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Dark personality traits and anti-natalist beliefs: The mediating roles of primal world beliefs

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ABSTRACT

The literature regarding the Dark Triad of personality (i.e., narcissism, psychopathy, and Machiavellianism) has expanded rapidly during recent years with researchers evaluating the connections that these personality traits have with a variety of phenomena including philosophical beliefs and moral decision-making. The goal of the present study was to replicate and extend recent research concerning the associations that the Dark Triad had with anti-natalist beliefs (i.e., that it is morally wrong to procreate) by using multidimensional conceptualizations of these dark personality traits and examining whether primal world beliefs mediate the associations that these dark personality traits have with anti-natalist beliefs. The results indicate that, as expected, specific dark personality traits (i.e., antagonistic narcissism, psychopathic meanness, psychopathic disinhibition, and antagonistic Machiavellianism) were positively associated with certain anti-natalist beliefs. In addition, the associations that these dark personality traits had with anti-natalist beliefs were sometimes mediated by the safe primal world belief (i.e., perceiving the world to be non-threatening and cooperative) and the enticing primal world belief (i.e., perceiving the world to be irresistibly fascinating). Discussion focuses on the implications of these results for the role that primal world beliefs play in the connections between dark personality traits and anti-natalist beliefs.

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Despite the widespread belief that Dark Triad personality traits (i.e., narcissism, psychopathy, and Machiavellianism) are maladaptive, it has been argued that these antagonistic personality traits may serve important adaptive functions such as motivating individuals to secure resources, gain status, avoid punishment, and retain mates (e.g. Jonason et al., 2010; O'Boyle et al., 2012). Similarly, human morality likely evolved to assist in solving adaptive problems and achieving adaptive goals (Wright, 2010). There is growing evidence that personality traits frame social, political, and moral worldviews (e.g. Smillie et al., 2021) which is consistent with previous research showing the Dark Triad personality traits to be associated with certain aspects of moral decision-making (e.g.

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Jonason et al., 2015). Schönegger (2022) recently found that the Dark Triad personality traits are positively associated with *anti-natalism*, which refers to the philosophical belief that procreation is morally wrong. The implications of anti-natalism are profound, and it is useful to examine when and how anti-natalist beliefs arise. The present study is an attempt to replicate and extend this recent work by Schönegger's (2022) by using multidimensional conceptualizations of dark personality traits and examining whether particular ways of viewing the world – which are known as *primal world beliefs* – mediate the associations that dark personality traits have with anti-natalist beliefs.

The term *anti-natalism* has various definitions, but it generally refers to the belief that all sentient beings should not have been born and that procreation is immoral (e.g. Belshaw, 2012; Benatar, 1997, 2006; Brown & Keefer, 2020; de Giraud, 2006; Hereth & Ferrucci, 2021). Anti-natalism is a controversial perspective because it challenges the morality of human reproduction and it also has important implications for issues such as animal husbandry and pet breeding. Although anti-natalist sentiments can be found in ancient texts from different cultures (e.g. Greece, India) and religions (e.g. Christianity, Buddhism, Hinduism), these ideas have been organized into a formal philosophical position in recent years by the philosopher David Benatar (see Coates, 2014, for a review of anti-natalism). Although there is considerable debate regarding certain aspects of Benatar's version of anti-natalism (e.g. Magnusson, 2022; Pihlström, 2009; Piller, *in press*; Singh, 2018), we decided to focus on his views because they have received a great deal of attention in recent years.

Central to anti-natalism is the belief that bringing a new life into existence is harmful to that new life because suffering is a universal feature of existence and, therefore, the creation of life is the creation of suffering. Anti-natalism includes a range of views from local anti-natalist beliefs (i.e., under certain circumstances it is morally wrong to procreate) to more global anti-natalist beliefs (i.e. it is always morally wrong to procreate; Schönegger, 2022). Local anti-natalist beliefs are likely more socially acceptable considering the difficulty many would have in their interpersonal relationships if they believed it was always wrong to procreate. For example, when a relative announces a pregnancy, it is generally socially undesirable to express to that person that procreation is morally wrong. Benatar's (1997, 2006) argument that it is always morally wrong to bring new sentient life into existence is based on two essential arguments: the quality-of-life argument and the (axiological) asymmetry argument. The quality-of-life argument concerns the idea that any sentient life brought into existence will experience more harms than benefits (Benatar, 1997, 2006). Benatar (1997, 2006) reviews research documenting that humans display powerful biases when assessing their well-being, devaluing past pain and suffering to produce the conclusion that life is worth starting.

The asymmetry argument reinforces the quality-of-life argument because it holds that the absence of suffering is good (even if no one exists to experience the absence of harm), whereas the absence of pleasure is not bad (Benatar, 1997, 2006). This suggests that existence constitutes a net harm regardless of how pleasurable life is for the existing individual because the absence of that pleasure is not bad if no one exists to experience it (Benatar, 1997, 2006). Another anti-natalism argument of interest for the current research is misanthropic anti-natalism, which states that humans create so much harm for other humans, non-human animals, and the environment that we should not produce any more of them (Benatar, 2006). The focus of this study, following Schönegger (2022), is local anti-natalism, misanthropic anti-natalism, and Benatar's central philosophical anti-natalism arguments (i.e. the quality-of-life argument and the asymmetry argument).

The Dark Triad of personality (i.e. narcissism, psychopathy, and Machiavellianism) is a set of socially aversive traits that are characterized by interpersonal manipulation and callousness (Jones & Figueredo, 2013; Marcus et al., 2018) and tend to be associated with an array of negative outcomes (see Zeigler-Hill & Marcus, 2019, for a review). The Dark Triad personality traits are related to individualistic values and a selfish orientation contrary to the widespread public endorsement of the moral value of selflessness (Jonason et al., 2010, 2015). The tendency for the Dark Triad to be associated with divergent morality (Jonason et al., 2015) may explain the connections that have been observed between these personality traits and anti-natalist beliefs (Schönegger, 2022). Although individuals who adopt anti-natalist beliefs express concern for the well-being of others and the minimization of suffering – which is indicative of empathy – anti-natalism is not a widely held moral belief (Schönegger, 2022). Similarly, the divergent moral belief that procreation is immoral is a perspective that seems unintuitive and brings into question the morality of the ubiquitous decision to reproduce (Schönegger, 2022). The divergent morality that characterizes the Dark Triad may suggest a connection with the atypical and uncommon morality of anti-natalism.

An important limitation of the literature concerning the Dark Triad is that these constructs are often treated as unidimensional, despite considerable evidence that each of these constructs is multidimensional (e.g. Miller et al., 2019). That is, each member of the Dark Triad may be best represented as a constellation of specific personality traits. It is important to account for the multidimensional nature of these constructs because doing so may allow for a more complete and nuanced understanding of how these personality traits are associated with a wide array of outcomes, including anti-natalist beliefs. For example, the positive association between

psychopathy and anti-natalist beliefs that were observed in Schönegger (2022) may only apply to certain aspects of psychopathy.

Narcissism refers to a set of characteristics that include callousness, a lack of empathy, a sense of entitlement, and a willingness to exploit others (e.g. Krizan & Herlache, 2018; Miller et al., 2017; Morf & Rhodewalt, 2001). The distinction between *grandiose* narcissism and *vulnerable* narcissism has often been acknowledged during recent years (e.g. Pincus & Roche, 2011). However, it has been argued that grandiose narcissism and vulnerable narcissism may be further separated into three aspects (e.g. Crowe et al., 2019; Miller et al., 2016): *extraverted narcissism* (a grandiose form of narcissism that is characterized by self-enhancement), *antagonistic narcissism* (a blend of the grandiose and vulnerable forms of narcissism that is characterized by defensiveness and hostility), and *neurotic narcissism* (a vulnerable form of narcissism that is characterized by negative affectivity). One advantage of this conceptualization of narcissism is that it isolates the antagonistic aspect of narcissism which contributes to the substantial overlap that has been observed between the grandiose and vulnerable forms of narcissism (e.g. Crowe et al., 2019). The results of studies that have distinguished between these three aspects of narcissism have often found that antagonistic narcissism has stronger associations with aversive outcomes than are typically observed for extraverted narcissism and neurotic narcissism (see Crowe et al., 2019, for a review).

Psychopathy is a personality construct that includes traits such as risky behavior, emotional and interpersonal detachment, impulsivity, callousness, and an exploitative interpersonal orientation (e.g. Hare & Neumann, 2008; Patrick et al., 2009; see Patrick, 2018, for a review). The Triarchic Model of Psychopathy (e.g. Patrick & Drislane, 2015; Patrick et al., 2009, 2012) has been highly influential because it attempts to integrate various conceptualizations of psychopathy into a single framework. The Triarchic Model of Psychopathy proposes that psychopathy consists of three distinct – but related – phenotypic dispositions: *psychopathic boldness* (characterized by emotional resiliency, venturesomeness, high interpersonal dominance, and low anxiousness as well as inclinations toward confidence and social assertiveness), *psychopathic meanness* (characterized by tendencies toward cruelty, lack of empathy, contempt toward others, lack of affiliative capacity, and exploitativeness), and *psychopathic disinhibition* (characterized by tendencies toward impulsivity, hostility, mistrust, irresponsibility, oppositionality, and difficulties in emotional regulation). Previous results have found that psychopathic meanness and psychopathic disinhibition have stronger associations with a wide range of externalizing outcomes (e.g. antisocial behavior, criminal behavior) than are found for psychopathic boldness (e.g. Crowe et al., 2021; Gatner et al., 2016; Miller & Lynam, 2012).

Machiavellianism is a personality trait that includes characteristics such as cynicism, tendencies toward manipulation, self-beneficial goal pursuit, exploitativeness, duplicity, lack of affect and empathy, and strategic long-term planning (Collison et al., 2018; Jones, 2016; Rauthmann, 2012). Machiavellianism consists of three related – but distinct – constructs (Collison et al., 2018): *antagonistic Machiavellianism* (characterized by tendencies toward selfishness, immodesty, manipulativeness, cynicism, and callousness), *agentic Machiavellianism* (characterized by tendencies toward achievement-striving, ability to delay gratification, assertiveness, competence, feelings of invulnerability, and high levels of activity and self-confidence), and *planful Machiavellianism* (characterized by tendencies toward deliberation and low disinhibition). Antagonistic Machiavellianism tends to be more strongly associated with negative outcomes (e.g. aggression, counterproductive work behavior, poor reputation) than is the case for agentic Machiavellianism or planful Machiavellianism (e.g. Collison et al., 2018; Du et al., 2021; Kückelhaus, Blickle, 2021; Kückelhaus, Blickle, 2021).

Overview and predictions

The goal of the present study was to replicate and extend recent findings concerning the associations that the Dark Triad had with anti-natalist beliefs (Schönegger, 2022). More specifically, we employed multidimensional conceptualizations of these dark personality traits in order to address a limitation of this previous work. In addition, we examined the possibility that primal world beliefs – which refer to views that concern the overall character of the world (e.g. *the world is a good place*; Clifton et al., 2019) – may mediate the associations that these personality traits have with anti-natalist beliefs. Research concerning primal world beliefs is still in its nascent stage. However, it appears that there are three higher-order beliefs about the world: the *safe vs. dangerous* primal world belief (i.e. perceiving the world as secure, cooperative, stable, and comfortable vs. dangerous, competitive, unstable, and uncomfortable), the *enticing vs. dull* primal world belief (i.e. perceiving the world as a fascinating and beautiful place where exploration is rewarded vs. a dull and ugly place where exploration provides little return on investment), and the *alive vs. mechanistic* primal world belief (i.e. perceiving the world as being responsive to one's actions and that phenomena are the result of one's actions vs. being mechanical without any awareness or intent). Primal world beliefs were included as potential mediators of the associations between the Dark Triad and anti-natalist beliefs because beliefs about the fundamental nature of the world may help explain how these personality

traits are able to produce particular patterns of attitudes and behaviors. In fact, it is possible that many of the aversive attitudes and behaviors that characterize these antagonistic personality traits may be attributable, at least in part, to the social environments these individuals believe themselves to be inhabiting (e.g. Zeigler-Hill et al., 2021). This possibility is supported by the results of recent studies showing that the associations that these personality traits have with anti-egalitarian ideological attitudes are mediated by beliefs about the world being a highly competitive place where only the strongest individuals can be successful (Zeigler-Hill et al., 2020, 2021). This led us to believe that the associations that dark personality traits had with anti-natalist beliefs may be due, at least in part, to the tendency to perceive the world in particular ways (e.g. perceiving the world to be a dangerous or ugly place may mediate the associations that dark personality traits had with anti-natalist beliefs). We developed the following hypotheses for the present study:

Hypothesis 1: We expected to replicate the associations reported by Schönegger (2022), such that dark personality traits would be positively associated with anti-natalist beliefs. Schönegger predicted this association because anti-natalist beliefs diverge from commonly held views of morality and previous work has demonstrated a strong association between the Dark Triad and the willingness to endorse moral judgments that do not align with traditional moral perspectives (Jonason et al., 2015; Smillie et al., 2021). However, we expected these positive associations to emerge for the more aversive of these dark personality traits: antagonistic narcissism, psychopathic meanness, psychopathic disinhibition, and antagonistic Machiavellianism. In contrast, we were uncertain whether extraverted narcissism, neurotic narcissism, psychopathic boldness, agentic Machiavellianism, and planful Machiavellianism would be associated with anti-natalist beliefs, but we examined these associations for exploratory purposes.

Hypothesis 2: We expected the positive associations that antagonistic narcissism, psychopathic meanness, psychopathic disinhibition, and antagonistic Machiavellianism had with anti-natalist beliefs to be mediated by primal world beliefs, such that certain primal world beliefs would explain the associations between dark personality traits and anti-natalist beliefs observed by Schönegger (2022). We did not have specific predictions about which primal world beliefs would mediate these associations, so we conducted exploratory analyses in which the safe, enticing, and alive primal world beliefs served as potential mediators for exploratory purposes.

Method

Participants and procedure

Participants were 504 community members from the United States recruited from Prolific who participated in exchange for financial compensation (\$7.00 USD). We conducted a power analysis for indirect effects using Monte Carlo simulations to calculate the necessary sample size for this study (Schoemann et al., 2017). We assumed that the associations the dark personality traits had with anti-natalist beliefs would tend to be medium in magnitude based on the results of Schönegger (2022). We also assumed that the dark personality traits would have associations with the primal world beliefs that would be medium in magnitude based on the results of previous studies concerning the connections that dark personality traits had with similar social worldviews (e.g. Zeigler-Hill et al., 2020, 2021). Although no previous studies have examined the associations that primal world beliefs had with anti-natalist beliefs, we assumed these associations to be medium in magnitude because that aligned with the average effect size in social-personality psychology (Richard et al., 2003). The results of the power analysis revealed that we required a sample of at least 225 participants in order to test our hypotheses with a power of at least 0.80 and $\alpha = .05$. However, we decided to oversample in order to increase the statistical power of the study. More specifically, we used a financially-based stopping rule such that we collected data in small batches until we exhausted the funds that had been allocated for this study.

Participants completed measures concerning narcissism, psychopathy, Machiavellianism, primal world beliefs, and anti-natalist attitudes – along with other measures that are not relevant to the present study (e.g. basic personality domains) – via a secure website. Data were excluded for a total of 56 participants due to careless or inattentive responding: 7 participants were excluded for having a large amount of missing data (i.e. more than 5% of responses), 4 participants were excluded for completing the instruments much faster than the other participants, 21 participants were excluded for failing two or more attention-check items, 12 participants were excluded for being univariate outliers, 10 participants were excluded for providing inconsistent responses as assessed by inter-item standard deviation, and 2 participants were excluded for providing invariant response patterns as assessed by long-string analysis (see Curran, 2016, for a review of methods for detecting careless or inattentive responding). We also screened the data for multivariate outliers, but no participants were excluded for this reason.¹ The final sample consisted of 448 participants (272 women, 176 men) with a mean age of 29.89 years ($SD = 9.82$; range = 18–60 years) and a racial/ethnic composition that was 76% White, 7% Black, 7% Hispanic, 7% Asian, and 3% other. The educational background of the final sample was as follows: 34% had

earned a graduate degree, 35% had earned an undergraduate degree, 14% had completed high school, and 17% had not completed high school.

Measures

Narcissism

We used the short form of the Five-Factor Narcissism Inventory (Sherman et al., 2015) to capture *extraverted narcissism* (16 items; e.g. “I am extremely ambitious” [$\alpha = .88$]), *antagonistic narcissism* (32 items; e.g. “I don’t think the rules apply to me as much as they apply to others” [$\alpha = .95$]), and *neurotic narcissism* (12 items; e.g. “I often feel as if I need compliments from others in order to be sure of myself” [$\alpha = .86$]). Responses were made using scales that ranged from 1 (*disagree strongly*) to 5 (*agree strongly*).

Psychopathy

We used the Triarchic Psychopathy Measure (Patrick, 2010) to capture the following aspects of psychopathy: *psychopathic boldness* (19 items; e.g. “I am well-equipped to deal with stress” [$\alpha = .80$]), *psychopathic meanness* (19 items; e.g. “It doesn’t bother me to see someone else in pain” [$\alpha = .90$]), and *psychopathic disinhibition* (20 items; e.g. “My impulsive decisions have caused problems with loved ones” [$\alpha = .90$]). Responses were made using scales that ranged from 1 (*false*) to 4 (*true*).

Machiavellianism

We used the Five-Factor Machiavellianism Inventory (Collison et al., 2018) to capture *antagonistic Machiavellianism* (20 items; e.g. “Humility is over-rated” [$\alpha = .83$]), *agentic Machiavellianism* (24 items; e.g. “I am confident interacting with others” [$\alpha = .88$]), and *planful Machiavellianism* (8 items; e.g. “I like to carefully consider the consequences before I make a decision” [$\alpha = .77$]). Responses were made using scales that ranged from 1 (*disagree strongly*) to 5 (*agree strongly*).

Primal world beliefs

We used the Primals Inventory (Clifton et al., 2019) to capture the following primal world beliefs: *safe vs. dangerous* (29 items; e.g. “On the whole, the world is a safe place” [$\alpha = .88$]), *enticing vs. dull* (24 items; e.g. “Nearly everything in the world is beautiful” [$\alpha = .84$]), and *alive vs. mechanistic* (14 items; e.g. “Whatever is happening around me often feels related to me or something I’ve done” [$\alpha = .84$]). The Primals Inventory was scored such that high scores reflected higher levels of the safe (vs. dangerous) primal world belief, the enticing (vs. dull) primal world belief, and the alive (vs. mechanistic) primal world belief. Responses were made using scales that ranged from 1 (*strongly disagree*) to 6 (*strongly agree*).

Anti-natalism

We measured anti-natalist beliefs using the approach employed by Schönegger (2022). More specifically, four arguments or statements that aligned with anti-natalism were presented to participants. These items ranged in their focus and scope. The first item was intended to capture *argument anti-natalism*, which involves Benatar's (2006) asymmetry argument as follows: There is a crucial asymmetry between the good and the bad things, such as pleasure and pain:

- (1) The presence of pain is bad.
- (2) The presence of pleasure is good.
- (3) The absence of pain is good, even if that good is not enjoyed by anyone.
- (4) The absence of pleasure is not bad unless there is somebody for whom the absence is a deprivation.
- (5) Coming into existence generates both good and bad experiences, pain and pleasure, whereas not coming into existence entails neither pain nor pleasure. The absence of pain is good, the absence of pleasure is not bad. This is why it is always worse to be than not to be. As such, it is wrong to bring people into existence.

The second item was intended to capture *simple anti-natalism*, which involves a briefer version of the asymmetry argument (i.e., “It is better not to exist than to exist, because only in existence can there be pain and suffering. If one does not exist, one cannot suffer. As such, it is wrong to procreate [i.e., have children]”). The third item was intended to capture *misanthropic anti-natalism*, which focuses on the harm caused by people (i.e., “Humans cause so much harm – to other humans, non-human animals, and the environment – that it is wrong to procreate [i.e., have children]”). The fourth item was intended to capture *local anti-natalism*, which focuses on the idea that individuals should not procreate if they believe their children will be miserable (i.e., “Prospective parents who believe that their child will have a miserable life should not procreate [i.e., have children]”). Responses were made using scales that ranged from 1 (*disagree*) to 5 (*agree*).

Results

Descriptive statistics and zero-order correlations are presented in Table 1. Extraverted narcissism, antagonistic narcissism, psychopathic meanness, and psychopathic disinhibition had small-to-medium positive correlations with argument anti-natalism, simple anti-natalism, and misanthropic anti-natalism but were not correlated with local anti-natalism. A similar pattern emerged for antagonistic Machiavellianism, but it had small-to-medium positive



Table 1. Intercorrelations and Descriptive Statistics.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Extraverted Narcissism	—															
2. Antagonistic Narcissism	.58***	—														
3. Neurotic Narcissism	-.16***	-.19***	—													
4. Psychopathic Boldness	.57***	.34***	-.58***	—												
5. Psychopathic Meanness	.33***	.75***	-.18***	.22***	—											
6. Psychopathic Disinhibition	.20***	.58***	.02	-.03	.75***	—										
7. Antagonistic Machiavellianism	.34***	.75***	-.13***	.20***	.75***	.53***	—									
8. Agentic Machiavellianism	.62***	.25***	-.51***	.77***	.04	-.22***	.05	—								
9. Planful Machiavellianism	-.13***	-.46***	.07	-.13***	-.48***	-.54***	-.39***	.17***	—							
10. Safe Primal World Belief	.16***	-.06	-.29***	.37***	-.12*	-.23***	-.25***	.44***	.12*	—						
11. Enticing Primal World Belief	.17***	-.16***	-.20***	.22***	-.28***	-.24***	-.35***	.37***	.24***	.53***	—					
12. Alive Primal World Belief	.35***	.30***	-.18***	.21***	.08	.08	.02	.35***	.01	.30***	-.40***	—				
13. Argument Anti-Natalism	.11*	.45***	-.12*	.06	.37***	.37***	.38***	-.07	-.24***	-.18***	-.29***	.13**	—			
14. Simple Anti-Natalism	.11*	.48***	-.01	-.06	.41***	.41***	.45***	-.20***	-.37***	-.29***	-.35***	.03	.61***	—		
15. Misanthropic Anti-Natalism	.12**	.34***	-.01	-.02	.26***	.26***	.32***	-.10*	-.20***	-.28***	-.20***	.01	.48***	.54***	—	
16. Local Anti-Natalism	-.01	.04	.14**	-.12*	.05	.05	.13**	-.18***	-.08	-.26***	-.17***	-.21***	.22***	.27***	.33***	—
Mean	3.27	2.44	3.32	2.44	1.69	1.87	2.52	3.26	3.66	3.51	4.17	3.62	2.73	2.29	3.03	3.73
Standard Deviation	0.68	0.73	0.70	0.42	0.51	0.52	0.51	0.57	0.67	0.59	0.56	0.78	1.28	1.22	1.25	1.08

Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

correlations with each anti-natalism belief, including local anti-natalism. In contrast, agentic Machiavellianism and planful Machiavellianism had small-to-medium *negative* correlations with simple anti-natalism and misanthropic anti-natalism. Planful Machiavellianism also had a small negative correlation with argument anti-natalism, whereas agentic Machiavellianism and psychopathic boldness had small negative correlations with local anti-natalism. Neurotic narcissism had contrasting associations with anti-natalist beliefs such that it had a small negative correlation with argument anti-natalism but a small *positive* correlation with local anti-natalism. The safe primal world belief and the enticing primal world belief had small-to-medium negative correlations with each of the anti-natalist beliefs, whereas the alive primal world belief had a small positive correlation with argument anti-natalism but a small *negative* correlation with local anti-natalism.

We conducted a series of parallel multiple mediation analyses using the PROCESS macro developed by Hayes (2018) to examine whether dark personality traits had indirect associations with anti-natalist beliefs through the safe, enticing, and alive primal world beliefs. We conducted separate parallel multiple mediation analyses for each dark personality trait because we were concerned that including all of these traits in the same analysis would make it difficult to interpret the results due to their considerable overlap with each other, which was as high as $r = .75$ (see Lynam et al., 2006; or Sleep et al., 2017, for extended discussions of this issue). Each variable was standardized in order to aid with the interpretation of the resulting coefficients. Multicollinearity was not an issue for these analyses, as indicated by the Variance Inflation Factor (VIF) values being less than 1.68 (Darlington & Hayes, 2017).²

The results of these parallel multiple mediational analyses are presented together in Table 2. These analyses revealed that extraverted narcissism, psychopathic boldness, and agentic Machiavellianism had small-to-medium positive associations with each of the primal world beliefs. A similar pattern emerged for planful Machiavellianism such that it had small positive associations with the safe and enticing primal world beliefs, but it was not associated with the alive primal world belief. In contrast, psychopathic meanness, psychopathic disinhibition, and antagonistic Machiavellianism had small-to-medium *negative* associations with the safe and enticing primal world beliefs but were not associated with the alive primal world belief. A similar pattern emerged for neurotic narcissism, but it had small negative associations with each of the primal world beliefs. Antagonistic narcissism had a complex association with the primal world beliefs such that it had a medium positive association with the alive primal world belief and a small *negative* association with the enticing primal world belief, but it was not associated with the safe primal world belief.



Table 2. Results of the parallel multiple mediation analyses.

	Narcissism			Psychopathy			Machiavellianism		
	Ext	Ant	Neu	Bold	Mean	Dis	Ant	Ag	Plan
<i>Associations with Mediators</i>									
Safe Primal World Belief (SPWB)	.15**	-.05	-.29***	.37***	-.12*	-.22***	-.24***	.43***	.11*
Enticing Primal World Belief (EPWB)	.17***	-.16***	-.19***	.22***	-.27***	-.23***	-.35***	.37***	.23***
Alive Primal World Belief (APWB)	.34***	.30***	-.17***	.21***	.08	.08	.02	.35***	.00
<i>Associations with Outcomes</i>									
Argument Anti-Natalism (AAN; Total)	.11*	.45***	-.12*	.06	.37***	.30***	.38***	-.07	-.24***
AAN (Direct)	.09*	.36***	-.18***	.12**	.27***	.19***	.27***	.00	-.16***
Personality → SPWB → AAN	-.01	.00	.03*	-.04*	.01	.01	.01	-.03	-.01
Personality → EPWB → AAN	-.06**	.04**	.07***	-.08***	.08***	.08***	.10***	-.14***	-.08***
Personality → APWB → AAN	.09***	.04**	-.05**	.06***	.02	.02	.00	.10***	.00
Simple Anti-Natalism (SAN; Total)	.11*	.47***	-.01	-.06	.41***	.41***	.45***	-.19***	-.37***
SAN (Direct)	.13**	.42***	-.10*	.04	.31***	.30***	.33***	-.09	-.29***
Personality → SPWB → SAN	-.03*	.01	.06**	-.07**	.02*	.03*	.03*	-.06**	-.02*
Personality → EPWB → SAN	-.06**	.03*	.07***	-.08***	.06***	.07***	.08***	-.13***	-.06***
Personality → APWB → SAN	.06**	.01	-.04**	.05**	.01	.01	.00	.08***	.00
Misanthropic Anti-Natalism (MAN; Total)	.12**	.34***	-.01	-.02	.26***	.25***	.32***	-.10*	-.20***
MAN (Direct)	.16**	.32***	-.09	.09	.21***	.17***	.26***	.01	-.16***
Personality → SPWB → MAN	-.04**	.01	.08***	-.11***	.03*	.05**	.06***	-.12***	-.03*
Personality → EPWB → MAN	-.02	.00	.02	-.03	.01	.02	.01	-.04*	-.02
Personality → APWB → MAN	.03	.00	-.02	.03*	.01	.01	.00	.05*	.00
Local Anti-Natalism (LAN; Total)	-.01	.04	.14**	-.12*	.05	.10*	.13**	-.18***	-.08
LAN (Direct)	.09	.08	.06	-.01	.04	.07	.09	-.05	-.06
Personality → SPWB → LAN	-.03*	.01	.06**	-.08***	.03*	.05**	.05**	-.09***	-.03*
Personality → EPWB → LAN	.00	-.01	.00	.00	-.01	-.01	-.01	.00	.00
Personality → APWB → LAN	-.06**	-.05**	.02*	-.03*	-.01	-.01	.00	-.05*	.00

Note: **p* < .05; ***p* < .01; ****p* < .001.

Argument anti-natalism

Each dark personality trait had indirect associations with argument anti-natalism through the enticing primal world belief, but the nature of these indirect associations differed such that some were positive and others were negative. The dark personality traits that had *positive* indirect associations with argument anti-natalism through the enticing primal world belief were antagonistic narcissism ($\beta = 0.04$, $z = 2.77$, $p = .006$, $CI_{95\%}$ [0.02, 0.07]), neurotic narcissism ($\beta = 0.07$, $z = 3.64$, $p < .001$, $CI_{95\%}$ [0.03, 0.12]), psychopathic meanness ($\beta = 0.08$, $z = 3.85$, $p < .001$, $CI_{95\%}$ [0.04, 0.12]), psychopathic disinhibition ($\beta = 0.08$, $z = 3.89$, $p < .001$, $CI_{95\%}$ [0.05, 0.11]), and antagonistic Machiavellianism ($\beta = 0.10$, $z = 4.19$, $p < .001$, $CI_{95\%}$ [0.05, 0.14]). In contrast, extraverted narcissism ($\beta = -0.06$, $z = -3.21$, $p = .001$, $CI_{95\%}$ [-0.11, -0.02]), psychopathic boldness ($\beta = -0.08$, $z = -3.91$, $p < .001$, $CI_{95\%}$ [-0.13, -0.04]), agentic Machiavellianism ($\beta = -0.14$, $z = -5.33$, $p < .001$, $CI_{95\%}$ [-0.19, -0.09]), and planful Machiavellianism ($\beta = -0.08$, $z = -3.88$, $p < .001$, $CI_{95\%}$ [-0.12, -0.04]) had *negative* indirect associations with argument anti-natalism through the enticing primal world belief. In addition, extraverted narcissism ($\beta = 0.09$, $z = 4.38$, $p < .001$, $CI_{95\%}$ [0.05, 0.14]), antagonistic narcissism ($\beta = 0.04$, $z = 2.62$, $p = .009$, $CI_{95\%}$ [0.01, 0.08]), psychopathic boldness ($\beta = 0.06$, $z = 3.55$, $p < .001$, $CI_{95\%}$ [0.03, 0.10]), and agentic Machiavellianism ($\beta = 0.10$, $z = 4.75$, $p < .001$, $CI_{95\%}$ [0.06, 0.16]) had positive indirect associations with argument anti-natalism through the alive primal world belief, whereas neurotic narcissism had a negative indirect association with argument anti-natalism through the alive primal world belief ($\beta = -0.05$, $z = -3.15$, $p = .002$, $CI_{95\%}$ [-0.09, -0.02]). Neurotic narcissism also had a positive indirect association with argument anti-natalism through the safe primal world belief ($\beta = 0.03$, $z = 2.09$, $p = .04$, $CI_{95\%}$ [0.00, 0.07]), whereas psychopathic boldness had a negative indirect association with argument anti-natalism through the safe primal world belief ($\beta = -0.04$, $z = -2.07$, $p = .04$, $CI_{95\%}$ [-0.09, 0.00]).

Simple anti-natalism

As with argument anti-natalism, each dark personality trait had indirect associations with simple anti-natalism through the enticing primal world belief but some of these associations were positive and others were negative. The dark personality traits that had *positive* indirect associations with simple anti-natalism through the enticing primal world belief were antagonistic narcissism ($\beta = 0.03$, $z = 2.63$, $p = .009$, $CI_{95\%}$ [0.01, 0.06]), neurotic narcissism ($\beta = 0.07$, $z = 3.57$, $p < .001$, $CI_{95\%}$ [0.03, 0.11]), psychopathic meanness ($\beta = 0.06$, $z = 3.56$, $p < .001$, $CI_{95\%}$ [0.03, 0.10]), psychopathic disinhibition ($\beta = 0.07$, $z = 3.69$, $p < .001$, $CI_{95\%}$ [0.04, 0.10]), and

antagonistic Machiavellianism ($\beta = 0.08$, $z = 3.73$, $p < .001$, $CI_{95\%}$ [0.04, 0.12]). In contrast, extraverted narcissism ($\beta = -0.06$, $z = -3.18$, $p = .002$, $CI_{95\%}$ [-0.10, -0.02]), psychopathic boldness ($\beta = -0.08$, $z = -3.84$, $p < .001$, $CI_{95\%}$ [-0.12, -0.04]), agentic Machiavellianism ($\beta = -0.13$, $z = -5.07$, $p < .001$, $CI_{95\%}$ [-0.18, -0.08]), and planful Machiavellianism ($\beta = -0.06$, $z = -3.63$, $p < .001$, $CI_{95\%}$ [-0.10, -0.03]) had *negative* indirect associations with simple anti-natalism through the enticing primal world belief. In addition, extraverted narcissism ($\beta = 0.06$, $z = 3.27$, $p = .001$, $CI_{95\%}$ [0.03, 0.10]), psychopathic boldness ($\beta = 0.05$, $z = 3.17$, $p = .002$, $CI_{95\%}$ [0.02, 0.08]), and agentic Machiavellianism ($\beta = 0.08$, $z = 4.17$, $p < .001$, $CI_{95\%}$ [0.04, 0.13]) had positive indirect associations with simple anti-natalism through the alive primal world belief, whereas neurotic narcissism had a negative indirect association with simple anti-natalism through the alive primal world belief ($\beta = -0.04$, $z = -2.85$, $p = .004$, $CI_{95\%}$ [-0.07, -0.01]). Neurotic narcissism ($\beta = 0.06$, $z = 3.21$, $p = .001$, $CI_{95\%}$ [0.02, 0.10]), psychopathic meanness ($\beta = 0.02$, $z = 2.02$, $p = .04$, $CI_{95\%}$ [0.01, 0.04]), psychopathic disinhibition ($\beta = 0.03$, $z = 2.15$, $p = .03$, $CI_{95\%}$ [0.00, 0.05]), and antagonistic Machiavellianism ($\beta = 0.03$, $z = 2.45$, $p = .01$, $CI_{95\%}$ [0.01, 0.06]) had positive indirect associations with simple anti-natalism through the safe primal world belief, whereas extraverted narcissism ($\beta = -0.03$, $z = -2.37$, $p = .02$, $CI_{95\%}$ [-0.06, -0.01]), psychopathic boldness ($\beta = -0.07$, $z = -3.19$, $p = .001$, $CI_{95\%}$ [-0.12, -0.03]), agentic Machiavellianism ($\beta = -0.06$, $z = -2.62$, $p = .009$, $CI_{95\%}$ [-0.12, -0.02]), and planful Machiavellianism ($\beta = -0.02$, $z = -1.99$, $p = .05$, $CI_{95\%}$ [-0.04, 0.00]) had negative indirect associations with simple anti-natalism through the safe primal world belief.

Misanthropic anti-natalism

Antagonistic narcissism was the only dark personality trait that did not have an indirect association with misanthropic anti-natalism through the safe primal world belief, but the nature of these indirect associations included both positive and negative associations. The dark personality traits that had *positive* indirect associations with misanthropic anti-natalism through the safe primal world belief were neurotic narcissism ($\beta = 0.08$, $z = 4.01$, $p < .001$, $CI_{95\%}$ [0.04, 0.13]), psychopathic meanness ($\beta = 0.03$, $z = 2.18$, $p = .03$, $CI_{95\%}$ [0.01, 0.06]), psychopathic disinhibition ($\beta = 0.05$, $z = 3.22$, $p = .001$, $CI_{95\%}$ [0.02, 0.09]), and antagonistic Machiavellianism ($\beta = 0.06$, $z = 3.42$, $p < .001$, $CI_{95\%}$ [0.03, 0.10]). In contrast, extraverted narcissism ($\beta = -0.04$, $z = -2.74$, $p = .006$, $CI_{95\%}$ [-0.08, -0.01]), psychopathic boldness ($\beta = -0.11$, $z = -4.48$, $p < .001$, $CI_{95\%}$ [-0.17, -0.06]), agentic Machiavellianism ($\beta = -0.12$, $z = -4.35$, $p < .001$, $CI_{95\%}$ [-0.18, -0.06]), and planful Machiavellianism ($\beta = -0.03$, $z = -2.14$, $p = .03$, $CI_{95\%}$ [-0.06, -0.01]) had *negative* indirect associations with misanthropic anti-natalism through the safe primal world belief. In addition, neurotic narcissism

had a negative indirect association with misanthropic anti-natalism through the alive primal world belief ($\beta = -0.02$, $z = -2.09$, $p = .04$, $CI_{95\%} [-0.05, 0.00]$), whereas psychopathic boldness ($\beta = 0.03$, $z = 2.20$, $p < .03$, $CI_{95\%} [0.01, 0.06]$) and agentic Machiavellianism ($\beta = 0.05$, $z = 2.50$, $p = .01$, $CI_{95\%} [0.01, 0.09]$) had positive indirect associations with misanthropic anti-natalism through the alive primal world belief. Agentic Machiavellianism also had a negative indirect association with misanthropic anti-natalism through the enticing primal world belief ($\beta = -0.04$, $z = -2.00$, $p = .05$, $CI_{95\%} [-0.09, 0.00]$).

Local anti-natalism

As with misanthropic anti-natalism, antagonistic narcissism was the only dark personality trait that did not have an indirect association with local anti-natalism through the safe primal world belief, but the nature of these indirect associations included both positive and negative associations. The dark personality traits that had *positive* indirect associations with local anti-natalism through the safe primal world belief were neurotic narcissism ($\beta = 0.06$, $z = 3.19$, $p = .001$, $CI_{95\%} [0.02, 0.10]$), psychopathic meanness ($\beta = 0.03$, $z = 2.10$, $p = .04$, $CI_{95\%} [0.01, 0.05]$), psychopathic disinhibition ($\beta = 0.05$, $z = 2.97$, $p = .003$, $CI_{95\%} [0.02, 0.08]$), and antagonistic Machiavellianism ($\beta = 0.05$, $z = 3.11$, $p = .002$, $CI_{95\%} [0.02, 0.09]$). In contrast, extraverted narcissism ($\beta = -0.03$, $z = -2.56$, $p = .01$, $CI_{95\%} [-0.07, -0.01]$), psychopathic boldness ($\beta = -0.08$, $z = -3.49$, $p < .001$, $CI_{95\%} [-0.13, -0.04]$), agentic Machiavellianism ($\beta = -0.09$, $z = -3.42$, $p < .001$, $CI_{95\%} [-0.15, -0.04]$), and playful Machiavellianism ($\beta = -0.03$, $z = -2.10$, $p = .04$, $CI_{95\%} [-0.05, -0.01]$) had *negative* indirect associations with local anti-natalism through the safe primal world belief. In addition, extraverted narcissism ($\beta = -0.06$, $z = -3.04$, $p = .002$, $CI_{95\%} [-0.10, -0.02]$), antagonistic narcissism ($\beta = -0.05$, $z = -2.96$, $p = .003$, $CI_{95\%} [-0.09, -0.02]$), psychopathic boldness ($\beta = -0.03$, $z = -2.38$, $p = .02$, $CI_{95\%} [-0.06, -0.01]$), and agentic Machiavellianism ($\beta = -0.05$, $z = -2.50$, $p = .01$, $CI_{95\%} [-0.08, -0.01]$) had negative indirect associations with local anti-natalism through the alive primal world belief, whereas neurotic narcissism had a positive indirect association with local anti-natalism through the alive primal world belief ($\beta = 0.02$, $z = 2.20$, $p = .03$, $CI_{95\%} [0.00, 0.05]$).

Discussion

The present study was a modified replication study of Schönegger (2022) that was intended to extend what is known about the associations that dark personality traits have with anti-natalist beliefs by using multidimensional conceptualizations of narcissism, psychopathy, and Machiavellianism and by including primal world beliefs as potential mediators of these associations. As expected, the dark personality traits that are particularly aversive (i.e.,

antagonistic narcissism, psychopathic meanness, psychopathic disinhibition, and antagonistic Machiavellianism) were positively associated with certain anti-natalist beliefs (i.e., argument, simple, and misanthropic). Argument, simple, and misanthropic anti-natalist beliefs represent global anti-natalist beliefs which are often considered to be distinct from local anti-natalism, which is a more socially acceptable form of anti-natalism. These results suggest a relationship between the most socially undesirable dark personality traits and the less socially acceptable anti-natalist beliefs. Psychopathy has been found to be associated with decreased concern for morality, and Machiavellianism has been found to be associated with flexible moral beliefs (Jonason et al., 2015), indicating that the unconventional morality of global anti-natalism may reflect either a decreased concern for morality or a flexible moral belief system. Extraverted narcissism also had small positive associations with these anti-natalist beliefs, but future studies need to replicate these associations because we did not anticipate them.

It is important to note that the pattern differed for local anti-natalism such that these dark personality traits had, at best, weak associations with this form of anti-natalism. Local anti-natalism represents a less extreme form of anti-natalist beliefs, so it is interesting that the pattern of associations differed for local anti-natalism compared to the other forms of anti-natalist beliefs. Local anti-natalist beliefs are considered to be more socially acceptable than global anti-natalist beliefs, which reflects the difficulty that many would have in their interpersonal relationships if they believed it was always wrong to procreate. It is generally regarded as socially undesirable to express that procreation is always morally wrong, especially in conversations with individuals who have children. Parenthood is quite common, and it may make it difficult to foster and preserve positive relationships with individuals who have children while maintaining that their decision to procreate was immoral.

In contrast, it is common to identify specific situations where it is morally wrong to procreate. For example, in the U.S., it is substantially more socially acceptable to maintain the view that adolescents should not procreate than to maintain that no one – regardless of their age – should procreate. The greater acceptability of local anti-natalist beliefs may explain why the patterns of association differed for local anti-natalism compared to the more global forms of anti-natalism (i.e., simple, argument, and misanthropic). Considering that antagonistic narcissism, psychopathic meanness, and psychopathic disinhibition are considered to be among the most aversive of the dark personality traits, it is notable that the endorsement of local anti-natalism was not correlated with these traits.

Findings from the present study provide additional support for the adoption of multidimensional conceptualizations of narcissism, psychopathy, and Machiavellianism. For example, extraverted narcissism had

a *positive* indirect association with simple anti-natalism through the alive primal world belief, whereas neurotic narcissism had a *negative* indirect association with simple anti-natalism through the alive primal world belief. Psychopathic boldness had a *negative* indirect association with argument anti-natalism, whereas psychopathic meanness and psychopathic disinhibition had *positive* indirect associations with argument anti-natalism. Similarly, antagonistic Machiavellianism had small-to-medium positive correlations with each anti-natalist belief, whereas agentic Machiavellianism and planful Machiavellianism had small-to-medium *negative* correlations with simple anti-natalism and misanthropic anti-natalism. The divergent associations that the aspects of the Dark Triad had with anti-natalist beliefs suggest that narcissism, psychopathy, and Machiavellianism may be best represented as constellations of specific personality traits rather than as unidimensional constructs.

Overall, these findings show that personality traits are linked with the tendency to agree with anti-natalist beliefs. Further, our results show that particular social worldviews (e.g. the tendency to perceive the world as an enticing place) often mediate these associations. These results are important because anti-natalism has been largely neglected in public and academic discourse despite its implications for population ethics and moral theory (Schönegger, 2022). It would be beneficial for future researchers to continue investigating issues surrounding anti-natalism using a wide array of methodological approaches. For example, it would be helpful to learn even more about the factors that encourage the acceptance of anti-natalist beliefs or facilitate resistance to these ideas. Although the present study does not address the truth of anti-natalism, it does contribute to a descriptive portrait of the individuals who are likely to agree (or disagree) with anti-natalist arguments through the lens of personality.

Limitations and future directions

Although the present study had several strengths (e.g. the multidimensional conceptualization of dark personality traits), it is essential to acknowledge some of its potential limitations. The first limitation is that we relied on an online sample drawn from Prolific. The participants were predominantly White (76%), and the majority of the sample (69%) had earned at least a bachelor's degree, which may limit the generalizability of the present results. Future studies concerning this issue should attempt to recruit more diverse samples. The second limitation is that our use of multidimensional conceptualizations of dark personality traits represents an effort to extend research beyond the externalizing and antagonistic traits typically captured by unidimensional conceptualizations of the Dark Triad, but it is important to acknowledge that there is ongoing debate regarding the

structure and organization of particular facets within the Dark Triad (e.g. Rogoza & Ciecuch, 2018). It may also be beneficial for future studies concerning this issue to include other socially aversive personality traits such as spitefulness, sadism, and greed (Marcus & Zeigler-Hill, 2015). The third limitation is that we used a measure of primal world beliefs that is relatively new, and more research should employ this measure to investigate which human actions and philosophies are reflective of perceptions of the sort of world individuals believe themselves to inhabit. It is also important to emphasize that our results – and the results of Schönegger (2022) – do not necessarily indicate that dark personality traits are the “only” path to the endorsement of anti-natalist beliefs. For example, there may be other characteristics that foster anti-natalist attitudes, such as high levels of empathy or sensitivity to suffering (even though these characteristics may appear to clash with dark personality traits). That is, extreme levels of concern for the well-being of others may lead to the endorsement of anti-natalism because a desire to eliminate human (and non-human animal) suffering may serve as a rational path to the conclusion that procreation is morally wrong. Future studies should investigate the relationship between endorsement of anti-natalist beliefs and psychological characteristics that implicate heightened concern for the well-being of others (e.g. empathy, sensitivity to suffering, compassion). The fourth limitation is that we relied on the assessment of anti-natalist beliefs used by Schönegger, but those items have not been subjected to rigorous psychometric evaluation (e.g. the validity and test-retest reliability of those items have not been examined). As a result, it would be beneficial for future studies to extend this work by using other approaches for capturing anti-natalist beliefs.

Conclusion

The present research extends what is known about the associations that narcissism, psychopathy, and Machiavellianism have with anti-natalist beliefs by using multidimensional conceptualizations of these dark personality traits. We included primal world beliefs as potential mediators in an attempt to understand why certain dark triad personality traits are associated with anti-natalist beliefs. As expected, our results showed that certain dark personality traits (i.e. antagonistic narcissism, psychopathic meanness, psychopathic disinhibition, and antagonistic Machiavellianism) were positively associated with certain anti-natalist beliefs (i.e. argument, simple, and misanthropic). The pattern differed for local anti-natalism, which had weaker zero-order correlations with dark personality traits and showed no correlation with extraverted narcissism, antagonistic narcissism, psychopathic meanness, and psychopathic disinhibition. We hope that future research will continue to build on these results and provide a more complete

understanding of the connections between personality and the adoption of particular philosophical perspectives.

Notes

1. We replicated our analyses with the excluded participants in order to determine whether excluding these participants impacted our results in a substantial manner. The results of these additional analyses were quite similar to those reported in the primary text. Despite the overall similarities in the results, there were some differences. For example, the direct associations that extraverted narcissism, antagonistic narcissism, and antagonistic Machiavellianism had with local anti-natalism were statistically significant in the analyses that included the excluded participants even though these associations did not reach conventional levels of significance in the primary analyses.
2. Gender differences have often been found for dark personality traits (e.g. Jonason & Zeigler-Hill, 2018) and gender has been shown to moderate the associations that dark personality traits have with certain outcomes (e.g. Sauls et al., 2019). This led us to conduct exploratory analyses that included gender as a potential moderator of the mediational associations that dark personality traits had with anti-natalism attitudes through the primal world beliefs. However, gender did not moderate the results reported. That is, there was no evidence of moderated mediation. Further, including gender in these analyses did not significantly alter the reported results. In the interest of parsimony, we decided not to include gender in the final analyses nor do we discuss gender differences.

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