Dark versus light personality types and moral choice

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Abstract

Dark personality traits have been linked to behaviors commonly understood as unethical, such as fraud, bribe-taking, and marital infidelity. Presumably, more "light" personality traits may be associated with lesser tendencies to be unethical, but many individuals also possess both light and dark trait characteristics. This paper reports results from a preregistered study of over 2400 participants who completed validated short-form personality instruments to assess dark and light personality trait measures—the dark tetrad and a light "triad" of 3 personality dimensions were measured. Furthermore, participants completed 3 tasks of interest that contribute to an understanding or one's ethics: a task assessing prosociality, a task that presents a monetary temptation to be dishonest, and a hypothetical moral dilemma task. The results overall support the hypotheses that dark personality traits predict lower levels of prosociality, higher likelihood of dishonesty, and an increased willingness to make immoral choices overall. Potential mechanisms and implications are examined.

Key Words: Ethics, dark personality, moral choice, experiments.

1. INTRO

A cluster of dark personality traits named the "dark tetrad" (psychopathy, narcissism, Machiavellianism, sadism) have attracted the interest of researchers interested in understanding personality and decision making. More recently, these have been put in direct contrast with a novel set of "light" personality traits. It is noteworthy that many individuals display dimensions of both dark and light personality traits, such that one's net "lightness" may hold predictive validity regarding decision making. Dark personality traits have been linked behaviors commonly understood as unethical, such as fraud, bribe-taking, and marital infidelity. Presumably, light personality traits would be negatively associated with unethical behaviors, but the balance of these traits in one's personality may be key towards a better understanding of ethical decision tendencies.

This paper reports results from a preregistered study of over 2400 participants who completed validated short-form personality instruments to assess dark and light personality trait measures—the dark tetrad and a light "triad" of 3 personality dimensions were measured. Additionally, participants completed 3 tasks of interest that contribute to an understanding or one's ethics. Participants were administered the incentivized Social Value Orientation (SVO: Murphy et al., 2011) task to identify tendencies towards prosociality, and they were also administered the Coin Flip task (Houser et al., 2012) that presents a monetary temptation for dishonesty. Finally, participants made hypothetical choices across several scenarios of the classic Trolley Dilemma (Foot, 1967), where we also elicited self-reported mood ratings as a way to examine mood response differences to this dilemma across personality types. While the Trolley Dilemma assesses views regarding hypothetical moral dilemmas, scenarios are devised such that immoral acts of omission and commission can be identified in one's hypothetical choices, and these have used elsewhere to predict consequential anti-social choice (Dickinson and Masclet, 2019).

2. BACKGROUND

Dark personality traits, either individually or as a group, have been linked to various dimensions of unethical behavior, including fraud, deception, theft, bribe-taking, cyber-bullying, cheating, shoplifting, and marital infidelity (Nathanson et al., 2006a, 2006b; Zhao et al., 2016; Azizli et al., 2016; Sevi et al., 2020; Brown et al., 2019). The dark traits have been further linked to antisocial

tendencies or selfish behaviors in the domains of sex, power and money (Lee et al., 2013). While unethical behaviors have also been connected with certain dimensions of other personality structure models, such as the Big 5 (Tupes and Christal, 1992; Goldberg, 1993) and the HEXACO (Lee and Ashton, 2004), the dark tetrad of personality traits remains of interest and is easily integrated with a contrasting "light triad" of personality traits (Kantianism, Humanism, and Faith in humanity) that capture more positive dimensions of personality (Kaufman et al., 2019).[1]

The dark side of personality links to unethical or morally questionable behavior due its connection to more primal behavioral tendencies. Dark traits have been found to correlate with spontaneous decision making (Čopková and Christenková, 2021), impulsivity and sensation-seeking (Crysel et al., 2013). Those with dark personality traits may also devalue collective interests and have a diminished concern for moral foundations (Jonason et al., 2015). As such, it is perhaps not surprising that researchers have found dark personality elements to be powerful antecedents to fraud behaviors (Harrison et al., 2018; Risenbilt and Commandeur, 2013), linked to overconfidence and risky corporate workplace behavior (O'Reilly and Hall, 2021; Olsen and Stekelberg, 2016), were positive predictors of antisocial online behavior (March and Marrington, 2021), and promote an increased likelihood of involvement in and ethical misconduct scandal (Van Scotter and Roglio, 2020). Such findings point to decision making in the moral domain that differs among those possessing dark personality characteristics.

Despite the strong intercorrelation between dark personality measures, the link between narcissism and immoral choice is less clear (see meta-analysis in Muris et al., 2017). For example, Zuo et al. (2016) found that narcissism may be *positively* associated with personal morality, at least among those with low self-esteem. Others have reported a link between Machiavellianism and psychopathy, but not narcissism, and low moral development and/or moral disengagement (Campbell et al., 2009; Egan et al., 2015). And, regarding cyberbullying, while some have connected all 4 dark traits to cyberbullying (Brown et al., 2019), others found that only psychopathy, sadism and Machiavellianism predicted this aversive behavior (Buckels et

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[1] While not directly addressing dark personality and moral choice, others have examined components of personality and decisions of some relevance here. For example, Gill and Rosokha (2020) show that trust-related personality characteristics (interacting via experience) predict increased cooperation in indefinitely repeated Prisoner Dilemma games, and Atanasov et al., (2023) find a self-centered personality cluster predicts willingness to commit strategic loan default (an immoral act of commission).

al., 2014). Narcissism is generally not viewed as poorly in society as psychopathy and Machiavellianism (Rauthman and Kolar, 2012), which somewhat distinguishes it from the other dark traits. To be clear, research has connected narcissism and unethical behavior (e.g., Van Scotter and Roglio, 2020; Rijsenbilt and Commandeur, 2013), but the link appears more conditional at times and in ways that lead to narcissism as being perceived as a bit "less dark" perhaps.

There is more limited research on the light triad personality measures and moral choice. Light traits have been shown to negatively correlate with selfishness and aggression, and positively correlate with (socially beneficial) Dictator game donations (Kaufman et al., 2019). Others have found the light triad measure predicted decreased attitudes towards romantic relationship infidelity attitudes (Sevi et al., 2020) or increased likelihood of prosocial online behaviors (March and Marrington, 2021). Some have highlighted potentially beneficial qualities among those with dark personality traits, such as increased creativity (Kapoor and Kaufman, 2022), an increased willingness to make utilitarian decisions in moral dilemma (Karandikar et al., 2019), or a desire to be moral to preserve an inflated self-concept. When dark traits are linked with creativity, it may be malevolent rather than benevolent creativity that is encouraged. Also, the connection between dark personality and utilitarianism is likely more tenuous than it may appear from the literature.[2] And, any positive association between narcissism and personal morality appears conditional, at best (Zuo et al., 2016).

It is also worth noting that mood regulation is often connected to dark personality traits. Psychopathy, in particular, has been linked to poorer emotion regulation strategies (Walker et al., 2022), and emotion regulation difficulties are typically connected with pathological personality traits, in general (Pollock, 2016). Others have found the psychopathy and Machiavellianism, but not narcissism, predict moral disengagement when examining the dark triad (Egan et al., 2015). Though the research appears more limited regarding sadism and emotion dysregulation, it seems there may not be a connection here (Zeigler-Hill and Vonk, 2015). Given the importance of emotional engagement and mood in understanding moral judgments and choice (Greene et al.,

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[2] A classic moral dilemma, such as the Trolley, dilemma asks if one is willing to flip the switch to save five individuals but one will be killed as a direct result of the act of slipping the switch. Thus, the choice confounds Utilitarianism with those who simply prefer to be directly responsible for a death(s) rather than passively stand while others may die. Our particular design of Trolley dilemmas will help separate a true Utilitarian from someone who may flip a switch for more morally dubious reasons.

2001), this present study is also interested in furthering our understanding of any differences in mood response to moral judgements among those with more light versus dark personality traits.

3. METHODS

The study was preregistered prior to data collection on the Open Science Framework (hypotheses, design, variables, analysis).[3] The preregistration included a larger set of hypotheses than what are covered in this paper, as some of these additional hypotheses were not direction related to the questions of personality measures (i.e., dark or light measures) and choices on the ethical or moral dilemma tasks of interest here. The addition hypotheses and the associated data analysis and results of these can be found in the online Supplemental File. Our focus here is on the question of dark or light personality and moral choice as measured by decisions in two incentivized tasks and a classic (hypothetical) moral dilemma. Here, the key elements to the study methodology are described.

The study was administered on the Prolific platform (Palan and Schitter, 2018; Peer et al., 2017) with a target sample size of 2000-2500 observations. This target was set, in large part, based on the likely proportions of more extreme "dark" types that appear to be rare (Kaufman et al., 2019), and the desire to obtain at least n=100 participants who possess an extreme personality measure of this sort. Participants were recruited from the populations of US and UK residents to participant in a study asking about personality traits, mood, personal or political preferences. It was also noted that participants would administered 3 short decision tasks, 2 or which generated a bonus payment that would depend on participant decisions. The bonus payment was in addition to the flat payment received by all participants who completed the short study.

After measurement of some demographic characteristics and assessing baseline mood, the following key personality instruments were administered: short-form versions of the dark triad personality measures (subclinical psychopathy, narcissism, Machiavellianism: Jones and Paulhus, 2014), subclinical sadism (Plouffe et al., 2017), and the light triad personality measures (Kantianism, faith in humanity, humanism: Kaufman et al., 2019). The survey also administered the short-form 10-item version of the Big-5 personality inventory (the TIPI: Gosling et al., 2003), a 6-item cognitive reflection task to assess thinking style (Primi et al., 2016), and a visual measure of time discounting (Hershfield et al., 2012). Along with these, the survey administered

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[3] The preregistration can be found at https://doi.org/10.17605/OSF.IO/A8QVD

the key decision tasks described next in more detail (SVO, Coin Flip task, and Trolley dilemmas). These tasks, along with the personality instruments, were randomized in order within the study. There was also a reassessment of mood measures following the Trolley dilemma choices that could be compared to the initial baseline mood measure given at the start of the study. In each instance mood was assessed along a 7-point scale across a set of positive (happy, enthusiastic, interested, determined, proud) and negative mood dimensions (irritated, distressed, ashamed, angry, sad).

3.1 Decision tasks

3.1.1 The Coin Flip task

The coin flip task we administered is a 10-flip version of the original task seen in the literature (Houser et al., 2012). Participants are asked to locate a coin and something to write with before progressing to the page that specifies exactly how outcomes are linked to payoffs. The main ask page then asks participants to flip the coin 10 times and report the number of HEADS flipped using a slider bar. The instructions further described that the payoff on the task, which contributes to their bonus payment for the study on Prolific, would be $0.15 for each HEADS reported. While seemingly small, the study in total took less than 15 minutes and the potential for an additional $1.50 payoff from the Coin Flip task would be more than their fixed pay for the short study. On the next survey page, participants were asked to input the specific outcome of each coin flip in order. This tasks therefore presents the participants with a monetary temptation to over-report the actual number of HEADS flipped (as well as possibly not flipping a coin at all, which can be assess through analysis of the response times on the task page). As has been noted in the literature, this task cannot identify cheaters at the individual level, but others have found that those who report more HEADS on this multi-flip Coin Flip task are also those who are more likely to have cheated in a separate task where the individual cheater is identifiable (Dickinson and Masclet, 2021).

3.1.2 The Social Value Orientation (SVO) task

Because ethical contexts often invoke the question of how others are affected, it is of interest to consider how different orientations towards prosociality are related to ethical decision making. Specifically, we administered the social value orientation (SVO) task (Murphy et al., 2011) to

document where one's preferences lies along a spectrum that considers both individualist and pro-social orientations (with competitive and altruistic preferences at the extremes). The task elicits preferences across a series of allocations that describe one's own payoff as compared to another's payoff in the allocation. In fact, one may consider a test of the relationship between one's SVO measure and outcomes in the ethical choice domain to be a test of the predictive validity of the SVO.[4]

3.1.3 The Trolley Dilemma task

We presented participants with a particular set of classic Trolley dilemma scenarios that would allow for the identification of more morally dubious behavior that can be done with the traditional classic Trolley dilemma (Foot, 1967). In the traditional Trolley dilemma, there 5 individuals who will be killed by a runaway train. Pulling a lever will divert the trolley to a side track and save these individuals but directly result in the death of another person on the side track. Thus, a confound in the Trolley dilemma not typically recognized is that a utilitarian choice (i.e., pull the lever to save a net 4 lives) is also the choice that makes one directly responsible for a death, rather than passively responsible. Because individuals tend to prefer *not* being directly responsible for someone's death, what seems to be the morally responsible choice to save the most lives is entangled in another moral challenge. While this is the very nature of the Trolley dilemma, it critically means that utilitarian choices are not so easily identified as choices made only for the greater social good.[5]

If the traditional dilemma saves 5 lives at the expense of 1 life, let us refer to this as a (5:1) Trolley dilemma. In our task, participants are asked to make the choice to pull the level or not for the following set of 6 Trolley dilemma scenarios: (5:1), (1:1), (5:0), (5:5), (2:1), (1:0). Figure 1 shows an example of the visual stimulus presented to the participant (in this case, the (1:0) dilemma. The usefulness of this particular set of Trolley dilemmas is that several choice types can be distinguished from one's responses. Trolley scenarios (5:1), (5:0), (2:1), and (1:0) are all dilemmas where it would be utilitarian to pull the lever. To *not* pull the level in scenario (5:0) and/or (1:0) would be particularly troubling, however. Here, there is no confound between

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[4] Murphy et al. (2011) document evidence of predictive validity in terms of SVO and cooperation in Prisoner's Dilemma games.

[5] Additional versions of the trolley dilemma may further alter the environment by make it more personal (i.e., "push" an individual rather than pull a lever, or identify the types of people who may live or die).

the utilitarian choice and the possibility that one would prefer direct responsibility over the death of another. Failure to choose "pull the lever" in scenario (5:0) or (1:0) can be considered an immoral act of omission. Additionally, there is no benefit in terms of lives saved/lost in choosing the pull the lever in Trolley scenarios (5:5) or (1:1). Since it has been found that most prefer to *not* be directly responsible for one's death (versus passively allowing it, see Descioli et al., 2011, on this point), we can consider it an immoral act of commission to pull the lever in either of these two Trolley dilemma scenarios. Thus, our particular set of Trolley dilemmas allows for a more precise and useful categorization of one's ethics in this particular hypothetical choice task.

4. HYPOTHESES

Preregistered hypotheses were developed from the existing literature (discussed above) linking dark personality traits, particularly sadism, psychopathy, and Machiavellianism, to various forms of unethical or immoral conduct. Dark personality traits have been previously linked to less prosocial behaviors in at least one incentivized decision task. The Background section above also noted the differences in emotion regulation most consistently found in those with Machiavellian or psychopathic traits, and may contribute to reported utilitarian choices in moral dilemmas. Finally, the particular link between sadism and pleasure from another's pain, we hypothesize a positive relationship between sadism and immoral acts of omission and commission in the Trolley dilemma. The following hypotheses related to this study were preregistered on the Open Science Framework prior to data collection.[6]

Hypothesis 1: Those with higher levels of dark personality traits will have lower levels of pro-sociality, as measured by the SVO (social value orientation measure).

Hypothesis 2: HEADS reported on the coin flip task will be positively (negatively) related to dark (light) personality traits.

Hypothesis 3: Dark personality traits, in particular Machiavellianism and psychopathy, will predict utilitarian choices.

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[6] The full set of hypotheses, which includes others not directly related to this paper, can be found in the preregistration document at https://doi.org/10.17605/OSF.IO/A8QVD. The hypotheses are listed here may be ordered differently than in the preregistration document for exposition purposes. Preregistered hypotheses not directly related to this paper are examined in the Online Supplement Information Appendix.

Hypothesis 4: Higher levels of psychopathy and Machiavellianism will predict reduced levels of baseline and post-Trolley task self-reported emotion, as well as less emotion-level change.

Hypothesis 5: Sadism will predict a greater likelihood of an immoral act of omission or commission (in the Trolley dilemma).

Hypothesis 6: committing immoral acts (choices) of omission or commission in the Trolley dilemma will predict the # HEADS reported in the Coin Flip task.

4.1. A simple framework for moral decision-making

While the testable hypotheses were generally derived from previous empirical findings, a general framework for decision making in the moral domain is useful as a way to help organize our understanding of underlying mechanisms. Researchers have noted the importance of social or personal norms in understanding choice (see, e.g., Bicchieri, 2005; Elster, 1989; Dubreuil and Grégoire, 2013), but these frameworks typical do not consider that personal norms may be considered immoral or unethical, in general. One example in the literature has suggested that dark personality types differ in subjective norms as a reason for unethical intentions (in this case, contract cheating: see Curtis et al., 2022). While there are a variety of available frameworks that penalize utility for deviations from some ideal behavior, consider the following utility functions (Masclet and Dickinson, 2019).

$$U(a) = b(a) - c(a) - v(a - \hat{a})$$

Here, utility for a particular behavior or action, *a*, is not only a function of benefits, $b(a)$, and costs $c(a)$, but there is also a disutility association with deviations from some target behavior, $\hat{a}$, via the term $v(a - \hat{a})$. A general specification such as this allows one to have any target behavior within her preferences, moral or immoral. The specification can be modified and one's target action may or may not be subject to social influences (see Masclet and Dickinson, 2019), but this framework is simple and can describe many of our hypotheses as stemming from the belief that dark personality types have different morals or personal norms reflected in $\hat{a}$.

5. RESULTS

In total, n=2565 participants completed the study via the Prolific platform (n=1261 residing in the UK, n=1304 residing in the US). Of these, n=2463 participants (n=1203 UK, n=1260 US) passed the attention checks within the survey. Age and sex were not elicited on the survey but

were downloaded from the available characteristics provided on all study participants from Prolific. Some participants did not have such data available (participants are allowed to withdraw consent to share those data with researchers), and so the sample available with age and sex was n=2413 (n=1178 UK, n=1235 US). We preregistered plans to analyze data from those who had no missing survey data, but we did not anticipate that some profile data may be incomplete from Prolific. In general, we present all results from estimations that do and do not include demographic characteristics as control variables as a robustness check.

Figure 2 shows the general tendencies in our sample regarding average measures of light and dark personality measures. Each dimension of the dark tetrad or light triad measures on a similar 1-5 scale, and so scores for each dimension were average across the light triad and dark tetrad measures. Differencing these two can be used to generate a measure of *relative* lightness or darkness of personality along these dimensions. These data in Figure 2 are similar to those reported in Kaufman et al., (2019) in that they show tendencies towards a *relatively* more light over dark personality type. Some nontrivial level of dark personality traits is not uncommon, even among those who are score higher on the light triad of personality measures. The shaded regions in Figure 2 highlight the approximate 10% tails of our sample in terms of *relatively* most light or dark, which highlight an overall greater variation in mix of dark versus light personality traits among those who in the relatively dark.

Hypothesis 1 test—Dark personality and prosociality

To examine the impact of dark personality traits on prosociality, the dependent variable is the continuous measure one's "*SVO angle*" as derived from the SVO task and as calculated in Murphy et al. (2011). Here, the higher one's *SVO angle*, the higher one's orientation towards prosociality. We estimated models that linear regression models with the *Dark Triad* or *Dark Tetrad* as key measure of dark personality tendencies. Simple regressions are compared next to regressions that control for age and sex, and that additionally control for Big-5 personality traits. Finally, though we did not preregister hypotheses relating light personality traits to prosociality, in the spirit of Hypothesis 1, we also estimated models that regressed *SVO Angle* on the *Light Triad* measure, as well as on the *NetLight* measure (i.e., *NetLight = Light Triad – Dark Tetrad*). The results are shown in Table 1, and they support Hypothesis 1.

Finally, in order to examine the individual dark versus light personality trait measures'
impact on prosociality, we regressed similar models to those in Table 1 with the key independent
variable being the specific dark or light personality trait. These models include the full set of
control variables, and we summarize the results by means of the coefficient plots shown in
Figure 3 (see online Appendix A for full estimation results). From these additional estimations,
we see that each dark trait predicts a significantly lower *SVO Angle*, and each light trait predicts
a significantly higher *SVO Angle*. In short, the data are consistent with the specific preregistered
Hypothesis 1. More generally, they also show that light personality traits, as well as the relative
lightness over darkness of one's personality, are associated with a more prosocial personality
orientation.[7]

Hypothesis 2 test—Coin Flip task and dark/light personality

Models similar to those used to evaluate Hypothesis 1 were used to examine Hypothesis 2, with
the difference being the dependent variable, *HEADS*. The results are reported in Table 2 and
show that the dark personality clusters are stronger predictors of higher reported *HEADS*
outcomes in the Coin Flip task than light personality trait clusters. Given the lack of a significant
coefficient estimate on the *Light Triad* coefficient estimate in model (5), we also conclude that
the significant of the *Net Light* coefficient estimate in model (6) is a result of the *HEADS* report
variance predicted by dark personality trait clusters. Because dark personality traits predicted an
increase, and the *NetLight* measure predicts a decrease, in *HEADS* reported these results offer
support for Hypothesis 2.

Figure 4 (see also Appendix Table A2) shows coefficient plot results from estimation
results for regressions of *HEADS* reports on the separate individual personality trait measures.
At the individual trait level, the dark personality traits have a more marginal significance in
predicting higher reported *HEADS* as compared to when the traits were considered in clusters
(i.e., the dark triad or tetrad), but overall these results support Hypothesis 2.

***Hypothesis 3 test—Dark personality traits, in particular Machiavellianism and
psychopathy, will predict utilitarian choices.***

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[7] Results are similar if restricting the analysis to those who are highest and lowest on the *NetLight* scale (i.e., the
shaded region of participants in Figure 2. Results are available on request.

Table 3 shows results of models regressing the proportion of utilitarian choices made in Trolley dilemma scenarios (1:0), (2:1), (5:0), and (5:1). We therefore score *Proportion Utilitarian Choices* equal to .0, .25, .50, .75, or 1.00. We excluded Trolley dilemma (5:5) and (1:1) from this analysis give the lack of a unique utilitarian choice. Though previous studies have reported data to indicate that dark personality traits may favor utilitarian choices in the Trolley dilemma (e.g., due to the emotion detachment that may help one make a difficult choice in such a dilemma), our data fail to support Hypothesis 3. In fact, it appears the light personality traits are found to predict utilitarian choices in our data, while dark personality traits do not predict the proportion of utilitarian choices. Because the set of 4 Trolley dilemmas analyzed included dilemmas that suffer the criticism of confounding utilitarianism with direct responsibility for a death (i.e., the typical (5:1) and (2:1) dilemmas), we also conducted similar analysis using just the (1:0) and (5:0) dilemmas that would most unambiguously identify utilitarian choice and our results were similar (these results are available on request). Separate regressions on specific individual dark or light personality traits similarly find no predictable relationship between the dark personality traits and utilitarian choice, while it is specifically the traits of "humanism" and "faith in humanity" that predict a higher proportion of utilitarian choices made (see online Appendix Table A3).

***Hypothesis 4 test:* Psychopathy and Machiavellianism will predict lower baseline mood and post-Trolley mood levels, as well as a lesser mood level change pre- to post-Trolley dilemma.**

The hypothesis preregistered focused on the specific dark traits of psychopathy and Machiavellianism, though we present estimation results that examine all 4 darks traits and their association with self-reported mood. Table 4 shown results from estimations where an average of baseline mood is regressed on dark personality traits in succession, with controls for the Big-5 traits, age, and sex. The mood variable is the average positive mood (averaged 7-point Likert-scale self-ratings of the following emotions: happy, enthusiastic, interested, determined, proud) or average negative mood (averaged 7-point Likert-scale self-ratings of the following emotions: irritated, distressed, ashamed, angry, sad) assessed at the beginning of the survey (prior to any

decision task administration). Each of the dark traits predicts an increased level of baseline

negative mood, while Narcissism also predicts increased levels of baseline positive mood.

Female and younger participant is associated with lesser baseline levels of positive mood, while

younger participants also predict higher baseline negative mood. In general, aside from the Big-

5 trait of *openness*, all other Big-5 traits predict higher positive and lower negative baseline

mood. Results in Table 5 show similar estimations with the dependent mood variables being

those elicited immediately after completing the Trolley dilemma task.

      Because some variables are found to predict an increase in positive or negative mood

both before and after the Trolley task, we also constructed a variable measuring the change in

one's net *positive-negative* mood reports from baseline to post-Trolley task. This variable, *Net

Positive mood change*, is used as the dependent variable in a series of similar regressions, where

we also considered the light-triad personal traits as regressors.   These results are shown in full in

the online Appendix Table A4, but we summarize the key personality trait effects also in Figure

5 (which also summarize the key estimated dark trait effects from Tables 4 and 5). Overall, our

data fail to support Hypothesis 4, which stated that psychopathy and Machiavellianism would

predict lower baseline and post-Trolley mood, as well as a lesser mood change after completing

the Trolley task. However, the results suggest mood dysregulation is perhaps the more potent

variable to consider. The significant estimated mood findings indicate that psychopathy and

Machiavellianism stand out in that they predict a unique (and, perhaps disturbing) mood shift

toward increased positive and reduced negative mood after going through the hypothetical life-

and-death moral dilemma task.[8]

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[8] These results are similar if using the Dark or Light cluster measures in place of individual trait measures to assess the impact of personality trait. That is, higher scores on the Dark Tetrad predict an increase in one's net positive mood change, and higher scores on the Light Triad predicts a reduction in one's net positive mood after completing the Trolley task (as does one's *NetLight* personality score). In short, more light personality types have a

Hypothesis 5 test: **Sadism will predict a greater likelihood of an immoral act of omission or commission (in the Trolley dilemma).**

The key outcome of what we defined as immorality in the Trolley dilemma is that individuals would be either unnecessarily killed (immoral act of omission) or killed preferentially by one's action rather than inaction (immoral act of commission). As such, these acts of (hypothetical) immorality seem most linked to the trait of sadism among the dark traits. Hypothesis 5 is tested in a serious of linear probability regressions that defined the dependent variable as an immorality indicator variable.[9] That is, we set *Immoral omission* =1 if the participant chose the immoral action to not "pull the lever" in either or both of the Trolley dilemmas (5:0) and (1:0)). *Immoral commission* was set equal to 1 if the participant chose the immoral action to actively pull the lever in either or both of the Trolley dilemmas (5:5) and (1:1). We show in Figure 6 the coefficient plots summary of the key estimated effects of sadism on the likelihood of committing an immoral act. Models were run with and without control variables for sex, age, and the Big-5 personality traits, and we also include comparison results that use the *NetLight* personality measure in place of the *sadism* personality control. The results support Hypothesis 5 in that those with high levels of the sadism trait are significantly more likely to commit an immoral act of omission and commission in the Trolley dilemma.

Though the preregistered hypothesis specified sadism as the key personality trait of interest, we also estimated similar models examining each of the individual dark or light personality trait effects on Trolley immorality. Each of the 4 dark personality traits positively predicted the likelihood of choosing to pull the lever in the Trolley (1:1) and/or (5:5) dilemmas (i.e., immoral act of commission), while light personality traits were statistically insignificant in these estimations. Regarding choices to *not* pull the level in Trolley (1:0) and/or (5:0) dilemma, psychopathy and sadism predicted an increased likelihood, while humanism and faith in humanity predicted a reduced likelihood, of choosing this immoral act of omission. These results are reported in full in the online Appendix Tables A5 and A6.

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more negative change in their self-reported mood after completing this task, while mood turns more positive after this task for those with more dark personalities (and those effects seem driven largely by psychopathy and Machiavellianism scores).

[9] Virtually identical results in sign and significance are found using nonlinear Probit estimations, and so we report linear probability regression results for simplicity and ease of interpretation.

Hypothesis 6 test: **Immoral acts (choices) of omission or commission in the Trolley dilemma will predict the # HEADS reported in the Coin Flip task.**

The essence of Hypothesis 6 is to test whether presumed immorality in the hypothetical choice dilemma predicts the likelihood of dishonesty in the consequential task. For these regressions, the indicator variable for an immoral act of omission or commission is used as an independent variable to predict the dependent variables *HEADS* reported in the Coin Flip task. Figure 7 shows the summary of these estimations results for models that varied in the set of control variables. The data fail to support Hypothesis 6 as we find no statistically significant impact of one's Trolley immorality choice on predicting *HEADS* reported. The full model results are shown in the online Appendix Tables A7, which highlight that main Coin Flip task results in Table 2 that younger participants and those with higher measures of *NetLight* predict higher *HEADS* reports.

6. ADDITIONAL EXPLORATORY ANALYSIS—Fake Flippers

Response time (RT) data allowed for additional exploratory analysis of the coin flip task data. Specifically, Dickinson and McEvoy (2021) reported RT data from the same computer-interfaced coin flip we administered: flip a coin 10 times and report the number of heads flipped for a monetary payment based on the number of HEADS (but not TAILS) reported. Of interest for the present paper is that they also conducted the task in a physical lab setting where coin flip outcomes were still private but a physical coin had been provided to each participant. In this way, they were able to observe the actual physical act of flipping coins as requested, the results of which would be entered into the same computerized survey interface as was used for the online version of the task administered remotely. These task similarities are important, because they allow for a comparison of the RT distributions of the 10-flip task done remotely versus in-lab where the experimenters could document that the requested physical flipping of the coin was done. For the identical 10-flip task that was administered here, Dickinson and McEvoy (2021) report from a sample of n=192 in-lab participants that the 1% cutoff of fastest RTs for the in-lab sample was about 43 seconds. They proceeded to then score an indicator *Fake Flipper* = 1 for all participants in the online administration of the same task that had RT < 45 seconds. Their reasoning was that an RT < 45 seconds is highly statistically unlikely if one is actually flipping a

coin as asked, because in the benchmark in-lab RT distribution only about 1% of participants had that fast of an actual coin flip task RT.[10]

Following this approach (Dickinson and McEvoy, 2021), we scored *Fake Flipper* indicator variable in our data set for all participants who had RT < 45 for the coin flip task. To be clear, identifying a *Fake Flipper* does not necessarily imply a dishonestly high number of Heads reported on the task, but it identifies another dimension of shirking or cutting corners that may be of interest in other real world settings (see Discussion below). Upon scoring the *Fake Flipper* variable for our data set, we then estimated a series of Probit models to predict *Fake Flipper* as a function of each of the key dark and light personality traits. These models all included the set of control measures used in our other analyses reported above. We summarize the findings in Figure 8 via coefficient plots of the estimated personality trait effects (full results are shown in Appendix A, Table A9). Dark personality traits, in particular psychopathy and sadism, predict a greater likelihood of fake coin flipping, while the light trait, Kantianism, (and one's relative light-over-dark personality composition, *NetLight*) predicts a reduced likelihood of fake flipping.[11] In fact, the impact of individual personality traits on predicting a less egregious type of misbehavior (fake flipping) is more clear than the link found between individual traits and HEADS reports. Finally, it is worth noting that regressions similar to those reported in our test of H6 (i.e., does Trolley immorality predict consequential HEADS reports) finds that, though making immoral acts of commission choices in the hypothetical Trolley dilemma does not predict a significant increase in one's coinflip task HEADS reports, such Trolley immorality *does* predict a greater likelihood of being a fake coin flipper (*p* < .05, see Appendix Figure A1 coefficient plots).

7. DISCUSSION

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[10] As noted in Dickinson and McEvoy (2021), it is possible that some online participants resorted to virtual coin flippers for this task. However, though this may somewhat bias the RT data if virtual coin flippers were commonplace, it is still within the spirit of our aim to identify participants who did not complete the task as requested (i.e., they cut corners in one way or the other).

[11] Instrumental variables estimations highlight that, though fake flipping does not equate to cheating for monetary gain regarding the actual HEADS report given, the variation in *Fake Flipper* (or Coin Flip RT, in general) predicted by one's *NetLight* personality measure predicts a significant increase in one's HEADS report. That is, if we use *NetLight* as the exogenous instrument for one's coin flip RT, a quicker RT as predicted by *NetLight* then predicts significantly more HEADS reported. These results are available on request.

The data supported some of our preregistered hypotheses (H1, H2, and H5), failed to support others (H3 and H6), and revealed somewhat related support for H4 in the sense of highlighting that dark personality traits may differ in their mood response to the Trolley dilemma task. The overall theme of our results suggests that dark personality traits are related to lower prosocial tendencies and an increased likelihood of making choices likely considered immoral in both hypothetical and consequential decision environments. In addition to our preregistered hypotheses, exploratory results highlighted that dark personality traits also predict a tendency to shirk on a task request and fake one's effort, as evidenced by an increase in likelihood of being a *Fake Flipper* on the coin flip task. Though our data identify a strong correlation between quick coin flip task response times (i.e., fake flipping) and HEADS reports, some may engage in fake effort to simply economize on time without intent to increase earnings dishonestly (e.g., just submit a report of HEADS=5, which is the clear average number of HEAD one would flip in 10 flips, but do not bother with actually flipping a coin). Such fake effort should nonetheless be of interest. Imagine, for example, an audit task example. If most audit do *not* reveal dishonest book-keeping, then the average outcome of a laborious audit would be to sign off that the audit was passed with no issues. It may therefore be tempting to simply shirk on the task and cut corners if requested to perform an audit that typically turns up nothing of concern. Shirking on such a high-stakes task may not be comparable to our small-stakes coin flip task, but the underlying principle is similar.

Others have reported an increase in utilitarian choices by individuals possessing dark personality traits (e.g., Bartels and Pizarro, 2011), our results do not support this hypothesis. To our knowledge all previous studies reporting this relationship between dark traits and utilitarianism do so using Trolley or similar moral dilemma environments where there is a confound between the utilitarian choice and direct responsibility for others' deaths. We removed this confound in a subset of our Trolley dilemmas, but even if we restrict our analysis to dilemma that contain this confound, our results do not support previous findings regarding dark personality traits and Utilitarian choice. Rather our data show robust evidence that those with more light personality traits are more likely to make the utilitarian choice. This is true even though the more light personality types experience a net-worsening of their mood after completing the Trolley dilemma task

How mood relates to dark personality traits in these hypothetical moral dilemmas is curious. Our specific preregistered mood hypothesis was not supported, but exploratory analysis identified a stark difference between the mood shift reported during before and after the administration of the Trolley dilemma task for those more light versus dark in their personality traits. Whether this mood shift could explain choices is an interesting one. Exploratory analysis did not find a significant direct impact of one's "Trolley mood shift" on the likelihood of *Immoral omission* or *Immoral commission* choices. However, instrumental variables analysis showed increases in post-Trolley positive mood explained by *lower* values of *NetLight* (i.e., higher values of *NetDark*) significantly predicted a greater likelihood of *Immoral Omission* choices ($p = .02$), *Immoral Commission* choices ($p < .01$), and a greater number of *HEADS* ($p < .01$) (see Appendix Table A8 for full results). Though our main hypothesis test of H6 did not support the direct connection between hypothetical Trolley dilemma choices and consequential choices in the Coin Flip task, these exploratory results suggest further research is needed to identify the extent to which extent there is a link between mood response, hypothetical moral dilemma choices, and consequential choices in the ethical domain. This is important given past research reporting that choices in hypothetical dilemmas do not predict in (somewhat) similar consequential versions of the dilemma (Bosyn et al., 2018), but yet others have found they may be predictive of antisocial choice in other consequential environments (Dickinson and Masclet, 2019).

Of course, important limitations of this study should be recognized. If self-report measures are to be used to evaluate personality for such purposes as making judgments regarding one's ethics, then participants may wish to respond in socially acceptable or desirable ways bias (Zerbe and Paulhus, 1987). One may respond to hypothetical dilemma questions or make choices in consequential temptation tasks in a way that is deemed to align more with acceptable norms. While we did not take into account or attempt to measure any social desirability bias (e.g., see Stöber, 2001), the anonymous nature of the online study administered through a 3rd party platform likely limits the concern of such social desirability bias in the data. To the extent that it may exist, its presence would imply that our evidence of dishonest or immoral choice tendencies are likely underestimated. If dark personality types are less impacted than more light personality types by the desire to submit responses deemed socially acceptable, but no more likely to actually make dishonest choices, then our results could overestimate the extent to which dark

traits are actually responsible for more dishonest behaviors. Also, a larger literature has addressed the concern over use of personality measures in organizations and the tendency for candidates to inflate positive aspects of personality in such contexts (see Birkeland at el., 2006). Strategies to reduce job applicant distortion on personality tests may include more indirect assessment of personality, which may favor nonstandard outcome measures such as response time analysis, or the use of hypothetical dilemma choice assessments over more direct personality tests

This study did not set out to compare ethical behaviors across cultures, and so no hypotheses were preregistered to compare results in the US and UK subsamples of our data. However, if one conducts our analysis on the separately subsamples of participants from each location (what a robust sample size of over n=1200 per location), then we find that some notable differences are estimated. The significant results found to support H1, H2, and H5 are due to the US subsample of participants. However, the surprising exploratory finding that showed an increase in positive mood after completing the Trolley task was only statistically significant in the UK subsample of participants. These findings may suggest an interesting influence of one's culture or societal norms on the link between personality and behavior. While this was not the focus of the present study, it would seem to merit more systematic investigation going forward.

The cross-sectional nature of the study implies our results are more indicative of correlations or associations, as opposed to causation. This is a criticism common to much of the research in this area, as any proper experimental design would seek to randomly assign, or manipulate in a within-subjects manner, the key predictor of interest: personality type. We therefore hope that our study will be an important contribution to a literature that can identify systematic relationships between personality and moral choice using many complementary approaches.

Finally, the present paper only explored a limited set of decision environments that do not capture the full breadth of how unethical behaviors may manifest, and they do not examine ethics in less anonymous situations. For example, those influenced by one's immoral choices may be more or less socially distant with the decision maker, or the choice itself may be more or less observable by others. Researchers have articulated a difference between social norms versus moral (personal) norms (see Bicchieri, 2005; Elster, 1989; Dubreuil and Grégoire, 2013), and the present research did not seek to identify or measures participants' perceptions of such norms.

Are differences in ethical choice by personality type due to key differences in views of social or moral norms, or are they due to differences in concern for such norms. Some recent research has suggested that dark personality types differ in subjective norms as a reason for unethical intentions (in this case, contract cheating: see Curtis et al., (2022). This would seem another fruitful area where additional research is needed. While these (and likely other) limitations point to the need for additional work, the present paper hopes to have contributed to our understanding of how dark versus light personality traits may be associated with socially undesirable behaviors or choices in the face of moral dilemmas.

FIGURE 1: Trolley Dilemma visual stimulus used in survey
 (1:0) dilemma—pulling lever saves 1 life on main track and no one is killed on the side track
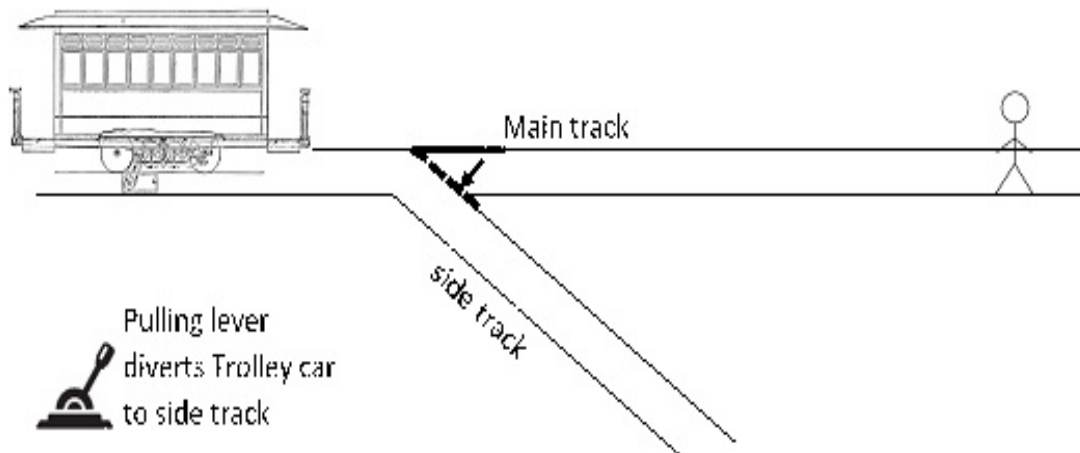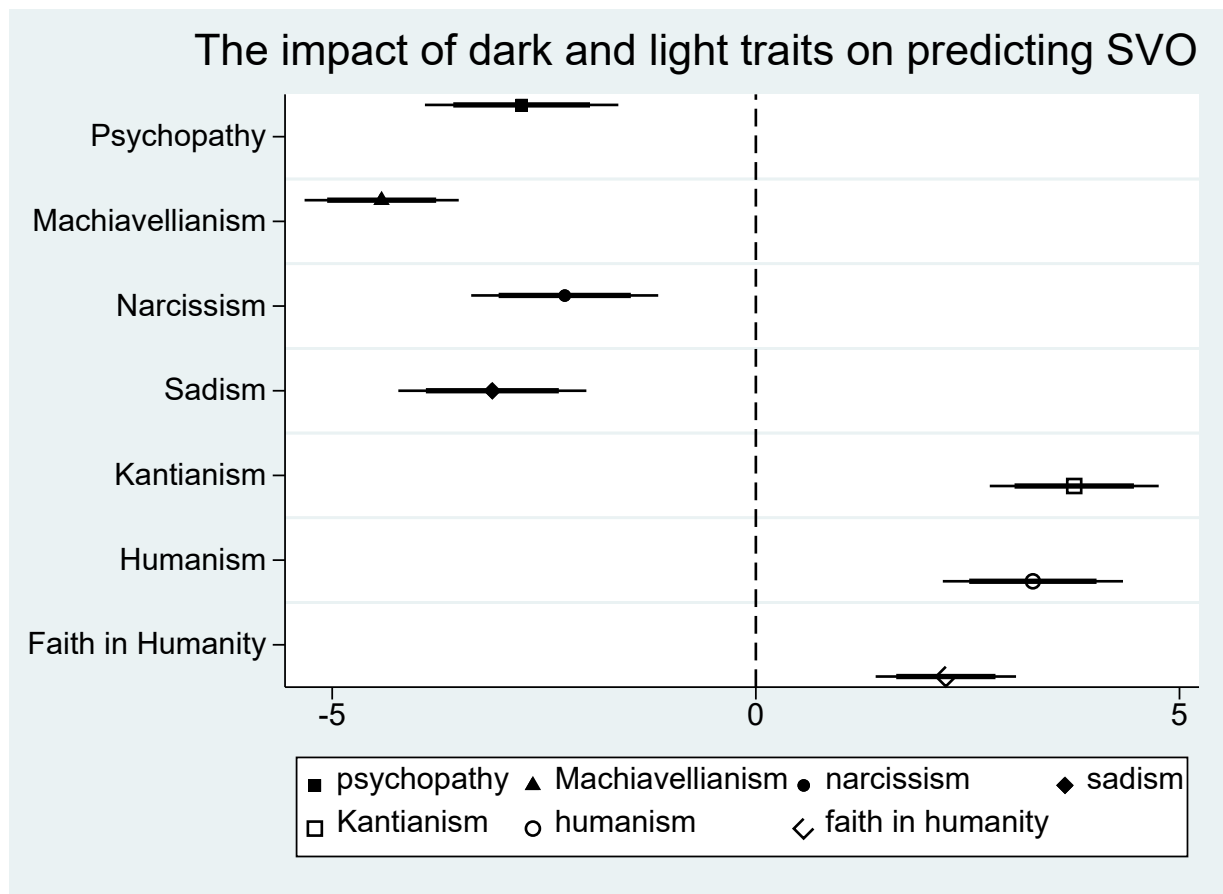

FIGURE 2: Personality Traits in study sample
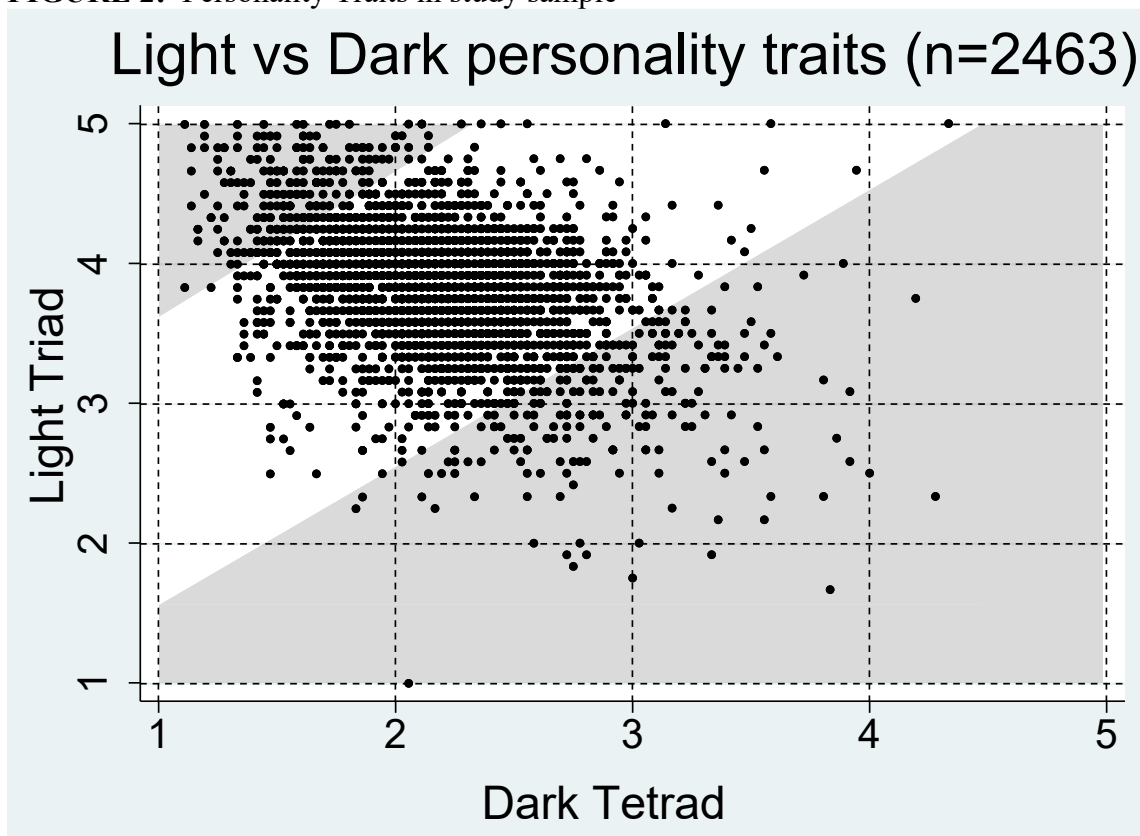
Notes: Shaded regions show the approximate cutoff for the upper and lower 10% of participants in terms of their Light-Dark average traits (NetLight > 2.65, n=234: NetLight < .55, n=245)

FIGURE 3: H1 coefficient plots—personality traits and SVO.

The impact of dark and light traits on predicting SVO

Notes: Bars show the 99% (thin bars) and 95% (thicker bars) confidence interval for a 1-tailed test (preregistered hypotheses) on the coefficient estimate of the personality trait's effect on *SVO Angle*. Models estimated include controls for age, sex, and the Big 5 traits.

FIGURE 4: H2 coefficient plots—personality traits and Coin Flip task.
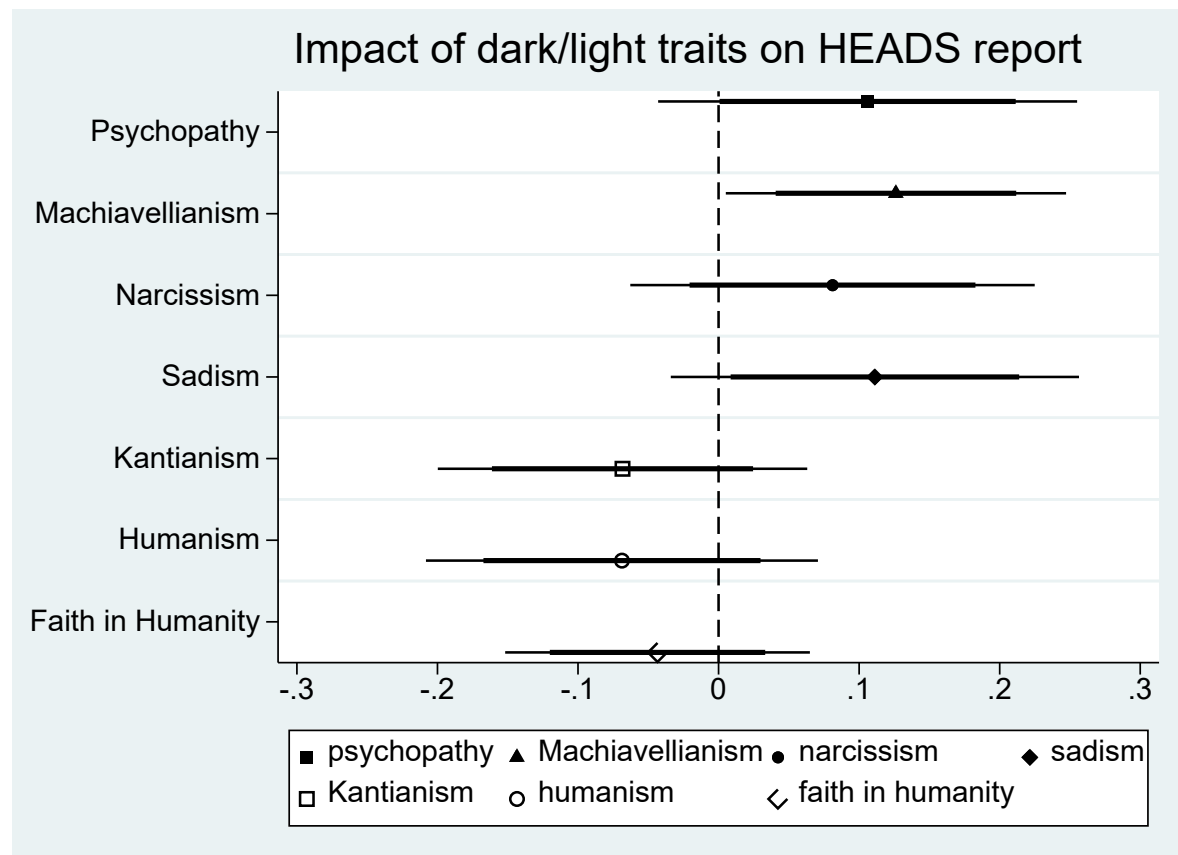
Impact of dark/light traits on HEADS report

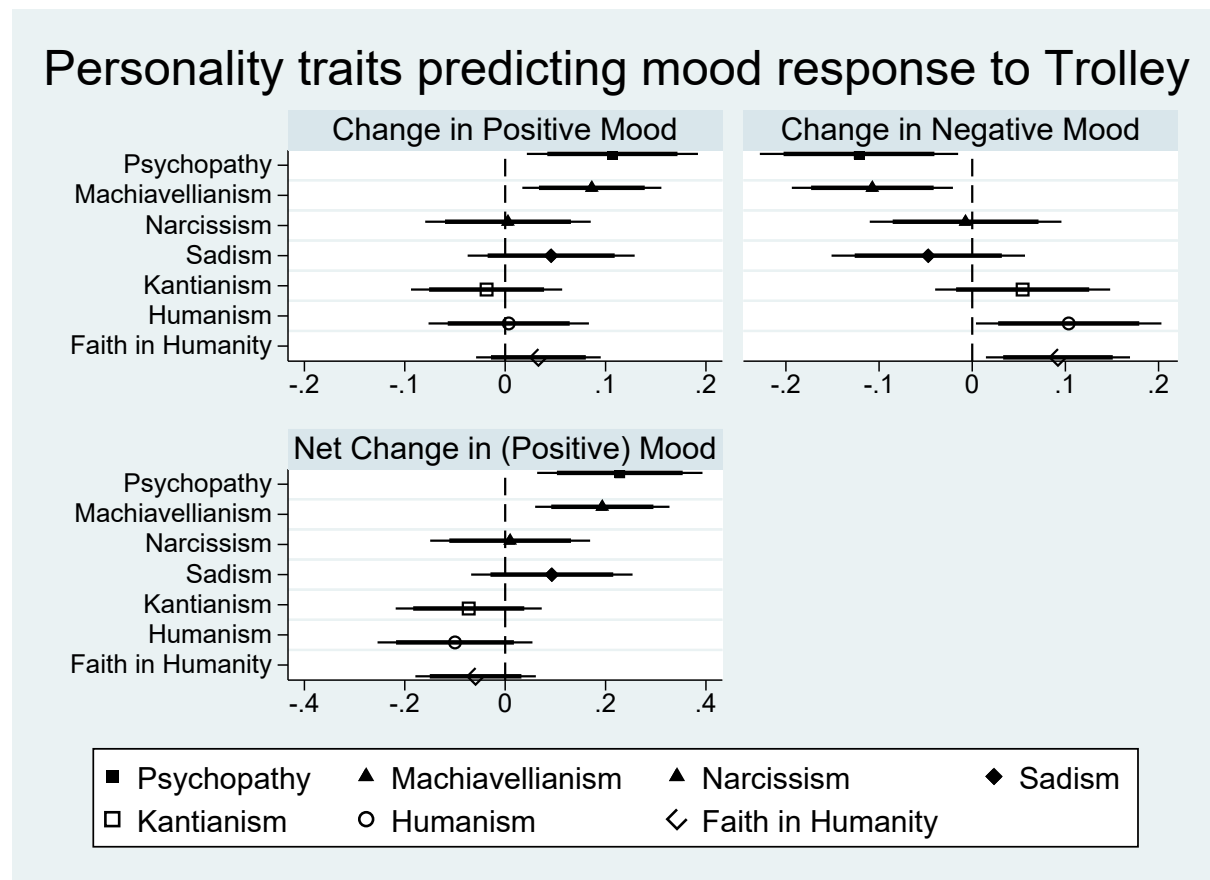**Notes:** Bars show the 99% (thin bars) and 95% (thicker bars) confidence interval for a 1-tailed test (preregistered hypotheses) on the coefficient estimate of the personality trait's effect on *HEADS* reported in the Coin Flip task. Models estimated include controls for age, sex, and the Big 5 traits.

FIGURE 5: Differential mood response to completing the Trolley dilemma

Notes: Bars show the 99% (thin bars) and 95% (thicker bars) confidence interval for the 2-tailed test on the coefficient estimate of the personality trait's effect on one's self-reported mood change from baseline to immediately after the Trolley dilemma task. Two-tailed tests confidence intervals are shown in this instance given the results fail to support Hypothesis 4, and so we can assess the opposite-hypothesized result's significance at standard levels. Models estimated include controls for age, sex, and the Big 5 traits. Full results for the dark traits effects for the two upper panels are those in Tables 4 and 5. See Appendix table A4 for full estimation results of the Net Change in (Positive) Mood in the bottom panel.

FIGURE 6: H5--Sadism (dark personality) effects on Trolley immorality
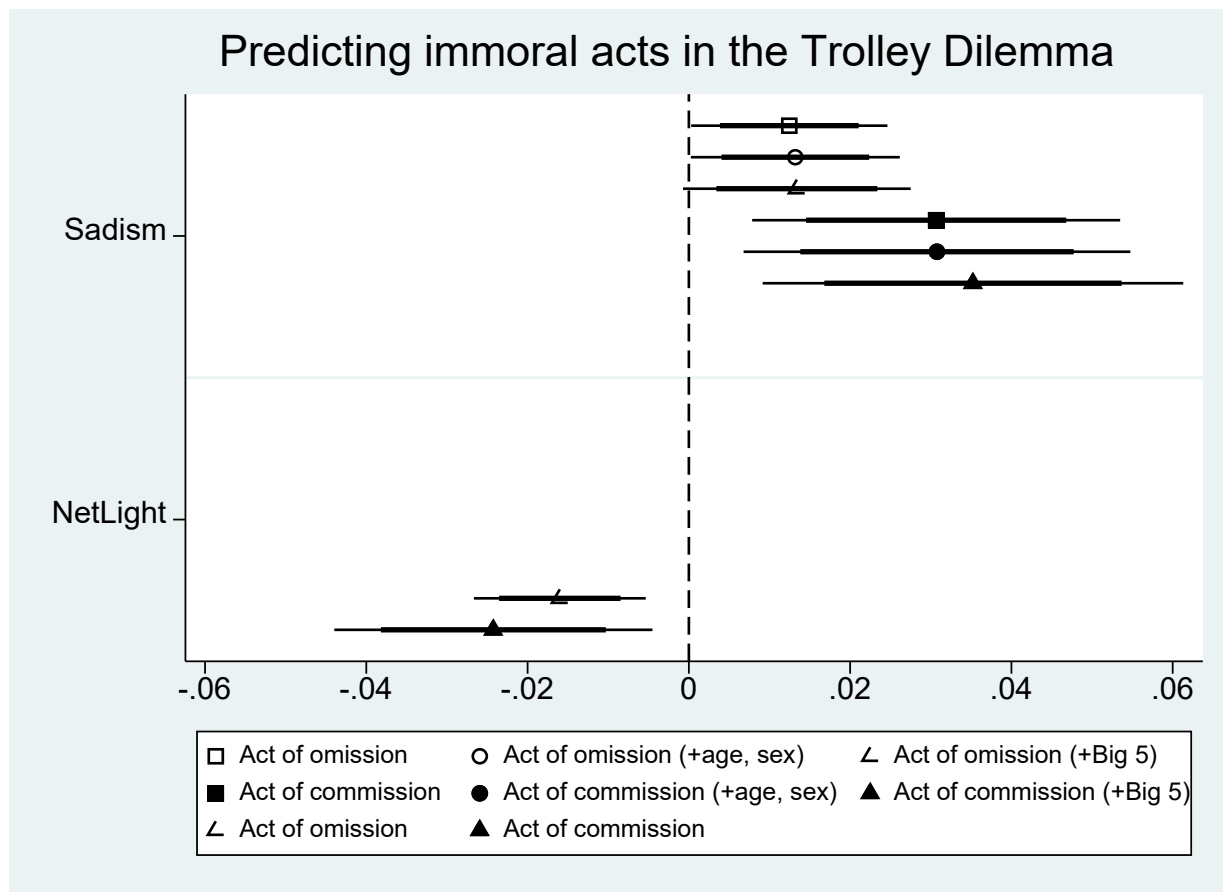
Predicting immoral acts in the Trolley Dilemma

Legend:
- □ Act of omission
- ○ Act of omission (+age, sex)
- ∠ Act of omission (+Big 5)
- ■ Act of commission
- ● Act of commission (+age, sex)
- ▲ Act of commission (+Big 5)
- ∠ Act of omission
- ▲ Act of commission

Notes: Bars show the 99% (thin bars) and 95% (thicker bars) confidence interval for the preregistered 1-tailed test on the coefficient estimate of the personality trait's effect on the likelihood of choosing an immoral act of omission or commission. See Appendix Tables A5 and A6 for analysis using individual-specific personality traits as regressors.

FIGURE 7: H6 test—Trolley immorality as predictor of HEADS reports (Coin Flip task)

(Dep variable=HEADS: Independent variable is indicator for those who made an immoral act of omission or commission choice in the Trolley dilemma task)
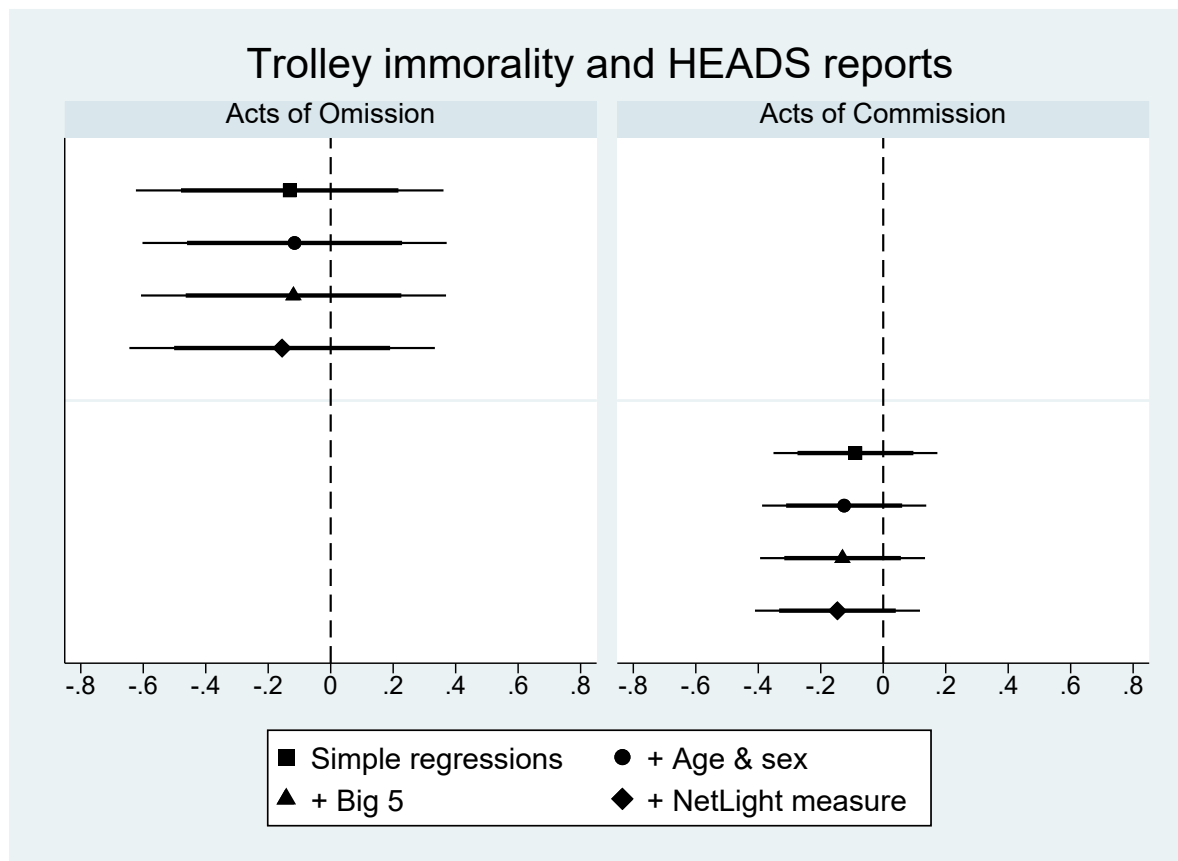
Notes: Bars show the 99% (thin bars) and 95% (thicker bars) confidence interval for the preregistered 2-tailed test on the coefficient estimate (2-tailed CI shown given point estimates are opposite the preregistered effect). See Appendix Table A7 for full estimation results.

FIGURE 8: Exploratory Analysis: Predicting Fake Effort (coin flip task)

The impact of dark and light traits on predicting Fake Flippers
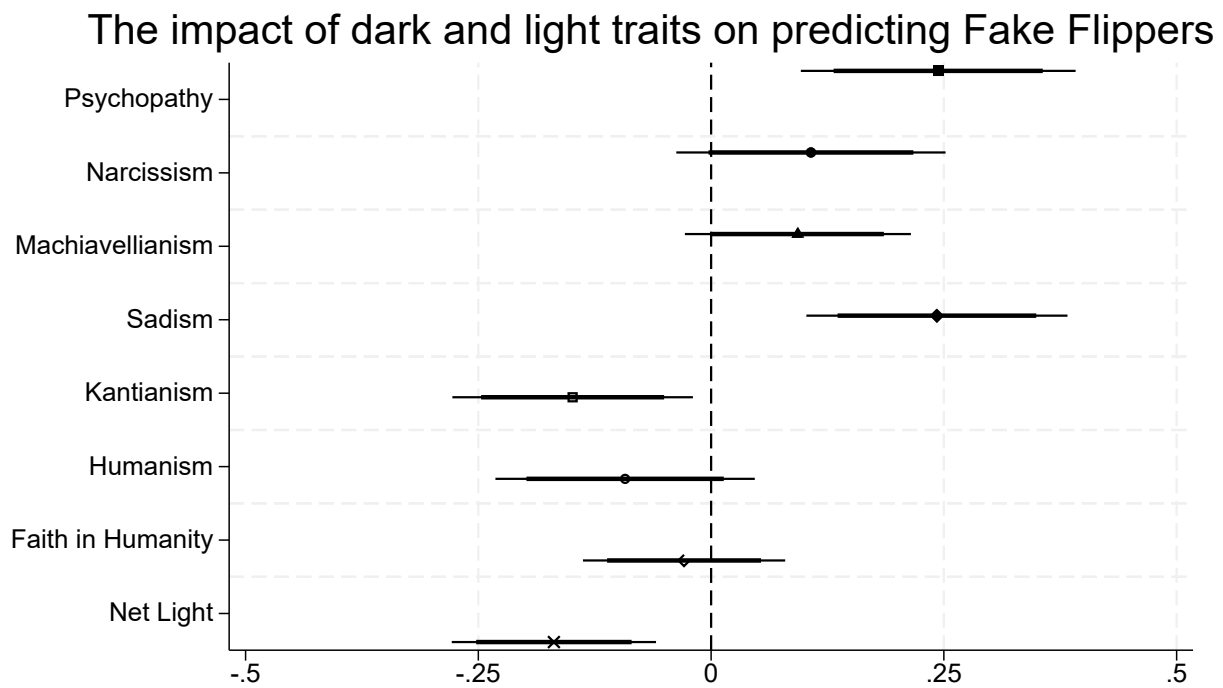
Notes: Bars show the 99% (thin bars) and 95% (thicker bars) confidence interval for a 2-tailed test (exploratory analysis) on the coefficient estimate of the personality trait's effect on *Fake Flipper*. Nonlinear Probit models estimated include controls for age, sex, and the Big 5 traits.

TABLE 1: Hypothesis 1 tests—Dark traits and *SVO Angle*

Dependent Variable = *SVO Angle*	(1) Coef (st. error)	(2) Coef (st. error)	(3) Coef (st. error)	(4) Coef (st. error)	(5) Coef (st. error)	(6) Coef (st. error)
Independent Variable						
constant	36.20 (1.23)**	35.15 (1.68)**	31.05 (2.40)**	32.07 (2.46)**	-28 (2.14)	16.29 (1.62)**
Dark Triad	-5.99 (.50)**	-5.61 (.53)**	-5.59 (.58)**	---	---	---
Dark Tetrad	---	---	---	-5.94 (.61)**	---	---
Light Triad	---	---	---	--	5.64 (.56)**	---
NetLight	---	---	---	--	---	4.38 (.35)**
Age	---	.003 (.02)	.008 (.02)	.004 (.02)	.046 (.02)*	.022 (.02)
Female (=1)	---	1.45 (.55)**	.66 (.57)	.58 (.57)	1.45 (.56)**	.68 (.56)
Extraversion	---	---	.54 (.17)**	.50 (.17)**	-.04 (.16)	.26 (.16)
Agreeable	---	---	.86 (.24)**	.75 (.24)**	.54 (.25)*	.15 (.25)
Conscientious	---	---	-.36 (.21)	-.42 (.21)*	-.36 (.21)	-.48 (.21)*
Emotional Stability	---	---	-.57 (.19)**	-.58 (.19)**	-.65 (.19)**	-.59 (.19)**
Openness	---	---	.31 (.21)	.25 (.21)	-.02 (.21)	.10 (.21)
Adjusted R-squared	.0543	.0547	.0667	.0673	.0699	.0884
Observations	2,463	2,413	2,413	2,413	2,413	2,413

Notes: *p < .05, **p < .01 for 1-tailed test of a preregistered directional hypothesis. Otherwise, 2-tailed tests *p*-values reported.

TABLE 2: Hypothesis 2 tests—Dark/Light traits and the Coin Flip task

Dependent Variable = *HEADS*						
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Independent Variable	**Coef (st. error)**	**Coef (st. error)**	**Coef (st. error)**	**Coef (st. error)**	**Coef (st. error)**	**Coef (st. error)**
constant	4.88 (.16)**	5.63 (.22)**	5.63 (.32)**	5.5 (.33)**	6.46 (.28)**	6.13 (.22)**
Dark Triad	.28 (.07)**	.18 (.07)**	.18 (.08)**	---	---	---
Dark Tetrad	---	---	---	.20 (.08)**	---	---
Light Triad	---	---	---	--	-.11 (.07)	---
NetLight	---	---	---	---	---	-.11 (.05)**
Age	---	-.01 (.002)**	-.01 (.002)**	-.01 (.002)**	-.01 (.002)**	-.01 (.002)**
Female (=1)	---	-.10 (.07)	-.10 (.08)	-.10 (.08)	-.13 (.07)	-.11 (.07)
Extraversion	---	---	-.0004 (.02)	.001 (.02)	.01 (.02)	.01 (.02)
Agreeable	---	---	.01 (.03)	.01 (.03)	.01 (.03)	.02 (.03)
Conscientious	---	---	-.01 (.03)	-.01 (.03)	-.02 (.03)	-.01 (.03)
Emotional Stability	---	---	-.01 (.03)	-.01 (.03)	-.004 (.03)	-.01 (.03)
Openness	---	---	.01 (.03)	.01 (.03)	.02 (.03)	.02 (.03)
Adjusted R-squared	.0068	.0157	.0139	.0140	.0125	.0139
Observations	2,463	2,413	2,413	2,413	2,413	2,413

Notes: *p* < .05, **p* < .01 for 1-tailed test of a preregistered directional hypothesis. Otherwise, 2-tailed tests *p*-values reported.

TABLE 3: Hypothesis 3 tests—Dark/Light traits and Utilitarian Trolley dilemma choices

Dependent Variable = *Proportion Utilitarian Choices*	(1) Coef (st. error)	(2) Coef (st. error)	(3) Coef (st. error)	(4) Coef (st. error)	(5) Coef (st. error)	(6) Coef (st. error)
Independent Variable						
constant	.93 (.02)**	.94 (.03)**	.92 (.04)**	.92 (.04)**	.81 (.03)**	.91 (.03)**
Dark Triad	-.01 (.01)	-.01 (.01)	-.007 (.009)	---	---	---
Dark Tetrad	---	---	---	-.008 (.010)	---	---
Light Triad	---	---	---	---	.03 (.009)**	---
NetLight	---	---	---	---	---	.02 (.006)**
Age	---	-.0001 (.0003)	-.0001 (.0003)	-.0001 (.0002)	.0001 (.0003)	-.0001 (.0003)
Female (=1)	---	-.006 (.009)	-.01 (.01)	-.01 (.01)	-.01 (.01)	-.01 (.01)
Extraversion	---	---	.003 (.003)	.003 (.003)	.01 (.003)	.003 (.003)
Agreeable	---	---	.008 (.004)*	.008 (.004)*	.003 (.004)	.003 (.004)
Conscientious	---	---	-.0004 (.003)	-.001 (.003)	-.001 (.003)	-.001 (.003)
Emotional Stability	---	---	-.006 (.004)*	-.006 (.003)*	-.006 (.003)*	-.006 (.003)
Openness	---	---	-.001 (.003)	-.001 (.003)	-.002 (.003)	-.001 (.003)
Adjusted R-squared	.0001	-.0005	.0006	.0006	.0064	.0038
Observations	2,463	2,413	2,413	2,413	2,413	2,413

Notes: *$p < .05$, **$p < .01$ for 1-tailed test of a preregistered directional hypothesis. Otherwise, 2-tailed tests p-values reported. The *Proportion Utilitarian Choices* variables takes on the value of 0, .25, .5, .75, or 1 and represents the proportion of utilitarian choices made across the 4 Trolley scenarios with a unique utilitarian choice (i.e., (1:1) and (5:5) Trolley scenario choices not considered).

TABLE 4: Hypothesis 4 tests—Psychopathy and Machiavellianism predictions on baseline mood

Independent Variable	Dependent Variable = *Positive Mood* (baseline)				Dependent Variable = *Negative Mood* (baseline)			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
	Coef (st. err)	Coef (st. err)	Coef (st. err)	Coef (st. err)	Coef (st. err)	Coef (st. err)	Coef (st. err)	Coef (st. err)
constant	1.34 (.20)**	1.26 (.20)**	1.02 (.16)**	1.12 (.19)**	3.20 (.20)**	3.65 (.20)**	3.80 (.16)**	3.50 (.19)**
Psychopathy	-.02 (.04)	---	---	---	.29 (.04)**	---	---	---
Machiav.	---	.002 (.03)	---	---	---	.15 (.03)**	---	---
Narcissism	---	---	.14 (.04)**	---	---	---	.20 (.04)**	---
Sadism	---	---	---	.05 (.04)	---	---	---	.21 (.04)**
Age	.01 (.002)**	.01 (.002)**	.01 (.002)**	.01 (.002)**	-.01 (.002)**	-.01 (.002)**	-.01 (.002)**	-.01 (.002)**
Female (=1)	-.18 (.05)**	-.18 (.05)**	-.16 (.05)**	-.17 (.05)**	.001 (.05)	-.06 (.05)	-.05 (.05)	-.04 (.05)
Extraversion	.18 (.01)**	.18 (.01)**	.15 (.02)**	.17 (.01)**	-.03 (.01)*	-.02 (.01)	-.05 (.02)**	-.02 (.01)
Agreeable	.12 (.02)**	.12 (.02)**	.13 (.02)**	.13 (.02)**	-.03 (.02)	-.05 (.02)**	-.07 (.02)**	-.04 (.02)*
Conscientious	.13 (.02)**	.13 (.02)**	.13 (.02)**	.13 (.02)**	-.07 (.02)**	-.09 (.02)**	-.10 (.02)**	-.08 (.02)**
Emotional Stability	.14 (.02)**	.15 (.02)**	.14 (.02)**	.14 (.02)**	-.22 (.02)**	-.22 (.02)**	-.23 (.02)**	-.22 (.020**
Openness	.03 (.02)	.03 (.02)	.02 (.02)	.03 (.02)	.01 (.02)	.02 (.02)	-.0002 (.02)	.02 (.02)
Adjusted R-squared	.2463	.2463	.2503	.2467	.1888	.1792	.1811	.1822
Observations	2,413	2,413	2,413	2,413	2,413	2,413	2,413	2,413

Notes: *$p < .05$, **$p < .01$ for 1-tailed test of a preregistered directional hypothesis. Otherwise, 2-tailed tests p-values reported. *Positive Mood* and *Negative Mood* were constructed as an average of the mood reports across the positive and negative mood dimensions assessed, respectively (as was preregistered).

TABLE 5: Hypothesis 4 tests—Psychopathy and Machiavellianism predictions on mood immediately *after* Trolley dilemma task

Independent Variable	Dependent Variable = *Positive Mood* (Post-Trolley Dilemma task)				Dependent Variable = *Negative Mood* (Post-Trolley Dilemma task)			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
	Coef (st. err)	**Coef (st. err)**	**Coef (st. err)**	**Coef (st. err)**	**Coef (st. err)**	**Coef (st. err)**	**Coef (st. err)**	**Coef (st. err)**
constant	1.39 (.22)**	1.30 (.22)**	1.41 (.18)**	1.39 (.21)**	3.07 (.23)**	3.46 (.23)**	3.29 (.19)**	3.11 (.22)**
Psychopathy	.09 (.05)	---	---	---	.17 (.05)**	---	---	---
Machiav.	---	.09 (.04)*	---	---	---	.04 (.04)	---	---
Narcissism	---	---	.15 (.05)**	---	---	---	.19 (.05)**	---
Sadism	---	---	---	.09 (.05)*	---	---	---	.17 (.05)**
Age	.01 (.002)**	.01 (.002)**	.01 (.002)**	.01 (.002)**	-.001 (.002)	-.002 (.002)	-.001 (.002)	-.001 (.002)
Female (=1)	-.38 (.06)**	-.39 (.05)**	-.38 (.05)**	-.38 .06)**	.14 (.06)*	.10 (.06)	.12 (.06)*	.13 (.06)*
Extraversion	.19 (.02)**	.19 (.02)**	.17 (.02)**	.19 (.02)**	-.01 (.02)	-.01 (.02)	-.04 (.02)*	-.02 (.02)
Agreeable	.11 (.02)**	.11 (.02)**	.10 (.02)**	.11 (.02)**	.01 (.02)	-.01 (.02)	-.003 (.02)	.01 (.02)
Conscientious	.13 (.02)**	.13 (.02)**	.12 (.02)**	.13 (.02)**	-.09 (.02)**	-.10 (.02)**	-.11 (.02)**	-.09 (.02)**
Emotional Stability	.13 (.02)**	.13 (.12)**	.12 (.02)**	.13 (.02)**	-.21 (.02)**	-.21 (.02)**	-.22 (.02)**	-.21 (.02)**
Openness	.01 (.02)	.01 (.02)	-.003 (.02)	.01 (.02)	.01 (.02)	.01 (.02)	-.003 (.02)	.01 (.02)
Adj R-squared	.1936	.1943	.1960	.1939	.1047	.1008	.1065	.1050
Observations	2,413	2,413	2,413	2,413	2,413	2,413	2,413	2,413

Notes: *$p < .05$, **$p < .01$ for 1-tailed test of a preregistered directional hypothesis. Otherwise, 2-tailed tests *p*-values reported. *Positive Mood* and *Negative Mood* were constructed as an average of the mood reports across the positive and negative mood dimensions assessed, respectively (as was preregistered).

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