The Dark Triad traits in Australia and Turkey☆

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ABSTRACT

A primary contention of evolutionary models of the Dark Triad traits (i.e., narcissism, psychopathy, and Machiavellianism) is that they are adaptations for dealing with adverse socioecological circumstances. In this study ($N = 557$), we collected data from two countries that differ in socioecological conditions (i.e., Turkey and Australia). We measured perceptions of a dangerous and competitive world and individual differences in the Dark Triad traits. Turkish participants were higher in the Dark Triad traits than Australian participants were. All the Dark Triad traits were correlated with a competitive but not a dangerous worldview. Country-level differences in the Dark Triad traits were mediated by competitive worldviews, but not dangerous worldviews, and those effects were similar in each sex. And rates of narcissism depended on participant's sex and country. This study provided the first attempt to understand country-level differences in the Dark Triad traits using a life history framework.

Researchers have grown considerably interested in three related, aversive personality traits, known as the Dark Triad, composed of narcissism, Machiavellianism, and psychopathy. Narcissism is characterized by a sense of grandiosity, egotism, self-orientation, and lack of empathy (Turner & Webster, 2018), Machiavellianism is associated with manipulative behavior, self-interest, exploitation of others, and a ruthless lack of morality (Jones, 2016), and psychopathy is linked with reckless, cruel and callous attitudes, antisocial selfish behavior, and a lack of empathic skill and remorse (Cale & Lilienfeld, 2002). One reason for the considerable interest in these traits was their integration into a life history paradigm (Jonason, Koenig, & Tost, 2010). However, few studies have examined the role of context in predicting individual differences in the Dark Triad traits (Jones & Paulhus, 2010). This is essential because life history theory is about how organisms solve their adaptive tasks within some socioecology; that is, it is inherently interactionist. Particularly difficult environments may activate decision-making heuristics in people's brains that recalibrate their default slow response to the world (Mace, 2000) towards a faster solution as seen in individual differences in the Dark Triad traits. In this study, we sampled participants from Australia and Turkey to test a condition-dependent hypothesis of the Dark Triad traits.

While the countries might be economically tied (Turner, 2018), they differ in terms of the safety and competitiveness their citizens experience. Australia is the 13th safest country in in the world, whereas Turkey is 149th (Institute for Economics and Peace, 2018). Indeed, Australia may be the safest country in the world for women (Perper, 2019). Conversely and according to the World Fact Book,[1] Turkey (63rd) is far more economically competitive (i.e., wealth inequality) than Australia (134th) is. Given these obvious differences in these two countries, we treat country of origin as a quasi-experimental manipulation of socioecological conditions to test a condition-dependent hypothesis regarding the Dark Triad traits.

1. A life history view of the Dark Triad traits

Life history theory (Wilson, 1975) was originally used to describe differences between species in terms of how organisms allocate finite resources in time and metabolic energy towards the two most fundamental Darwinian tasks of survival (i.e., somatic) and reproduction (i.e., mating). An organism that spends too much time doing one may find insufficient time to do the other. Take for example, the Giant Panda (*Ailuropoda melanoleuca*) who spends so much time (≈ 14 h/day) eating bamboo (i.e., 99% of their diet) that is hard to digest for an animal evolved to be a carnivore (e.g., short intestine conducive for digesting

meat) that they spend a deleteriously low amount of time engaging in mating.[2] Organisms that trade-off mating for survival are called *slow* or *K*-selected life history strategists and have (relatively) long lives, long developmental periods, a high level of cognitive sophistication, and have a small number of offspring in their lifetime (e.g., *Pan troglodytes* [common chimpanzee], *Loxodonta africana* [African elephant]). In contrast, organisms that trade-off survival for mating are called *fast* or *r*-selected life history strategists and have (relatively) short lives, mature quickly, are less cognitively sophisticated, and have a large number of offspring in their lifetime (e.g., *Rattus rattus* [Black rat], *Oryctolagus cuniculus* [European rabbit]). When applied to people, this theory has often been used to account for within-species differences or personality traits (Figueredo et al., 2009).

A substantial body of work suggests the Dark Triad traits might be *fast* life history traits. For example, men, more than women, are characterized by these traits around the world (Jonason et al., 2017; Jonason, Li, & Czarna, 2013) which may be because over ancestral time men who were high on the Dark Triad traits may have had more reproductive success (Carter, Lyons, & Brewer, 2018) whereas women high on the traits have had more reproductive health problems (Jonason & Lavertu, 2017). Other evidence suggests the Dark Triad traits are associated with limited existential values (Turner, 2018), a tendency to prioritize immediate outcomes (Jonason et al., 2010), and impulsivity (Jones & Paulhus, 2011). While traditionally considered pathologies (Kowalski, 2001), these traits might be treated as pseudo-pathologies (Crawford & Anderson, 1989) whereby they benefit the individual at the expense of the group. Taken together, the Dark Triad traits might capture some of the individual differences in the psychological features of fast life history strategies.

Challenging living conditions are likely to catalyze the necessity for agentic traits so individuals can "get ahead". The primary test for our condition-dependent hypothesis (i.e., phenotypic plasticity) is to compare rates of the Dark Triad traits in both countries. If true, the traits should be higher in Turkey than Australia. In more challenging locations, the "math" for being agentic and exploitive may make sense to a person's adaptive heuristics (Wilson, Near, & Miller, 1996). However, documenting country-level differences in the Dark Triad traits is a potentially weak test of our condition-dependent hypothesis because the way the countries differ needs to be pinpointed. Therefore, we also compare worldviews of the samples and how those worldviews might account for (i.e., mediate) country-level differences in the Dark Triad traits. Given that those high on the Dark Triad traits may see the world through a competitive lens (Jonason, Wee, & Li, 2015) and are not particular concerned with their survival (Turner, 2018), we expect only worldviews of competitiveness to mediate the country-level differences in the Dark Triad traits. Such perceptions may be inputs in the adaptive heuristics that produce outcomes as observed in behavioral syndromes (i.e., personality traits).

Beyond our country-level comparisons, we took this opportunity to further understand why the sexes might differ on the Dark Triad traits. First, we expect to replicate sex differences in the Dark Triad traits and, second, suggest that those sex differences are a function of competitive worldviews. Engaging in agentic behaviors like those associated with the Dark Triad traits may be more common in men than women because selection pressures "punished" ancestral women for engaging in a "fast" life strategy (Jonason & Lavertu, 2017). In contrast, men's agentic behavior may be facilitated by being competitively minded, which collectively, are likely to have operated as a coherent system that facilitates Darwinian fitness. In addition, we test a further prediction that local conditions could nudge men and women to adopt different adaptive solutions. In particular, we test whether (1) sex differences vary by country of origin and (2) mean-rates of the Dark Triad traits differ within men and women by country of origin. If the payoff for the

Dark Triad traits is highest in unsafe/competitive places (i.e., where selection pressures are stronger) for both sexes, there should be no sex difference (i.e., less variance) in Turkey. When in safe/less competitive places (i.e., where selection pressures are weaker), both sexes should score lower on the Dark Triad traits because the payoff for being agentic will have been locally lowered, but because men maintain Darwinian benefits women do not for being agentic (e.g., short-term mating benefits), there should be a sex difference in the Dark Triad traits only in Australia (i.e., more variance).

In hopes of understanding potential cross-cultural variance in the Dark Triad traits and testing a life history model of the traits (a) we examine differences in the traits in Turkish and Australian undergraduates, (b) test whether those differences are mediated by perceptions of local dangerousness and competitiveness, and (c) replicate sex differences in the traits. We contend that the Dark Triad traits are condition-dependent adaptations that should be responsive to socio-ecological conditions leading to (H1) higher rates of the traits in more competitive environments (i.e., Turkey) and (H2) that differences should be a function of perceptions of those conditions. We also test whether sex differences in the Dark Triad traits are dependent on location (H3) and mediated by perceptions the world is competitive (H4).

2. Method

2.1. Participants and procedure

Participants ($N = 557$; 61% female, 1 Turkish participant identified as "other") were undergraduate students, aged 18–73 years old ($M = 23.23$, $SD = 6.44$), from Australia ($n = 314$; 74% female) and Turkey ($n = 243$; 44% female). Site-specific, sample sizes were determined based on estimates of the average correlation ($r \approx 0.20$) in social and personality psychology (Richard, Bond, & Stokes-Zoota, 2003) to minimize estimation error (Schönbrodt & Perugini, 2013). Participants completed an online, anonymous, and self-directed survey in their respective language after providing informed consent. Australian participants were solicited through a participant management system; Turkish participants were solicited through their courses; and all participated in exchange to be put in a drawing for a gift card. They completed a series of personality questionnaires, provided demographic responses, and were thanked and debriefed upon completion. Ethical approval was sought at Western Sydney University (H10499) with reciprocal approval sought at Sakarya University.

2.2. Measures

The Short Dark Triad scales in English (Jones & Paulhus, 2014) and Turkish (Özsoy, Rauthmann, Jonason, & Ardıç, 2017) were used. Participants reported their agreement (1 = *strongly disagree*; 5 = *strongly agree*) with statements such as "People see me as a natural leader" (i.e., narcissism), and "It's true that I can be mean to others" (i.e., psychopathy). Items were averaged to create an overall score of narcissism (Cronbach's $\alpha = 0.72$), Machiavellianism ($\alpha = 0.76$), and psychopathy ($\alpha = 0.74$).[3]

Dangerous and competitive worldviews were measured using two 10-item scales (Duckitt & Fisher, 2003). Because there were no translations of these measures in Turkish, we followed the standard translation-back translation procedure used in cross-cultural research (Hilton & Skrutkowski, 2002). A team of three native Turkish-speakers (two of whom were fluent in English) served as research assistants to translate the English items into Turkish. The team adjusted syntax of

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[2] https://www.chinahighlights.com/giant-panda/behavior.htm.

[3] Because we detected weak factorial invariance for the Dark Triad traits and no invariance for worldviews (see Supplement 1) and given the somewhat large number of tests, we adopted a more conservative threshold for the rejection of the null hypothesis.

Table 1

Descriptive statistics and sex differences in the Dark Triad traits and worldviews.

Dark Triad	M (SD)			t	d
	Overall	Men	Women		
Narcissism	2.82 (0.62)	2.99 (0.56)	2.71 (0.64)	5.23*	0.47
Machiavellianism	3.18 (0.68)	3.38 (0.63)	3.05 (0.67)	5.79*	0.51
Psychopathy	2.08 (0.63)	2.31 (0.62)	1.93 (0.59)	7.30*	0.63
Worldviews					
Belief in competitive world	2.34 (0.59)	2.50 (0.56)	2.24 (0.59)	5.15*	0.45
Belief in dangerous world	3.24 (0.64)	3.21 (0.66)	3.26 (0.63)	−0.89	−0.08

Notes. *d* is Cohen's *d* for effect size.

* *p* < .001.

the statements to avoid awkward phrases, as direct translations of English to Turkish involved consideration for conceptual and not just literal equivalence to the original scales. For the translations to maintain conceptual and semantic equivalence, colloquial phrasing was used. Minor final adjustments were made to the Turkish translations on a few items after translating them back into English to capture fuller semantic equivalence from the original English question items. After this, the second and third authors and a further independent academic from Turkey (also fluent in English) discussed all translations to decide on the final translations for each scale items. Ultimately, participants were asked their agreement (1 = *strongly disagree*; 5 = *strongly agree*) with statements such as "Any day now chaos and anarchy could erupt around us. All the signs are pointing to it" and "Basically people are objects to be quietly and coolly manipulated for one's own benefit" in their respective languages. Items were averaged to create overall scores for dangerous (α = 0.78) and competitive (α = 0.70) worldviews which were, themselves, correlated (r[555] = 0.12, p < .01).

3. Results

Men scored higher on the Dark Triad traits than women did, men scored higher on competitive worldviews than women did (Table 1), and Turkish participants scored higher than Australian participants did on the Dark Triad traits and competitive and dangerous worldviews (Table 2). A Country × Sex between-groups ANOVA revealed one interaction for narcissism (F[1, 552] = 8.08, p < .001, η_p^2 = 0.01), suggesting that Australian women (M = 2.55, SD = 0.60) were less (t [337] = 7.36, p < .001, d = −0.86) narcissistic than Turkish women (M = 3.06, SD = 0.59) and while Australian men (M = 2.86, SD = 0.61) were also less (t[215] = 2.74, p < .01, d = −0.37) narcissistic than Turkish men (M = 3.07, SD = 0.51), the effect was weaker in men than women (|Δd| = 0.49). There was no sex difference in Turkey, but men were more narcissistic than women were in Australia (t[312] = 4.45, p < .001, d = 0.50).

Narcissism (r[555] = 0.25, p < .001), Machiavellianism (r [555] = 0.49, p < .001), and psychopathy (r[555] = 0.53, p < .001) were correlated with beliefs in a competitive world; in a standard multiple regression with all three traits (R^2 = 0.35, F[3, 553] = 100.64, p < .001) only Machiavellianism (β = 0.32, p < .001) and psychopathy (β = 0.38, p < .001) had residuals. Narcissism (r[555] = 0.12, p < .01), Machiavellianism (r[555] = 0.19, p < .001), and psychopathy (r[555] = 0.13, p < .01) were correlated with beliefs in a dangerous world; in a standard multiple regression (R^2 = 0.04, F[3, 553] = 7.68, p < .001) only Machiavellianism (β = 0.16, p < .001) had a residual. The correlations between the Dark Triad traits and worldviews were larger for competitive worldviews and Machiavellianism (Steiger's z = −5.94, p < .01) and psychopathy (z = −7.95, p < .01) in particular,[4] but differed little by location, sex,

Table 2

Descriptive statistics and country differences in the Dark Triad traits and worldviews.

Dark Triad	M (SD)		t	d
	Australia	Turkey		
Narcissism	2.63 (0.61)	3.06 (0.55)	−8.66*	−0.74
Machiavellianism	2.97 (0.67)	3.45 (0.58)	−8.9*	−0.77
Psychopathy	1.95 (0.64)	2.25 (0.58)	−5.74*	−0.49
Worldviews				
Belief in dangerous world	3.01 (0.67)	3.54 (0.45)	−10.59	−0.93
Belief in competitive world	2.23 (0.63)	2.48 (0.51)	−5.16*	−0.44

Notes. *d* is Cohen's *d* for effect size.

* *p* < .001.

and location × sex.[5]

We adopted an exploratory approach to mediation given the novelty of our study and our inability to find evidence of invariance. First, we tested if country differences (Step 1) in narcissism (β = 0.35, p < .001), Machiavellianism (β = 0.36, p < .001), and psychopathy (β = 0.24, p < .001) were mediated by individual differences in competitive worldviews. We found partial mediation for narcissism (ΔR^2 = 0.03, F[1, 554] = 22.35, p < .01; |Δβ| = 0.05); an effect that was present in men (ΔR^2 = 0.05, F[1, 214] = 10.68, p < .01; |Δβ| = 0.04) and women (ΔR^2 = 0.02, F[1, 336] = 9.69, p < .01; |Δβ| = 0.02). We found partial mediation for Machiavellianism (ΔR^2 = 0.18, F[1, 554] = 144.45, p < .01; |Δβ| = 0.10); an effect that was present in men (ΔR^2 = 0.07, F[1, 214] = 16.61, p < .01; |Δβ| = 0.05) and larger (p < .01) in women (ΔR^2 = 0.27, F[1, 336] = 147.48, p < .01; |Δβ| = 0.12). We found partial mediation for psychopathy (ΔR^2 = 0.24, F[1, 554] = 186.17, p < .001; |Δβ| = 0.11), an effect that was absent in men because the country level difference was not significant (β = 0.10) but was present in women (ΔR^2 = 0.25, F[1, 336] = 118.95, p < .001; |Δβ| = 0.06).

Second, we examined if sex differences (Step 1) in narcissism (β = −0.22, p < .001), Machiavellianism (β = −0.24, p < .001), and psychopathy (β = −0.29, p < .001) were mediated by individual differences in competitive worldview. We found partial mediation for narcissism (ΔR^2 = 0.05, F[1, 554] = 27.73, p < .001; |Δβ| = 0.05); an effect that was absent in Turkey because there was no sex difference (β = −0.02) and partial in Australia (ΔR^2 = 0.05, F[1, 311] = 15.39, p < .001; |Δβ| = 0.02). We found partial mediation for Machiavellianism (ΔR^2 = 0.20, F[1, 554] = 152.63, p < .001; |Δβ| = 0.10); an effect that was not present in Turkey because there was no sex difference (β = −0.09) and partial in Australia

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[4] This effect was weaker for narcissism (z = −2.49, p < .05).

[5] The correlation between Machiavellianism and competitive worldviews was larger (z = 3.30, p < .01) in Australia (0.54) than in Turkey (0.31). No other comparisons passed the 0.01 threshold for rejection. Details about weaker (p < .05) comparisons are available upon request.

($\Delta R^2 = 0.27$, $F[1, 311] = 119.61$, $p < .001$; $|\Delta\beta| = 0.06$). We found partial mediation for psychopathy ($\Delta R^2 = 0.23$, $F[1, 554] = 182.05$, $p < .001$; $|\Delta\beta| = 0.10$); an effect that was partial in Australia ($\Delta R^2 = 0.25$, $F[1, 311] = 115.65$, $p < .001$; $|\Delta\beta| = 0.05$) and full in Turkey ($\Delta R^2 = 0.17$, $F[1, 240] = 53.33$, $p < .001$; $|\Delta\beta| = 0.10$).

4. Discussion

For the first time, we have provided evidence for country-level differences in the Dark Triad traits based in life history theory. Prior cross-national work (Jonason et al., 2017, 2013) relied on convenience samples of people from different countries (e.g., Brazil, Japan, Singapore) to document cross-national consistency and to avoid relying solely on North American or Western European samples. In contrast, we targeted two countries that differ in terms of safety and wealth inequality to determine if the Dark Triad traits could be sensitive to these differences. We start with the assumption that people are mostly similar around the world and that local cultural forces dictate adjustments to one's life history strategy. Based on data in the World Fact Book, we expected and found that in a quantifiably "more competitive" country (i.e., Turkey), scores on the Dark Triad traits were higher than in a "less competitive" country (i.e., Australia), suggesting that the Dark Triad traits might be systematic response patterns to the differences in the countries.

We took this one step further and examined the role of perceptions of the world as a (1) quasi-manipulation check that the two countries are different and (2) to test whether these perceptions mediated country-level differences in the traits. Not only did we find that Turkish people perceive their country to be more dangerous and competitive than Australians perceive their country, we found that perceptions of competitiveness (not dangerousness) mediated the country-level differences in the Dark Triad traits. This is a key insight because it demonstrates that the heuristic systems that evaluate risk and generate responses like those characterized by the Dark Triad traits are sensitive to contextual inputs. Evolutionary models suggest that organisms engage in implicit information processing when they adjust their life history strategies (Figueredo et al., 2009). The systems take in information about the world—in this case its competitiveness as evidenced through wealth inequality—which may be processed and then a response is generated—in this case, to be more Machiavellian (e.g., deceitful), narcissistic (e.g., selfish), and psychopathic (e.g., exploitive).

Life history models of personality provide strong a priori reasons for why the sexes might differ in personality traits. Personality traits are behavioral regularities or syndromes in people's lives and behaviors can have asymmetrical benefits and costs in the sexes (Jonason & Lavertu, 2017; Turner, 2018). Consistent with that, men viewed the world as more competitive and were higher in the Dark Triad traits than women and sex differences in the latter were mediated by sex differences in the former. This suggests that a key reason men are higher than women in the Dark Triad traits is because men tend to see the world through competitive lenses more than women do.

However, when we examined sex differences across the different locations, we found something quite interesting. Our evidence suggests that while men's scores on the Dark Triad traits were sensitive to local effects in their countries, women's scores were far more sensitive, and there was no sex difference in narcissism in Turkey but there was one in Australia. The implications of this are less than clear given the exploratory nature of this test, our lack of metric invariance, and the fact that this rather weak effect was only in narcissism. Nevertheless, some conjecture is warranted. When experiencing conditions like those in Turkey, both sexes were high in narcissism, suggesting that this trait might be adaptive when people are under threat. When people were under less threat, as in Australia, both sexes became less narcissistic, but this decrease was stronger in women. Less competitive environments may lessen the need to be selfish, especially for women. Women may be predisposed to being less selfish and, thus, when paired with

their preferred, uncompetitive environment, they better maximize their less selfish disposition. In contrast, because men, no matter their local environment, can benefit more from being selfish, they may decrease less than women do in terms of narcissism in a less competitive place. Importantly, we did not find evidence for a sociocultural hypothesis that more gender equality—as seen in Australia—leads to smaller sex differences; we found just the opposite of this. Our effects are consistent with evolutionary models in that when selection pressures are lessened, as they might be in Australia, more variance develops; selection pressures reduce variance as potentially seen in Turkey.

In summary, we have provided the first condition-dependent tests of variance in the Dark Triad traits inconsistent with classical views of these traits (Kowalski, 2001) and more consistent with an evolutionary perspective. From this latter view, these traits suggest might be pseudopathologies (Crawford & Anderson, 1989), conferring benefits to the individual at the cost of others (Jonason & Zeigler-Hill, 2018). Fast life history strategies—as seen in the Dark Triad traits—make the most evolutionary sense when an organism is in a stochastic, competitive, or harsh environment. Organisms that have the phenotypic plasticity to respond to local conditions will fare better in the Darwinian arms race than those who have a fixed pattern. Indeed, if the Dark Triad traits were fixed alternative social/sexual strategies, the case for the adaptiveness would be far harder to make in our view.

4.1. Limitations and conclusions

Despite presenting a unique test of how and why the Dark Triad traits might differ in two economically, socially, and historically different countries, the study, is nonetheless limited. First, the sample could be considered W.E.I.R.D. (i.e., Western, educated, industrialized, rich, and democratic; Henrich, Heine, & Norenzayan, 2010) because it was composed of college students, although Turkey might not well-characterized as a "Western" nation given its religiosity. College students may be relatively affluent and live a particularly safe life relative to members of "lower classes" in each country which may attenuate the correlations and effects we reported. Nevertheless, by sampling college students we have minimized some extraneous variance (e.g., age).

Second, instead of manipulating worldviews, we focused on self-reported perceptions of worldviews in two objectively different countries. This means we cannot make strong causal inferences here but, given our effects were consistent with our predictions, we feel reasonably confident in them. However, it seems unlikely that an experimental prime will be enough to change people's life history strategies as captured in the Dark Triad traits given that it should be pervasive socioecological stresses not artificial, experimental procedures that can actually change life history strategies and their related personality features.

Third, the choice of Turkey and Australia as sample-sites is limited. Future work will need to expand on the range of countries being tested to further test our hypotheses. There are likely many other countries that could be tested and more powerful tests can be afforded by correlating country-level indicators with mean-level Dark Triad scores along with the magnitudes of the sex differences.

Fourth, the Dark Triad measure had weak factorial invariance. The measures of worldviews fared worse which might be a function of these scales not being rigorously psychometrically tested, but instead, designed as efficient versions of longer measures (Meredith, 1993). This qualifies our results (see Supplement 1), but also begs more detailed exploration as to why this might be the case; a question beyond the scope of our study. The problem rests in our ability—by modern standards—to compare both correlations and means across countries and to determine whether differences are genuine or methodological artifacts. Nevertheless, future work should consider why measurement invariance exists across countries like these beyond methodological differences. For example, perhaps greater country-level societal instability is associated with more measurement instability. Importantly, there

was limited variance in the correlations across site (and sex), suggesting that this measurement problem might not be fatally problematic given the nature of our tests. Nevertheless, we encourage the reader to focus, as we have, on hypothesis-testing instead of these measurement issues.

In conclusion, we have provided evidence that the Dark Triad traits might be higher in Turkey than in Australia. This country-level effect was mediated by perceptions of how competitive, but not how dangerous, the country was. We further documented within-sex and between sex differences in the traits are dependent on country. We contend these results are consistent with a condition-dependent hypothesis for the Dark Triad traits, suggesting they are pseudopathologies geared towards maximizing Darwinian fitness in difficult socioecologies.

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