providing insights from their underlying peculiarities. It can be argued that the components of the Dark Triad would be differently associated with inclination to see agents as free and morally responsible in deterministic contexts. For instance, Machiavellian individuals tend to be cynical and untrusting of others and are willing to exploit and deceive others to achieve their goals. By consciously choosing to manipulate or deceive others to achieve their own goals, individuals with high levels of Machiavellianism may express the need to view individuals as malleable and are therefore more likely to attribute agency and personal responsibility for others' actions, even in a deterministic world. On the other hand, psychopathy and narcissism, due to an inflated sense of self-importance, may be inclined to believe in their predetermined, inevitable essential superiority (and the inherent inferiority of others). While essentialism is not synonymous with determinism, viewing individuals as the products of their essential nature could imply that the origin of actions and choices is less contingent on agency.

An alternative perspective revolves around the concept that individuals with deficits in affective processing frequently disregard the notions of causation and personal responsibility in their moral assessments (Trémolière & Djeriouat, 2016). This inclination could potentially result in individuals perceiving agents as having a diminished sense of free will and moral accountability. If the impact of affective deficits holds true, we could reasonably expect to observe consistent patterns of outcomes across the various constituents of the Dark Triad. This is because these components collectively encompass a central core of callous-unemotional traits.

1.3. Current research

To date, no research has delved into the correlation between Dark Triad traits and intuitions concerning freedom and moral responsibility. In this study, participants engage in a thought experiment involving concrete morally good and morally bad actions within a deterministic world. The use of a concrete scenario aims to address the "bypassing" issue highlighted by Nahmias and Murray (2011), as discussed earlier. Subsequently, participants evaluate the degree to which the agent possesses freedom and moral responsibility. This thought experiment is juxtaposed with a control condition where the agent's actions occur in an indeterministic world. This choice is grounded in participants' perception that this universe closely mirrors our own (Nichols & Knobe, 2007). If an agent consistently appears to possess elevated levels of freedom and moral responsibility across both deterministic and indeterministic conditions, it implies that the perception of free will and moral responsibility can coexist with determinism.

This study provides an avenue to explore whether callous-unemotional traits are associated with weakened convictions about free will and moral responsibility, irrespective of the scenario's deterministic or non-deterministic nature. Moreover, the study investigates whether this inclination is specifically linked to distinct traits within the Dark Triad.

2. Methods

2.1. Participants

Nine hundred participants were initially recruited via the Prolific platform and were paid £7.20/h upon completion. Twenty-nine participants were discarded because they failed attention checks, leaving a final sample of eight hundred and seventy-one participants (46.68 % Female, 2.18 % Other) aging between 18 and 78 years ($Mean_{Age} = 38.125$; $SD_{Age} = 13.11$). The G*Power analysis (Faul, Erdfelder, Lang, & Buchner, 2007) for a F test with one between-subjects fixed factor (Four groups) and three covariates for a high-powered study ($1 - \beta = 0.95$) and a small-to-medium effect size ($f^2 = 0.20$) indicated an a priori sample size of 780.

2.2. Materials

2.2.1. Folk intuitions about free will and moral responsibility

To assess folk intuition about free will and moral responsibility, we administered a short scenario borrowed from Nahmias, Coates, and Kvaran (2007). All the scenarios are available in the supplementary materials.

2.2.1.1. Deterministic universe. In this scenario, determinism is illustrated as complete causation, where thoughts, desires, and plans are entirely shaped by the present circumstances and preceding events. These earlier events, in turn, are entirely influenced by events that occurred even earlier. Everything, encompassing even human decision-making, is entirely shaped by events originating from before our birth. A second paragraph was included, introducing participants to an agent who engages in morally commendable behavior (e.g., “killing his wife”) or virtuous conduct (e.g., “donating a substantial sum of money to an orphanage in his community”) within this deterministic universe, depending on the experimental conditions.

2.2.1.2. Indeterministic universe. In this scenario, the universe is portrayed as operating under causation, where earlier events will definitively lead to specific subsequent events, with the notable exception of human decision-making. Within this universe, it is stipulated that human decisions don't necessarily unfold as they do, even if all the factors leading up to that particular decision remain unchanged. As was done in the prior condition, a second paragraph was introduced, presenting participants with an agent who engages in morally condemnable (e.g., “killing his wife”) or virtuous (e.g., “donating a substantial sum to an orphanage in his community”) behavior, depending on the experimental conditions. Again, previous research indicates that participants perceive this type of universe as highly comparable to ours (Nichols & Knobe, 2007).

2.2.1.3. Index of free will and moral responsibility (FWM). Each scenario was immediately followed by three statements for which the participants were instructed to indicate their level of agreement using a Likert scale (1 = ‘Strongly agree’ to 4 = ‘Neutral’ to 7 = ‘Strongly Disagree’). Fabrice's decision to kill his wife (to donate to an orphanage) was “up to him”, “Fabrice decided to kill his wife (to donate to an orphanage) of his own free will”; “Fabrice is morally responsible (for the act of donating to an orphanage) for killing his wife”. Composite scores were calculated to obtain an index of free will and moral responsibility (FWM) where low scores indicated higher endorsement of free will and moral responsibility. FWM scores were calculated for each of the four between-subject conditions: Deterministic-morally bad (Cronbach's $\alpha = 0.82$); deterministic-morally good (Cronbach's $\alpha = 0.82$); indeterministic-morally bad (Cronbach's $\alpha = 0.84$); and the indeterministic-morally good (Cronbach's $\alpha = 0.79$).

2.2.2. The Dark Triad of personality

A 27-item questionnaire scaled to assess the Dark Triad of personality was administered (SD3: Jones & Paulhus, 2014). The participants were instructed to indicate, using a Likert scale ranging from 1 = ‘Disagree Strongly’ to 5 = ‘Agree Strongly’, the degree to which they agreed with the sentences. This questionnaire has three dimensions: psychopathy items ($N = 9$; for example, ‘I like to get revenge on authorities’); Narcissism items ($N = 9$; for example, ‘I hate being the center of attention’ (Reverse)); and Machiavellian items ($N = 9$; for example, ‘Whatever it takes, you must get the important people on your side’). Composite scores were created after recoding (Machiavellianism Cronbach's $\alpha = 0.83$; Psychopathy Cronbach's $\alpha = 0.79$; Narcissism Cronbach's $\alpha = 0.73$).

2.3. Procedure

After giving their full consent to participate in the study and answering demographic questions, the participants were randomly assigned to one of four between-subject conditions. Deterministic-morally bad condition ($N = 225$); the Deterministic-morally good condition ($N = 223$); the Indeterministic-morally bad condition ($N = 210$); the Indeterministic-morally good condition ($N = 213$). They finally completed the Dark Triad of personality questionnaire.

3. Results

3.1. Bivariate correlations

The results, as presented in Table 1, indicated that age exhibited a negative correlation, while gender displayed a positive correlation with the Dark Triad traits. Age was found to predict FWM scores in the indeterministic condition. Higher levels of psychopathy were associated with lower FWM scores across all four conditions. In contrast, Machiavellianism was found to be correlated with FWM scores solely in the indeterministic-morally good condition, whereas narcissism was predictive of FWM scores exclusively in the deterministic condition.

3.2. Multiple regression analyses

A multiple regression analysis (Table 2) predicting FWM scores while accounting for gender and age, morality, conditions, and shared variance among the Dark Triad traits, demonstrated that psychopathy emerged as an independent predictor. The association with narcissism displayed only marginal significance. Partial correlation between psychopathy and FWM is 0.12 (see Table 3). There is an independent prediction of the condition ($B = 0.51$, $SD = 0.08$, $t = 6.56$, $p < .001$) and the morality of the vignettes ($B = 0.62$, $SD = 0.07$, $t = 7.98$, $p < .001$) in the model without the interaction terms. Participants judged agents to possess more free will and moral responsibility in the indeterministic condition compared to the deterministic condition, and also greater free will and moral responsibility in the morally bad condition than in the morally good condition. Overall, people's responses fall below the midpoint, implying a general consensus that agents are accountable in all cases.

The interaction between psychopathy and the condition variable included in the model did not yield a significant interaction effect. This suggests that the effect of psychopathy is not significantly influenced by the condition variable. Higher (lower) levels of psychopathy are associated with less (more) agreement on free will and moral responsibility in both the determinism and the indeterminism conditions (see Fig. 1). Furthermore, similar models including an interaction term between Machiavellianism and condition ($B = 0.057$, $SD = 0.12$, $t = 0.49$, $p = .62$) and between Narcissism and condition ($B = 0.18$, $SD = 0.13$, $t = 1.45$, $p = .15$) were also found to be non-significant.

Table 1
Means, standard deviations, and Spearman's rho correlations in deterministic and indeterministic conditions.

	Morally good	Morally bad	Machiavellianism	Psychopathy	Narcissism	Age	Gender
1. Morally good	–	–					
2. Morally bad	–	–					
3. Machiavellianism	0.086 (0.137*)	0.078 (0.087)	–				
4. Psychopathy	0.202** (0.215**)	0.236*** (0.213**)	0.558 ***	–			
5. Narcissism	0.163* (0.108)	0.170* (0.090)	0.221 ***	0.329 ***	–		
6. Age	–0.088 (– 0.189 **)	–0.008 (–0.108)	–0.218 ***	–0.277 ***	–0.07 *	–	
7. Gender	0.015 (0.035)	0.058 (0.011)	0.170 ***	0.260 ***	0.084 *	–0.083 *	–

N = 871 for the Intercorrelation among the Dark Triad traits and demographic factors. Gender coded as 1 = Female and 2 = Male; * p < .05, ** p < .01, *** p < .001. Gender coded as 1 = Female and 2 = Male. Indeterministic correlations are represented within parentheses.

Table 2
Multiple regression analyses with Free will and Moral Responsibility as Criterion.

Model	Coefficients					Collinearity statistics	
	B	SE	Beta	t	p	Tolerance ^a	VIF ^a
(Intercept)	1.105	0.316		3.496	<0.001		
Gender	0.030	0.074	0.013	0.403	0.687	0.935	1.070
Age	–0.005	0.003	–0.057	–1.722	0.085	0.909	1.100
Machiavellianism	–0.121	0.070	–0.067	–1.735	0.083	0.675	1.481
Narcissism	0.123	0.066	0.064	1.877	0.061	0.878	1.139
Psychopathy	0.268	0.108	0.132	2.482	0.013	0.595	1.682
Moral (good)	0.621	0.078		8.003	<0.001		
Condition (determinism)	0.366	0.280		1.308	0.191		
Psychopathy * condition(determinism)	0.072	0.130		0.553	0.580		

Standardized coefficients and collinearity statistics were computed for continuous predictors. Gender coded as 1 = Female and 2 = Male.

Table 3
Partial and Semi-partial correlations between variables and Free will and moral Responsibility.

Model	Partial	Semi partial
Age	–0.059	–0.055
Gender	0.013	0.012
Condition	0.218	0.208
Moral	0.262	0.253
Narcissism	0.064	0.060
Psychopathy	0.123	0.116
Machiavellianism	–0.059	–0.055

4. Discussion

The aim of the present study was to investigate the association between the Dark Triad of personality and intuitions about free will and moral responsibility. The study is in line with the principle of experimental philosophy, which considers pre-reflective judgments about the fundamental philosophical concepts through imaginary experiments as significant sources of evidence (see Knobe et al., 2012). Moreover, this is in line with William James' traditional pragmatic outlook, which suggests that meta-philosophical beliefs may be grounded in personality (James, 2000), even though there is limited empirical evidence to support this view (Andow, 2022).

Overall, individuals tended to consider that people have free will and moral responsibility, more especially so when an agent is performing a bad action within a deterministic universe. In all moral scenarios, only a small fraction of participants held the belief that the agent lacked moral responsibility, exerted no control over their decision, and acted without their own free will.

Importantly, when examining the individual components of the Dark

Triad, the results revealed that psychopathy and, to a marginal extent, narcissism— but not Machiavellianism— were associated with a reduced attribution of free will and moral responsibility. Given that all components of the Dark Triad are linked by a shared callous-unemotional trait, one might have anticipated that all components would independently predict lower levels of free will and moral responsibility, especially in the high negative affect condition. However, only psychopathy yielded a positive association, suggesting that, regardless of the presence of deterministic information, individuals with high psychopathic traits tend to systematically downplay notions of agency, control, freedom, and moral accountability.

A plausible interpretation of the results is grounded in the “Norm Broken, then Agent Responsible” (NBAR) hypothesis (Mandelbaum & Ripley, 2012). According to this theoretical framework, individuals tend to assign moral responsibility to an agent when a norm has been violated. Previous research has established that perceptions of causation and the assignment of responsibility are influenced by violation of norms (Knobe & Fraser, 2008). This includes violations of prescriptive norms, often encountered in scenarios associated with negative affect, as well as deviations from statistical norms (Kominsky, Phillips, Gerstenberg, Lagnado, & Knobe, 2015). Consequently, if an individual displays reduced sensitivity to moral norm violations—a trait that could be anticipated in individuals with socially aversive tendencies—it is plausible that they would be more prone to absolving an agent from moral responsibility for their actions. This inclination could apply regardless of whether the actions are morally good or bad, or the specific conditions in which they unfold. Nonetheless, it is important to underscore that the NBAR theory does not account for the internal variations observed among the components of the Dark Triad traits.

Above, we have discussed the notion that a dispositional inclination to perceive individuals as adaptable and thus susceptible to

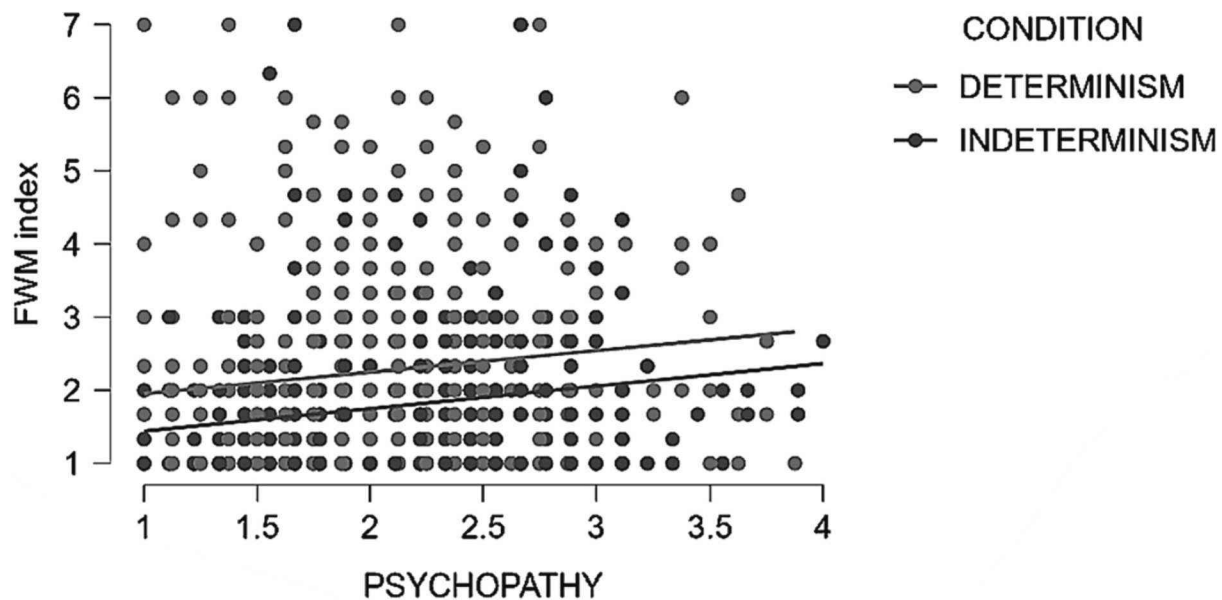


Fig. 1. Adjusted relationship between Psychopathy and Free Will and Moral Responsibility across conditions.

manipulation would align with a tendency to attribute agency and personal accountability to others, even within a deterministic framework. Essentially, it is not only emotions but also motivations and desires that may form the foundation for philosophical beliefs concerning free will and moral responsibility. The latter supports the concept of motivated judgments, which can occur when individuals' perspectives on ethical matters are shaped by personal preferences. Extensive evidence indicates that moral judgments are influenced by motivation and that individuals may adjust their moral standards as a means of rationalization (Haidt, 2001; Haidt, Koller, & Dias, 1993). It appears that individuals with higher Machiavellian traits exhibited a response pattern on the Free Will and Moral Responsibility (FWM) index similar to those with lower socially aversive traits. This finding suggests that Machiavellian individuals might be more inclined to hold intuitions that align with compatibilism. However, it is crucial to recognize that while the deterministic scenario aims to illustrate the concept that all facets of human behavior, including decision-making, are wholly shaped by preceding events, individuals without a philosophical background may not interpret determinism with the same level of nuance as professional philosophers. From a philosophical standpoint, the capacity of an agent within a deterministic universe to make different choices is contingent *only* upon variations in earlier conditions. This emphasizes that comprehension of determinism encompasses the conditional nature of having the capacity for alternative choices (see Nadelhoffer, Yin, & Graves, 2020). Therefore, it is crucial to exercise caution in the assessment of the claim that Machiavellian individuals lean more towards compatibilist-friendly intuitions compared to narcissistic and psychopathic individuals.

5. Limitations and future research

This study has several limitations. Although the study controlled for moral valence, it is imperative to replicate these findings using alternative vignettes in conjunction with self-report measures that assess participants' prior beliefs about free will and determinism. This replication would ensure that the components of determinism, as elucidated by professional philosophers, are effectively integrated into participants' judgments about freedom and moral responsibility. Another limitation concerns the symmetry of the moral scenarios across conditions. There is no evidence to suggest that the intensity of morally condemnable behavior (e.g., "killing his wife") is equivalent to the intensity of

virtuous behavior (e.g., "donating a substantial sum to an orphanage in his community"). A third limitation emerges from the study's reliance on a Western sample acquired through online data collection. This reliance narrows the representativeness of the sample and curtails the extent to which the findings can be generalized to diverse cultural contexts. This limitation is particularly noteworthy due to the potential influence of cultural backgrounds on the shaping of philosophical concepts and intuitions related to free will and determinism in distinct ways. Moreover, a fourth limitation pertains to the utilization of a concise Dark Triad scale. While well-suited for online administration, longer measures are preferable to ensure the internal validity of personality constructs and to yield a more meaningful and reliable interpretation of the collected data.

Subsequent research should endeavor to expand the scope of exploration concerning folk intuitions about freedom and moral responsibility by incorporating additional categories of personality traits. Broadening the investigation to encompass traits such as sadism, schizotypal tendencies, borderline personality, or paranoid personality would contribute to a more nuanced understanding of folk philosophical intuitions.

Ethical approval

All procedures performed in the study involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

CRedit authorship contribution statement

Hakim Djeriouat is the unique contributor to this work.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data are publicly available and can be retrieved on the OSF

platform: <https://osf.io/zup9s/>

Acknowledgments

This research was supported by a grant from Agence Nationale de la Recherche to Hakim Djeriouat (Projet-ANR-21-CE28-0012). The funding source had no role in the research.

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