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Fast, but not so Furious. On the Distinctiveness of a Fast Life History Strategy and the Common Core of Aversive Traits

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Abstract

Evolutionary Psychology has considered a Fast Life History Strategy (FLHS), denoting an individual's tendency to invest more resources in proliferation than in child-rearing, to be responsible for the emergence of aversive traits. Empirical evidence for this notion has been inconsistent, however. Herein, we tested whether FLHS is an adequate representation of the underlying disposition of aversive traits (N = 869). To this end, we considered twelve specific aversive traits, and additionally measured and modeled the common core of these traits. We found only weak correlations of FLHS with individual aversive traits as well as with their common core. In sum, the results suggest that the common core of aversive traits is only marginally reflected in FLHS.

Keywords

life history theory, fast life history strategy, dark core of personality, aversive traits

Relevance Statement

Although a Fast Life History Strategy (FLHS) is related to some aversive traits to some extent, this study suggests that FLHS lacks relevant aspects of what is common to all aversive traits and thus does not adequately represent their underlying disposition.

Key Insights

- FLHS was only weakly related to some aversive traits.
- FLHS shared little variance with common core of aversive traits.
- FLHS was correlated most strongly with self-reported selfishness.
- Relevant aspects of aversive traits are hardly represented in FLHS.
- FLHS does not represent underlying disposition of aversive traits.

Over the last decades, research in personality psychology has increasingly directed attention to personality traits linked to socially aversive and ethically questionable attitudes and behaviors, often denoted as *dark traits*. Most prominent are arguably the components of the "Dark Triad", i.e., Machiavellianism, Narcissism, and Psychopathy (Paulhus & Williams, 2002), although there are many other aversive traits such as Spitefulness (Marcus et al., 2014) or Greed (Seuntjens et al., 2015). In light of substantial theoretical and empirical overlap between aversive traits, there is now considerable agreement that socially aversive traits share a common dispositional core (Jonason et al., 2017; Moshagen et al., 2018; Muris et al., 2017; Schreiber & Marcus, 2020; Vize et al., 2020). This common core, termed the Dark Factor of Personality (D), was recently defined as "the general tendency to maximize one's individual utility—disregarding, accepting, or malevolently provoking disutility for others—, accompanied by beliefs that serve as justifications" (Moshagen et al., 2018, p. 657). Prior research has tried to approximate this common core by established personality constructs, one of which is the focus of the present work.

Specifically, one recurring theme invoked to account for the common basis of aversive traits is Life History Theory (LHT). Jonason et al. (2012), for instance, concluded that the "Dark Triad may indicate a fast life strategy based on immediate rewards and gratification" (p. 193). LHT is a framework originating in evolutionary biology which classifies organisms by how they spend their finite resources to enhance their reproductive fitness. Specifically, LHT locates organisms on a continuum from *r*- to *K*-selected (MacArthur & Wilson, 1967). Organisms closer to the *r*-endpoint mainly invest their resources in mating and producing as many offspring as possible, whereas organisms closer to the *K*-endpoint mainly invest their resources in their own continued survival as well as in parenting and survival of a small number of offspring (Pianka, 1970). These strategies are considered to be optimized to the circumstances and environment in which an organism lives: unstable environments with higher mortality rates cause more short-term oriented characteristics and behaviors located at the *r*-endpoint of the continuum (e.g., short gestation times, early reproduction, large litters, low parental investment; Kaplan &

Gangestad, 2005), whereas stable and more persisting environments with lower mortality rates cause more long-term oriented characteristics and behaviors located at the *K*-endpoint of the continuum (e.g., delayed sexual development, low fertility, high parental investment, high group cohesion; Kaplan & Gangestad, 2005). Accordingly, and referring to the average life spans and reproduction rates of organisms pursuing these strategies, *r*- and *K*-selection are often called Fast and Slow Life History Strategy, respectively.

Even though LHT originally referred to differences between species, it has been adapted by evolutionary psychologists to explain individual differences among humans (Figueredo et al., 2005; Nettle & Frankenhuis, 2020). Like most mammals, humans are generally highly *K*-selected, but some individuals may nonetheless lean more towards the *r*-end of the continuum (Brumbach et al., 2009). Characteristic of human life strategy is a comparably long life span, the organization in small, mutually dependent and stable social groups, and a great investment of time and energy in child-rearing. Accordingly, human evolution strongly favored long-term oriented reciprocal altruistic behavior (Boyd & Richerson, 1988; Trivers, 1971). Put differently, humans tend to consider (both positive and negative) future consequences of their social interactions. Taking into account long-term benefits instead of purely pursuing short-term gains in turn leads to mostly cooperative behavior. Nonetheless, in such highly cooperative environments, short-term cheating and exploitation may yield benefits that outweigh the costs resulting from potential punishment and are therefore also expected to develop and persist (Troisi, 2005). Such behavior is facilitated by future discounting and low self-control and has therefore been interpreted as manifestations of a faster Life History Strategy (Jonason & Tost, 2010). In other words, "what is often disparaged as a maladjusted personality marked by impulsivity and lack of self-control instead can be conceptualized within LHT as an adaptive stable strategy" (Buss, 2009, p. 361; see also Dunkel et al., 2013).

Although impulsivity and behaviors directed at instant gratification do represent aspects of some aversive traits, most notably of Psychopathy (Hart et al., 1992; Paulhus & Williams, 2002), these attributes are neither sufficient nor necessary to explain aversive behavior in general. First, whereas impulsivity and the pursuit of immediate rewards may in some cases incur externalities or interfere with others' needs and may thus be perceived as aversive, they are not socially or ethically aversive attributes per se. For example, impulsively buying an item at the grocery store that was not on the shopping list rarely causes anybody harm and can thus hardly be considered socially aversive. Second, impulsivity and a focus on instant gratification are not universally featured in aversive traits. In fact, short-term thinking is conceptually unrelated to traits such as Sadism (deriving pleasure from the suffering of others; O'Meara et al., 2011) or Moral Disengagement (dismissing ethical standards for oneself; Moore et al., 2012), and is even partially incompatible with Machiavellianism (*planful* and *strategic* manipulative behavior; Jones & Paulhus, 2011). Thus, whereas impulsive and short-term oriented behavior may be considered manifestations of a Fast Life History Strategy, it appears

oversimplified to assume that they reflect the common core of (all) aversive traits, in turn questioning whether a Fast Life History Strategy is an adequate approximation of the underlying disposition of aversive traits.

Indeed, the empirical picture does not unanimously support a link between a Fast Life History Strategy and single specific aversive traits and outcomes. On the one hand, a link between aversive traits and Life History traits has been demonstrated by positive correlations between the Dark Triad components and measures of short-term mating (.22 < *r* < .50; Jonason et al., 2009), by Machiavellianism loading negatively on a latent *K*-factor (combining several indicators of Life History traits, with low levels indicating a Fast Life History Strategy; Figueredo et al., 2005), or by criminal offending being associated with increased reproductive success and less committed pair bonding compared to a non-criminal lifestyle (Yao et al., 2014). On the other hand, social deviance was not part of a higher-order Life History factor (Brumbach et al., 2009), faster strategists were no less cooperative and did not relate to a more selfish orientation than slower strategists (Wu et al., 2017), and the *K*-factor correlated more strongly with HEXACO Extraversion and Conscientiousness (*rs* = .53 and .46, respectively) than with Agreeableness or Honesty-Humility (*rs* = .24 and .21, respectively; Strouts et al., 2017) — although the latter are known to be of primary and even exclusive relevance for prosocial and ethical behavior (Heck et al., 2018; Thielmann et al., 2020; Zettler et al., 2021). Additionally, there is evidence indicating that different aspects of socially aversive traits are differentially related to Life History Strategy. Specifically, whereas the Impulsive Antisociality facet of Psychopathy and the Entitlement/Exploitativeness facet of Narcissism were negatively correlated with a Slow Life History Strategy, the Fearless Dominance facet of Psychopathy and the Leadership and Grandiose Exhibitionism facets of Narcissism were positively correlated with a Slow Life History Strategy (McDonald et al., 2012). Thus, despite associations between a Fast Life History Strategy and some aversive traits and outcomes, extant evidence is mixed, at best. By implication, there is even less evidence to support the more wide-ranging conclusion that a Fast Life History Strategy may indeed represent the commonalities of all aversive traits.

The present study sought to provide more direct and conclusive evidence on this question, that is, whether a Fast Life History Strategy adequately represents the common dispositional basis of aversive traits. To this end, we considered not only a wide range of (twelve) specific aversive traits, but additionally measured and modeled the common core of these traits and related them to a measure of life history strategy. Specifically, we first approximated the common core of the measured aversive traits via bifactor modeling in which the general factor captures the commonalities among all items used to measure aversive traits (Reise, 2012; see also Moshagen et al., 2018). Secondly, we measured the common core of dark traits directly through a corresponding item set designed specifically to operationalize the underlying dispositional tendency of which all aversive traits are specific manifestations (Bader, Hartung, et al., 2021; Moshagen,

Zettler, & Hilbig, 2020). If a Fast Life History Strategy indeed represents the underlying disposition of aversive traits, it must be substantially related to most, if not all, specific aversive traits and—arguably even more strongly so—to their common core, both when modeled via the single specific aversive traits and when operationalized via an item set designed to measure the common core of these traits directly.

Method

The study was not preregistered. Data and analysis scripts are available in the Supplementary Materials. The study was run based on approval by the ethics committee of the University of Koblenz-Landau (#154_2018).

Measures

Fast Life History Strategy was assessed using the German translation of the Mini-K (Hammerl, 2017). The 20-item scale covers six dimensions of Life History Strategy (insight, planning, and control; mother/father relationship quality; friend social contact/support; family social contact/support; harm avoidance; community involvement; Figueredo et al., 2006), with lower scores indicating a faster Life History Strategy. Additionally, we measured a total of twelve aversive traits as summarized in Table 1.[1] Finally, as a direct measure of the common core of aversive traits, we used the German D70 (Bader, Horsten, et al., 2021; Moshagen, Zettler, & Hilbig, 2020). All items were rated on a 5-point Likert Scale (1 = "strongly disagree" to 5 = "strongly agree").

1) Although there is no consensus on which traits ought to be considered 'aversive', we relied on these twelve traits because they arguably represent a comprehensive array of aversive traits (as compared to the so-called Dark Triad or Dark Tetrad most commonly considered in this context) and have been shown to load on a common aversive core (Moshagen, Zettler, & Hilbig, 2020).

Table 1

Overview of Included Aversive Traits and Corresponding Inventories

Trait	Scale	Number of items	Definition	Sample item	Source
Greed	Dispositional Greed Scale[a]	7	"the desire to acquire more and the dissatisfaction of never having enough" (p. 522)	One can never have too much money.	Seuntjens et al., 2015
Machiavellianism	German Short Dark Triad	9	"self-interest and tendencies toward deceptiveness, exploitation and manipulation of others, cynical perspective on life and interpersonal relationships" (p. 855)	I like to use clever manipulation to get my way.	Malesza et al., 2019
Narcissism	German Short Dark Triad	9	"self-absorption, dominance, and feelings of entitlement and grandiosity, as well as devaluation of others" (p. 855)	I know that I am special because everyone keeps telling me so.	Malesza et al., 2019
Psychopathy	German Short Dark Triad	9	"high thrill-seeking, callousness, interpersonal antagonism, manipulation, and anti-social behavioral style" (p. 855)	It's true that I can be mean to others.	Malesza et al., 2019
Sadism	Short Sadistic Impulse Scale	10	"a person who humiliates others, shows a longstanding pattern of cruel or demeaning behavior to others, or intentionally inflicts physical, sexual, or psychological pain or suffering on others in order to assert power and dominance or for pleasure and enjoyment" (p. 523)	Hurting people would be exciting.	O'Meara et al., 2011
Amoralism Crudelia	AMR40[a]	13	"amoralism involving brutality" (Knežević, 2008, as cited in Paulhus & Jones, 2015, p. 587)	It is all the same to me how people around me feel, If I am enjoying myself.	Knežević, 2003
Amoralism Frustralia	AMR40[a]	14	"amoralism caused by frustration" (Knežević, 2008, as cited in Paulhus & Jones, 2015, p. 587)	All is fair in love and war.	Knežević, 2003
Egoism	Egoism Scale	12	"the excessive concern with one's own pleasure or advantage at the expense of community well-being" (p. 349)	It is hard to get ahead without cutting corners here and there.	Weigel et al., 1999
Moral Disengagement	Propensity to Morally Disengage Scale	8	cognitively processing decisions and behavior with ethical import in a way that	Considering the way people grossly misrepresent themselves, it's hardly a	Moore et al., 2012

Trait	Scale	Number of items	Definition	Sample item	Source
			allows to behave unethically without feeling distress	sin to inflate your own credentials a bit.	
Psychological Entitlement	Psychological Entitlement Scale	9	"a stable and pervasive sense that one deserves more and is entitled to more than others" (p. 31)	I honestly feel I'm just more deserving than others.	Campbell et al., 2004
Self-Centeredness	Self-Control Scale, Self-Centeredness Subscale	4	"indifferent, or insensitive to the suffering and needs of others" (Gottfredson & Hirschi, 1990, p.89, as cited in Grasmick et al., 1993)	If things I do upset people, it's their problem not mine.	Grasmick et al., 1993
Spitefulness	Spitefulness Scale	17	"a behavior or preference that would harm another but that would also entail harm to oneself. This harm could be social, financial, physical, or an inconvenience" (p. 566)	It is sometimes worth a little suffering on my part to see others receive the punishment they deserve.	Marcus et al., 2014

[a]An ad-hoc translation was used.

Participants and Procedures

Data for this study were collected as part of the Prosocial Personality Project (PPP), a large-scale web-based study involving six measurement occasions for the base project and several follow-up assessments.[2] All data was collected via a German online panel provider (Respondi). A detailed documentation of the project including verbatim items of all constructs assessed as well as more detailed information on sample composition, sample sizes at each measurement occasion and exclusion criteria is available on the OSF (https://osf.io/m2abp).

D70 was assessed at T1; Greed, Machiavellianism, Narcissism, Psychopathy, and Sadism, were assessed at T3 (61 days after T1 on average) of the base project. Life History Strategy (Mini-K), in turn, was assessed at follow-up 2020-05a (171 days after T1 on average); Crudelia, Frustralia, Egoism, Moral Disengagement, Psychological Entitlement, Self-Centeredness, and Spitefulness were assessed at follow-up 2020-05b (167 days after T1 on average). The order of scales was randomized within each measurement occasion. Moreover, at each measurement occasion, two attention check items were embedded within the scales (e.g., "Please select 'strongly disagree' here. This serves to check your attention.").

The final sample for this study consisted of 869 participants (46% female, aged 18 to 66 years, M = 44.0, SD = 12.5; all demographics measured at T1) who provided valid

2) Besides the D70, the data reported herein have not been published before. For other publications that were based on data from the PPP, please see the project's documentation on the OSF at https://osf.io/m2abp/.

answers for the D70 and the Mini-K, passed both attention checks at each measurement occasion, and did not provide invalid answers to more than 50% of the scales at a respective measurement occasion. According to the general a priori exclusion criteria defined for the PPP, responses to a given scale were defined as invalid if we suspected inattentive response behavior on that scale (based on response times of less than 2 seconds per item on average and/or very low variation, i.e., $SD < 0.2$ at T1 and $SD = 0$ at all further measurement occasions). Calculations for bivariate correlations are based only on those participants who provided complete and valid answers on the respective criterion scale (see Table 2 for specific *n*s).

Table 2

Descriptive Statistics, Reliabilities and Correlations Between K and All Measures Included

Trait	*n*	*M*	*SD*	α	ω_u	K [95% CI]
K	869	3.53	0.47			
Spitefulness	866	1.79	0.54	.89	.89	-.24 [-.33; -.15]
Egoism	862	2.46	0.62	.85	.85	-.32 [-.40; -.23]
Psychological Entitlement	865	2.66	0.66	.87	.87	-.13 [-.23; -.03]
Moral Disengagement	866	1.95	0.60	.81	.81	-.13 [-.23; -.04]
Self-centeredness	867	2.33	0.76	.73	.74	-.30 [-.40; -.21]
Crudelia	866	1.97	0.57	.88	.90	-.46 [-.55; -.37]
Frustralia	865	2.44	0.50	.74	.74	-.30 [-.39; -.20]
Psychopathy	779	2.06	0.59	.75	.72	-.27 [-.36; -.18]
Sadism	768	1.47	0.53	.87	.84	-.25 [-.35; -.15]
Machiavellianism	779	2.93	0.67	.83	.84	-.26 [-.35; -.17]
Narcissism	778	2.42	0.59	.76	.75	.06 [-.04; .16]
Greed	770	2.36	0.81	.86	.86	-.14 [-.24; -.05]
Common core (across 12 specific aversive traits)				.97	.91	-.30 [-.41; -.19]
Common core (D70)				.95	.91	-.28 [-.37; -.18]

Note. *n* = number of participants with valid answers on the criterion; α = Cronbach's alpha; ω_u = unidimensional omega.

Analyses and Results

Hypotheses were tested estimating confirmatory factor analyses with the *lavaan* package (Rosseel et al., 2019) in R (R Core Team, 2020). Non-normality in the data was accounted for by employing maximum likelihood estimation with robust standard errors and scaled test statistics (as provided by the *lavaan* package when specifying "MLM" estimation; Satorra & Bentler, 2001). In assessing model fits, we considered the robust root mean squared error of approximation (RMSEA) and the standardized root mean

residual (SRMR) in addition to the chi-square model test, for which the statistical power was so high that even minor misspecifications would lead to a rejection of a model (see Jobst et al., 2021). For transparency, we further report the robust comparative fit index (CFI), although its utility to evaluate the fit of a single model is questionable given its dependence on loading magnitude (Moshagen & Auerswald, 2018).

Following the commonly used approach, Life History Strategy was modeled by specifying a higher-order structure (Richardson et al., 2017). More precisely, we specified six lower-order factors representing the six dimensions of the Mini-K from the respective items. Additionally, we specified a higher-order factor representing K, on which the six lower-order factors loaded. Each factor was assigned a scale by fixing its variance to 1 (which also applies for all other factors). The model fit the data well (according to conventional guidelines; Browne & Cudeck, 1992), $\chi^2(164) = 497$, $p < .001$; RMSEA = .053, 90% CI [.047; .059], SRMR = .054, CFI = .93.[3] The higher-order omega of the K-factor indicated an acceptable reliability ($\omega_{HO} = .66$), whereas the unidimensional omegas and Cronbach's alphas for the lower-order factors provided a relatively varied picture, ranging from poor to high reliabilities ($.50 < \omega_u < .93$ and $.41 < \alpha < .93$, respectively).

To estimate the bivariate correlations between Life History Strategy and the individual aversive traits, we specified separate models containing a factor for one of the aversive traits along with the latent K-factor. The reliabilities of all aversive traits were acceptable to high both in terms of Cronbach's alpha ($.73 < \alpha < .89$) and unidimensional omega ($.72 < \omega_U < .89$; see Table 1). As can be seen in Table 2, the correlations of single aversive traits with K varied greatly, yielding a medium-sized effect on average (median $|r| = .26$). Indeed, K was unrelated to Narcissism and only barely related to three other traits (Psychological Entitlement, Moral Disengagement, and Greed). A strong negative association was only found for one single aversive trait (Crudelia). In other words, individuals with a faster Life History Strategy tended to have higher scores on some traits like Crudelia, Self-Centeredness, and Egoism, whereas their scores on other aversive traits, such as Psychological Entitlement, Moral Disengagement, and Greed, were hardly higher than those of individuals with a slower Life History Strategy.

To further test whether K can approximate the latent common core of all aversive traits, we specified a bifactor model with all aversive trait indicators loading on a general factor and on a specific factor for the individual aversive trait. The general factor in a bifactor model captures the variance shared among all items and thus represents their common core, whereas the specific factors capture the remaining variance shared among the items of a given trait that is not shared with the other traits. In this case, the general factor captures the aversive content shared by the trait indicators and can thus be interpreted as the latent disposition that accounts for individual differences in aversive traits

3) A single-factor model fit the data considerably worse, $\chi^2(170) = 2{,}304$, $p < .001$; RMSEA = .133, 90% CI [.129, .138], SRMR = .111, CFI = .53; $\Delta\chi^2 = 1156.6$, $p < .001$, suggesting to retain the higher-order model.

and behavioral tendencies. By contrast, the specific factors capture only the remaining, non-aversive characteristics of the respective traits. As a consequence, they do not represent the original constructs anymore and will hence not be further considered substantively. For identification purposes, the general and specific factors were constrained to mutual orthogonality, which also reflects the fact that they account for non-overlapping portions of variance. This model structure fit the data well, $\chi^2(7{,}018) = 14{,}368$, $p < .001$; RMSEA = .039, 90% CI [.039; .040]; SRMR = .054, CFI = .79. The reliability of the general factor was excellent both in terms of hierarchical omega ($\omega = .90$) and Cronbach's alpha ($\alpha = .97$). Including the higher-order structure for K resulted in a medium-sized latent negative correlation between K and the general factor of aversive traits, $r = -.30$.

Finally, we considered the association between the K-factor and D as a direct measure of the common core of aversive traits. Following Bader, Hartung, et al. (2021), D was also modeled by specifying a bifactor structure such that all items loaded both on the general factor representing D (i.e., the shared variance among all items) and on one of five specific factors or themes (representing the shared variance among subsets of items that is independent from D). Again, the general and specific factors were constrained to mutual orthogonality. The bifactor model yielded a good fit to the data, $\chi^2(2{,}275) = 5{,}907$, $p < .001$; *RMSEA* = .047, 90% CI [.046; .049], *SRMR* = .054, CFI = .79. The reliability of D was excellent both in terms of hierarchical omega ($\omega = .91$) and Cronbach's alpha ($\alpha = .95$).[4] Almost perfectly in line with the previous findings, the latent bivariate correlation between K and D was negative and medium-sized ($r = -.28$).

Discussion

Recent research in personality psychology has come to agree that socially aversive traits share a common dispositional core (Jonason et al., 2017; Moshagen et al., 2018; Muris et al., 2017; Schreiber & Marcus, 2020; Vize et al., 2020). Among other suggestions, it has been presumed that aversive traits signify a Fast Life History Strategy (Buss, 2009; Jonason et al., 2012). According to Life History Theory (LHT), this strategy describes species that maximize their reproductive fitness by high proliferation and little parental efforts (Pianka, 1970). In explaining individual differences within the human species, such a strategy is thought to reflect in the general preference for immediate rewards over long-term benefits or, more broadly speaking, impulsivity, in turn leading to exploitative and otherwise aversive behavior (Buss, 2009; Jonason et al., 2012). Empirical evidence, however, has been inconsistent on the potential link between a Fast Life History Strategy and socially aversive traits, let alone their common core. Thus, the present study strictly

4) The latent correlation between D and the general factor estimated across the aversive traits was $r = .87$.

tested whether a Fast Life History Strategy indeed reflects aversive traits and strongly represents their common core.

In a large, heterogeneous sample, we found that K was related only to some individual aversive traits, with a maximum of only 22% shared variance (with Crudelia) and a median of 7% across all aversive traits, which is notably less than the shared variance among the latter (median 34%, see Table A1 in the Supplementary Materials). Similarly, shared variance between K and the common core of all aversive traits—both modelled via the individual aversive traits and measured directly—only amounted to around 10%. Thus, whereas individuals characterized by a faster Life History Strategy also tend to be higher on some aversive traits, this association is arguably too weak for K to be an adequate representation of the common underlying disposition of all aversive traits.[5] In fact, any single aversive trait alone constituted a better proxy for their common core than did K ($.28 < r < .91$, median $r = .75$; see Table A1 in the Supplementary Materials).[6]

K shared the smallest portion of variance with Narcissism, Moral Disengagement, and Psychological Entitlement, and the largest with Crudelia and Egoism. Although Crudelia is supposed to manifest in sadistic, brutal, and destructive behaviors (Vukosavljevic-Gvozden, Opacic, & Perunicic-Mladenovic, 2015), the items of the respective scale arguably also reflect egoistic as opposed to big-hearted tendencies. Thus, whereas the relation of a Fast Life History Strategy with socially aversive behavior seems to be largely driven by selfishness, other relevant aspects of aversive traits are poorly represented. Most notably, individuals with a faster Life History Strategy neither seem to be driven by convictions regarding their superiority and privileges as motives for exploitative behaviors (as reflected in Psychological Entitlement and Narcissism), nor do they derive utility from the disutility of others (as reflected in Sadism and Spitefulness). Indeed, it is entirely plausible that a Fast Life History Strategy cannot represent these aversive traits, as they are neither driven by impulsiveness—which is suggested to be the main aspect linking Fast Life History Strategy to aversive behaviors—, nor is there an obvious evolutionary advantage to hurting others for mere enjoyment.

Taken together, the findings are compatible with the fact that LHT primarily predicts how a species maximizes its reproductive fitness in light of evolutionary trade-offs. According to this theory, individuals characterized by a Fast Life History Strategy exhibit

5) We also verified our results by modeling K—analogously to the common aversive core—as a bifactor structure. The analysis script and results are provided in the Supplementary Materials. In short, although single correlations between K and aversive traits slightly differed from those reported herein, the correlations with both the aversive traits (median $|r| = .24$, see Table A2 in the Supplementary Materials) and the common core modeled from all aversive traits were of equal magnitude overall. Thus, the substantive conclusion that K is not an adequate approximation of the common aversive core also holds for this modeling approach.

6) Likewise, basic personality dimensions such as Honesty-Humility and Agreeableness have been shown to share substantially more overlap with and thus outperform Life History Strategy in accounting for the commonalities of aversive traits (Hodson et al., 2018; Horsten et al., 2021; Moshagen, Zettler, Horsten, et al., 2020; Vize et al., 2020).

various behaviors which are not commonly regarded as "dark" in the sense of ethically or morally aversive (e.g., early sexual intercourse, non-use of birth control, having multiple sexual partners or being an absent parent) and would thus be beyond the scope of a common aversive core. Moreover, to explain why a faster Life History Strategy would lead to aversive personality traits and behaviors, auxiliary assumptions about co-occurring traits are necessary (e.g., that a behavioral strategy optimized for short-term relations—for instance, cheating—is caused by absent parents; Gladden et al., 2009).

It should be noted that our conclusions are limited by the specific operationalization of LHT which is purely psychometric in nature and does not assess actual life history traits or the timing of life history events (Copping et al., 2014, 2017; Sear, 2020). As has been argued before, however, organisms are "adaptation executers", not "fitness maximizers", meaning that the execution of predicted adaptations (e.g., amount of resources invested in child rearing or own survival) is deemed at least as or even more indicative of a Fast or Slow Life History Strategy than their outcomes (e.g., number of sexual partners and offspring, life expectancy), which are not only influenced by Life History Strategy, but also by environmental conditions (Figueredo et al., 2014). The Mini-K has been shown to assess such adaptation executions in terms of patterns of resource investment in the major psychosocial areas associated with a slower Life History Strategy (Figueredo et al., 2017).

A further limitation pertaining to the operationalization of Life History Strategy is that the Mini-K (containing 20 items) is a short-form of the much longer 199-item Arizona Life History Battery (ALHB; Figueredo, 2007). The Mini-K might thus not fully represent the full breadth of Life History Strategy. However, the items of the Mini-K were designed to summarize the content covered by all six dimensions of the ALHB (Figueredo et al., 2006) and it has been shown to closely converge with the ALHB (r = .80, Olderbak et al., 2014; ρ = .91, Figueredo et al., 2014), thereby proving an efficient and practical measure of Life History Strategy. Furthermore, given that the Mini-K is nomologically validated and has been widely used to measure Life History Strategy in personality psychology (Figueredo et al., 2014), practically all prior work regarding a Fast Life History Strategy as the basis of aversive traits was based on this operationalization (or the ALHB, respectively; Figueredo et al., 2006). Thus, at the very least, the present findings imply that a Fast Life History Strategy *as measured by the Mini-K* is not equivalent to the dispositional basis of aversive traits.

Nonetheless, it has been suggested that the assessment of Life History Strategy should not solely rely on a psychometric approach but also take into account biodemographic data (Black et al., 2017; Nettle & Frankenhuis, 2020; Sear, 2020). Thus, future research may need to be grounded on a combination of psychometric and biometric data for more conclusive insights on the link between a Fast Life History Strategy and aversive traits and behaviors.

In sum, whereas a Fast Life History Strategy (as measured by the Mini-K) is to some extent related to and thus may constitute a distal antecedent of at least a few specific aversive traits—most likely Crudelia and Egoism—it is a relatively poor proxy for most aversive traits. Correspondingly, it shares only limited variance with the common core of these traits and does not, per se, represent the underlying disposition of all aversive traits.

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Ethics Approval: The study was approved by the local ethics committee of the University of Koblenz-Landau (#154_2018).

Data Availability: For this article, data is freely available (for access, see Index of Supplementary Materials below).

Supplementary Materials

For this article the following Supplementary Materials are available via the PsychArchives repository (for access see Index of Supplementary Materials below):

- Dataset including demographics and all reported variables
- Data from the Prosocial Personality Project (PPP)
- Codebook to map variables in dataset with items and constructs
- Code to reproduce all results reported in the manuscript
- Code to reproduce additional results modeling K as bifactor
- Verbatim items and instructions as used in the study
- Additional tables A1 and A2
- Open peer-reviews

Index of Supplementary Materials

Horsten, L. K., Hilbig, B. E., Thielmann, I., Zettler, I., & Moshagen, M. (2022). *Supplementary materials to "Fast, but not so furious. on the distinctiveness of a fast life history strategy and the common core of aversive traits"* [Data, codebook]. PsychOpen GOLD. https://doi.org/10.23668/psycharchives.5649

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