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SEÇÃO: ARTIGO

“Tudo ou nada”: estilo de respostas extremas, pensamento dicotômico e tríade sombria da personalidade

“All or nothing”: extreme responding, dichotomous thinking, and the dark triad of personality

“Todo o nada”: respuesta extrema, pensamiento dicotomo y la triada oscura de la personalidad

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Resumo: No presente estudo, investigaram-se as associações únicas entre pensamento dicotômico, estilo de resposta extrema (ERS) e a Tríade Sombria de personalidade, ou seja, maquiavelismo, narcisismo e psicopatia. As hipóteses foram que o pensamento dicotômico exibiria um efeito positivo no ERS, e que o pensamento dicotômico estaria positivamente associado à Tríade Sombria, mesmo depois de controlar o ERS. Os participantes foram 488 adultos com idade média de 29,54 anos ($DP = 10,38$). Os resultados confirmaram que o pensamento dicotômico prediz positivamente o ERS e que a relação entre o pensamento dicotômico e os domínios da Tríade Sombria permanece positiva e significativa, mesmo depois de contabilizar o ERS. Além disso, o ERS manifestou associações negativas fracas com a Tríade Sombria, com uma relação significativa apenas com a psicopatia. As descobertas deste estudo ajudam a expandir a compreensão tanto da natureza substantiva dos estilos de resposta quanto dos processos cognitivos subjacentes à Tríade Sombria da personalidade.

Palavras-chave: construção do teste, processos cognitivos, testes psicológicos

Abstract: In the current study, we investigated the unique associations between dichotomous thinking, extreme response style (ERS), and the Dark Triad of personality, namely, Machiavellianism, narcissism, and psychopathy. We hypothesized that dichotomous thinking would exhibit a positive effect on ERS, and that dichotomous thinking would be positively associated with the Dark Triad even after accounting for ERS. Participants were 488 adults with a mean age of 29.54 years ($SD = 10.38$). Results confirmed dichotomous thinking positively predicts ERS, that the relationship between dichotomous thinking and the Dark Triad domains remains positive and significant even after accounting for ERS. Moreover, ERS manifested weak negative associations with the Dark Triad, with a significant relationship only with psychopathy. Findings from the current study help expand the understanding of both the substantive nature of response styles and the cognitive processes underlying the Dark Triad of personality.

Keywords: test construction, cognitive processes, psychological testing

Resumen: En este estudio, investigamos las asociaciones únicas entre el pensamiento dicotômico, el estilo de respuesta extrema (ERS) y la Tríada Oscura de la personalidad, a saber, maquiavelismo, narcisismo y psicopatía. Presumimos que el pensamiento dicotômico exhibiría un efecto positivo en ERS, y que el pensamiento dicotômico estaría asociado positivamente con la Tríada Oscura incluso después de tener en cuenta el ERS. Los participantes fueron 488 adultos con una edad media de 29,54 años ($DE = 10,38$). Los resultados confirmaron que el pensamiento dicotômico predice positivamente ERS, que la relación entre el pensamiento dicotômico y los dominios de la Tríada Oscura sigue siendo positiva y significativa incluso después de tener en cuenta el ERS. Además, ERS manifestó asociaciones negativas débiles con la Tríada Oscura, con una relación significativa solo con la psicopatía. Los hallazgos del estudio ayudan a ampliar la



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comprensión tanto de la naturaleza sustantiva de los estilos de respuesta cuanto de los procesos cognitivos subyacentes a la Triada Oscura de la personalidad.

Palabras clave: construcción de test, procesos cognitivos, tests psicológicos

Response biases are a fundamental issue in the study of psychometric properties of self-report instruments. Researchers have been increasingly interested in the understanding of why and when do such biases occur, as well as how they can be minimized (e.g., Batchelor & Miao, 2016; Costa & Hauck Filho, 2017; Costa & Hauck Filho, 2019; Vaerenbergh & Thomas, 2012; Wetzel et al., 2015; Ziegler, 2015). In brief, evidence indicates that response styles are due to features of the test (e.g., the required cognitive load to respond to the item, the scale format), the testing situation (e.g., interviewer effects, the availability of incentives to respond), and the test taker (e.g., engagement in the testing, overall motivation; Vaerenbergh & Thomas, 2012). A deeper investigation of each of these elements might provide researchers with more effective ways of reducing the impact of response biases on test scores (Ziegler, 2015). Hence, in the current investigation, our focus is on the Extreme Response Style and its connection with the test takers' scores on dichotomous thinking style and Dark Triad variables.

The Extreme Response Style (ERS) tends to occur when respondents manifest a preference for the end points of response scales when taking self-report tests (Greenleaf, 1992). For instance, disregarding of item content, an individual might rate items by systematically indicating "1" or "5" in a Likert-type scale. Rather than just consisting of systematic error variance that should be discharged, evidence has revealed that ERS is a stable tendency, which might represent the way the underlying cognitive processes take place when some individuals respond to items (Wetzel et al., 2015). Research has indeed connected ERS to many individual differences. He et al. (2014) found that ERS was positively associated with being persuasive, controlling, outspoken, and innovative, and negatively associated with being affiliative, adaptable, democratic, and emotionally controlled. Harzing (2006) also reported

associations between ERS and country values and features such as low collectivism, extraversion, and uncertainty avoidance. Thus, a series of empirical results support the interpretation of the ERS as a potential measure of cognitive processes that underlie item responses.

One cognitive style variable that closely resembles ERS is dichotomous thinking. The dichotomous way of thinking involves a simplification of the complex social reality by using extreme or opposing conceptual categories. As assessed by the Dichotomous Thinking Inventory, the construct is composed of three dimensions: preference for dichotomy, dichotomous beliefs, and profit-and-loss thinking (Oshio, 2009). Preference for dichotomy involves a taste for thoughts and ideas expressed in ways that are concise and clear; dichotomous beliefs entails an inclination toward seeing the world in terms of extremes, such as good or evil, losers or winners; and, finally, profit-and-loss thinking comprises a pragmatic, benefit-oriented interpersonal style in which gains are pursued and losses are avoided (Oshio, 2009). These features can be easily associated with day-by-day communication in the form of "white or black" or "eight or eighty" (Berlin, 1990). We hypothesize, in this study, that an individual who displays dichotomous thinking will likely also exhibit extreme responding to self-report items. Although no empirical evidence so far is available to support this claim, it is reasonable to expect that a dichotomous view of social reality could be accompanied by exaggerated representations of one's own public personality and inner experiences (Bonfá-Araujo et al., 2021). If we are correct, dichotomous "thinkers" perceive and evaluate themselves as well in terms of extreme categories.

Moreover, dichotomous thinking is not necessarily a socially positive or constructive style, given that it implies an oversimplification of reality, with individuals avoiding the consideration of facts as multidimensional or ambivalent (Bonfá-Araujo et al., 2021; Oshio, 2009). Accordingly, binary thinking might be associated with pathological personality characteristics. As reported by Oshio (2009, 2012), the construct correlates positively with most of the

DSM personality disorders, especially Cluster B (antisocial, borderline, histrionic, narcissistic). The focus of the current investigation is on the traits that make up the Dark Triad, Machiavellianism, narcissism, and psychopathy (Koehn et al., 2018; Paulhus & Williams, 2002). Machiavellianism is characterized by manipulation, insensibility, weak morality, and active construal of a positive reputation; narcissism (or "subclinical narcissism") is characterized by a sense of superiority, grandiosity, dominance, selfishness, and intolerance to criticism; lastly, psychopathy involves lack of empathy, manipulation, and impulsive and antisocial tendencies (Jones & Paulhus, 2014; Koehn et al., 2008; Paulhus & Williams, 2002). Indeed, evidence suggests a positive (albeit small; $r_s = .17-.26$) association between dichotomous thinking and each of the traits of the Dark Triad (Jonason et al., 2018). Such findings point out that the perception of social situations using binary "lens" happens more often among individuals who lack empathy and are self-oriented. This is consistent with the theoretical claim that dichotomous thinking is a cognitive bias that optimizes the strategic pursuit of an individual's goals or the satisfaction of immediate needs (Jonason et al., 2018; Oshio, 2009).

In the present investigation, we investigated the unique associations between dichotomous thinking, ERS, and the Dark Triad of personality. We put forward two main hypotheses. First, ERS and dichotomous thinking are conceptually overlapping constructs, the reason why we could expect ERS to occur as a context-specific manifestation of a broader dichotomous thinking style. In other words, a dichotomous "thinker" would also likely be an extreme responder when rating self-report items. Accordingly, we hypothesized that dichotomous thinking would exhibit a positive effect on ERS, so that dichotomous thinking \rightarrow ERS. Second, following Jonason et al. (2018), we expected the substantial relationship between dichotomous thinking and the Dark Triad traits would hold after accounting for ERS. In other words, we hypothesized that dichotomous thinking is directly associated with the Dark Triad traits,

and that such association is not entirely due to idiosyncratic responding to self-report items (ERS). Moreover, we also wanted to test if ERS is somehow connected to the Dark Triad traits after accounting for dichotomous thinking. We tested all these relationships using structural equation modeling.

Method

Participants

Participants were 488 adults from Brazil, aged from 18 to 72 years old ($M = 29.54$, $SD = 10.38$). Females were 75.6%, single 64.1%, and undergraduates 61.9%.

Instruments

Response Pattern Scale (RPS; Greenleaf, 1992). The RPS is a self-report scale, composed of 16 items in a Likert-type scale (1= "strongly disagree" to 6= "strongly agree"). It was developed initially to assess only Extreme Response bias, but it can be used for assessing response bias in general since the items have low intercorrelation. To capture ERS the items must be recoded, so that 1 2 3 4 5 to 1 0 0 0 1. The composite reliability estimate for the recoded items was .81 according to the omega total coefficient.

Dichotomous Thinking Inventory (DTI; Oshio, 2009). The DTI is a self-report scale, composed of 15 items in a Likert-type scale (1= "strongly disagree" to 6= "strongly agree"). The scale measures preference for dichotomy, dichotomous beliefs, and profit-and-loss thinking. Reliability of the scale was .92 according to the omega total coefficient.

Short Dark Triad (SD3; Jones & Paulhus, 2014). The SD3 is a self-report scale, composed of 27 items in a Likert scale (1= "strongly disagree" to 5= "strongly agree"). The scale measure Machiavellianism, narcissism, and psychopathy. Reliability according to the omega total coefficient was .80 for Machiavellianism, .73 for narcissism, and .77 for psychopathy.

Procedure

After approval by the Research Ethics Committee, the instruments were available in Google Forms. The link was posted on social media. To participate in the study, individuals should

be over 18 years and agree to the information contained in an Informed Consent Form.

Data analysis

Correlations between variables were estimated using Spearman's Rho, which does not assume data are normally distributed. Analyses were conducted using package *psych* (Revelle & Revelle, 2015) from R. To test our study hypotheses, we specified a path model in which: a) ERS, Machiavellianism, narcissism, and psychopathy were regressed on dichotomous thinking; and b) Machiavellianism, narcissism, and psychopathy were also regressed on ERS. Given the data were unlikely normally distributed, we estimated the coefficients from the model using Robust Maximum Likelihood (MLR). To evaluate model fit, we considered the following indexes of adjustment, chi-square (χ^2), Comparative Fit Index (CFI $\geq .90$), Tucker-Lewis Index (TLI $\geq .90$), Root Mean Square Error of Approximation (RMSEA $\leq .06$; Hu & Bentler, 1999).

Results

In a first step, we explored the bivariate associations between the study variables. As described in Table 1, the ERS score was significantly and positively correlated with dichotomous thinking, while relationships with the Dark Triad variables were non-significant. Dichotomous thinking correlated positively with the Dark Triad variables, but the relationship was only significant for Machiavellianism.

Table 1 – Bivariate correlations (Spearman's Rho) between variables

| | DT | MAC | NAR | PSY |
|-----|------|------|------|------|
| ERS | .26* | .08 | -.09 | -.07 |
| DT | - | .36* | .10 | .07 |
| MAC | | - | .32* | .53* |
| NAR | | | - | .32* |
| PSY | | | | - |

Note: ERS = Extreme Response Style, DT = Dichotomous Thinking, MAC = Machiavellianism, NAR = Narcissism, PSY = Psychopathy. * $p < .05$.

In the next step, we tested our path analysis model. Given that a saturated path model where all variables are interrelated has 0 degrees of freedom, we ran our model in two stages. At stage 1, we regressed: a) ERS, Machiavellianism, narcissism, and psychopathy on dichotomous thinking; and b) Machiavellianism, narcissism, and psychopathy on ERS. At stage 2, we constrained one non-significant coefficient from stage 1 to 0, which resulted in 1 degree of freedom, so that the model was testable, and model fit coefficients were available. After running the saturated model from stage 1, we observed that the regression coefficient from ERS to Machiavellianism was .01, $p > .05$. We then fixed this coefficient to 0 and reran the model. Model fit was excellent, $\chi^2 = .04$ (1), CFI = 1.00, TLI = 1.03 and RMSEA = .00 [I.C.: .00–.07]. A diagram with the final model coefficients is presented in Figure 1.

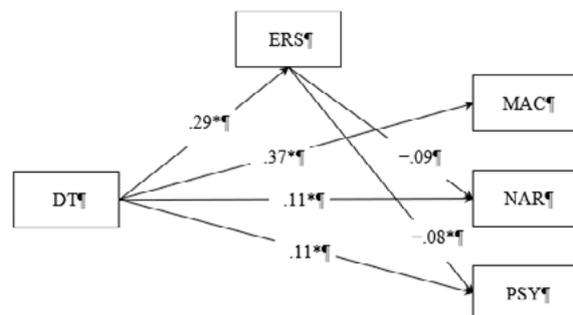


Figure 1 – The final path analysis model and the estimated standardized coefficients. Note: ERS = Extreme Response Style, DT = Dichotomous Thinking, MAC = Machiavellianism, NAR = Narcissism, PSY = Psychopathy. * $p < .05$.

As expected, dichotomous thinking was positively related to ERS and to the Dark Triad variables. Roughly, 8% of variance in the ERS score was attributable to dichotomous thinking ($\beta = .29$, $p < .05$), which indicates that indeed these variables partially overlap. The linear relationship between dichotomous thinking and Machiavellianism was much higher ($\beta = .37$, $p < .05$) than the estimated relationships with narcissism and psychopathy ($\beta = .11$, $p < .05$). Lastly, only psychopathy exhibited a connection with ERS, with the effect size being small and negative ($\beta = -.08$, $p < .05$).

Discussion

This study aimed to investigate the unique relationships between ERS, dichotomous thinking, and the Dark Triad domains. We were especially interested in the influence of dichotomous thinking on ERS and the Dark Triad of personality, but we also explored a potential link between ERS and the dark traits. Both of our hypotheses were confirmed.

First, we found a positive and significant relationship between dichotomous thinking and ERS, so that ~8% of extreme responses were explained by this cognitive style. This confirms our hypothesis that extreme responding should be conceived as more than just a systematic error variance component contaminating item responses; this response style is apparently connected to complex cognitive processes, including dichotomous thinking. Batchelor and Miao's (2016) found, in their meta-analysis, that ERS is negatively related to intelligence ($r = -.26$), which suggests extreme responders are individuals that might fail to perceive the nuances and the multicausality of social reality. The evidence from our investigation expands the cognitive basis of extreme responding. Our results indicate that the subtle behavior of systematically selecting the end points of a response scale is connected to extreme and binary thinking in many other situations beyond psychological testing. Extreme responding should not be regarded as "garbage" variance, given that it might contain useful trait information.

Second, we also found a positive link between dichotomous thinking and the Dark Triad. This is consistent with the Jonason et al.'s (2018) study, in which a positive association have been found as well. Moreover, results are aligned with the reported associations of the dark triad variables with prejudice (Jonason et al., 2020), negative attitudes toward asylum seekers (Anderson & Cheers, 2018), right-wing authoritarianism and political extremism (Duspara & Greitemeyer, 2017). Hence, our investigation adds new evidence that individuals who score high on the Dark Triad variables typically tend to perceive social stimuli in a rigid and binary fashion, in which events or persons are evaluated

as either good or bad, loyal or betrayer, helpful or useless. Such relationships reinforce previous descriptions of the binary thinking process as intrinsically tied to maladaptive outcomes (Bonfá-Araujo et al., 2021; Oshio, 2009, 2012).

One more finding merits attention. We encountered ERS to be negatively, albeit weakly, related to the Dark Triad variables, something we consider too risky to interpret from a substantial point of view. It is worth mentioning that many of the items from the Short Dark Triad inventory have a content that is negative in valence or that is socially undesirable. For instance, the psychopathy scale contains statements like "It's true that I can be mean to others" and "Payback needs to be quick and nasty." Therefore, our interpretation is simply that extreme responders did react to the unpleasant content in those items, manifesting a tendency to score low on them; they might have systematically chosen "1" rather than "5" in this case. Although apparently trivial, such result questions the theoretical independence of the extreme response style as a tendency to score items in a particular fashion "regardless of the content" (Vaeranbergh & Tomas, 2012). However, new research is still necessary to confirm or refute the interpretation casted out here.

Some limitations in this study should be noted. First, we were able to estimate the relationship between dichotomous thinking and ERS using independent measures for each variable. Nevertheless, we should note that dichotomous thinking was assessed using self-report items, which might be as well affected by from response styles. Thus, we suggest that future research should be conducted attempting to rely on a multimethod approach of assessing dichotomous thinking, perhaps including other techniques such as observer ratings and clinician reports. This suggestion extends to the Dark Triad variables, which also counted with single method assessments, something that should be addressed in new investigations. Finally, we recognize that our study focused on extreme responding, but many other response styles exist that would merit a closer investigation, such as

socially desirable and acquiescent responding. Despite these limitations, the current study adds evidence that ERS is positively connected to a broader binary view of the social reality, which, in turn, is more often found among individuals scoring high on the Dark Triad traits.

References

- Anderson, J., & Cheers, C. (2018). Does the Dark Triad predict prejudice?: The role of Machiavellianism, psychopathy, and narcissism in explaining negativity toward asylum seekers. *Australian Psychologist*, 53(3), 271-281. <https://doi.org/10.1111/ap.12283>
- Batchelor, J. H., & Miao, C. (2016). Extreme response style: A meta-analysis. *Journal of Organizational Psychology*, 16(2), 51-62. <https://articlegateway.com/index.php/JOP/article/view/1790>
- Berlin, S. B. (1990). Dichotomous and complex thinking. *Social Service Review*, 64(1), 46-59. <https://doi.org/jstor.org/stable/30012066>
- Bonfá-Araujo, B., Oshio, A., & Hauck-Filho, N. (2021). Seeing things in black-and-white: A scoping review on dichotomous thinking style. *Japanese Psychological Research*, 1-12. <https://doi.org/10.1111/jpr.12328>
- Costa, A. R. L., & Hauck Filho, N. (2019). Methods for the control of extreme response style in self-report instruments: A review. *Trends in Psychology*, 27(2), 309-323. <https://doi.org/10.9788/TP2019.2-02>
- Costa, A. R. L., & Hauck Filho, N. (2017). Menos desejabilidade social é mais desejável: neutralização de instrumentos avaliativos de personalidade. *Interação em Psicologia*, 21(3), 239-249. <https://doi.org/10.5380/psi.v21i3.53054>
- Duspara, B., & Greitemeyer, T. (2017). The impact of Dark Tetrad traits on political orientation and extremism: An analysis in the course of a presidential election. *Heliyon*, 3(10), e00425. <https://doi.org/10.1016/j.heliyon.2017.e00425>
- Greenleaf, E. A. (1992). Measuring extreme response style. *Public Opinion Quarterly*, 56(3), 328-351. <https://doi.org/10.1086/269326>
- Harzing, A.-W. (2006). Response styles in cross-national survey research: A 26-country study. *International Journal of Cross Cultural Management*, 6(2), 243-266. <https://doi.org/10.1177/1470595806066332>
- He, J., Bartram, D., Inceoglu, I., & Vijver, F. J. R. (2014). Response styles and personality traits: A multilevel analysis. *Journal of Cross-Cultural Psychology*, 45(7), 1028-1045. <https://doi.org/10.1177/0022022114534773>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55. <https://doi.org/10.1080/10705519909540118>
- Jonason, P. K., Oshio, A., Shimotsukasa, T., Mieda, T., Csathó, A., Sitnikova, M. (2018). Seeing the world in black or white: The dark triad traits and dichotomous thinking. *Personality and Individual Differences*, 120(1), 102-106. <https://doi.org/10.1016/j.paid.2017.08.030>
- Jonason, P. K., Underhill, D., & Navarrate, C. D. (2020). Understanding prejudice in terms of approach tendencies: The Dark Triad traits, sex differences, and political personality traits. *Personality and Individual Differences*, 153, 109617. <https://doi.org/10.1016/j.paid.2019.109617>
- Jones, D. N., & Paulhus, D. L. (2014). Introducing the Short Dark Triad (SD3): A brief measure of dark personality traits. *Assessment*, 21(1), 28-41. <https://doi.org/10.1177/1073191113514105>
- Koehn, M. A., Okan, C., & Jonason, P. K. (2018). A primer on the dark triad traits. *Australian Journal of Psychology*, 71(1), 7-15. <https://doi.org/10.1111/ajpy.12198>
- Oshio, A. (2009). Development and validation of the Dichotomous Thinking Inventory. *Social Behavior and Personality*, 37(6), 729-742. <https://doi.org/10.2224/sbp.2009.37.6.729>
- Oshio, A. (2012). An all-or-nothing thinking turns into darkness: Relations between dichotomous thinking and personality disorders. *Japanese Psychological Research*, 54(4), 424-429. <https://doi.org/10.1111/j.1468-5884.2012.00515.x>
- Paulhus, D. L., & Williams, K. M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality*, 36, 556-563. [http://doi.org/10.1016/S009-6566\(02\)00505-6](http://doi.org/10.1016/S009-6566(02)00505-6)
- Revelle, W., & Revelle, M. (2015). Package 'psych.' In *The Comprehensive R Archive Network*.
- Vaerenbergh, Y. V., & Thomas, T. D. (2012). Response styles in survey research: A literature review of antecedents, consequences, and remedies. *International Journal of Public Opinion Research*, 25(2), 195-217. <https://doi.org/10.1093/ijpor/edso21>
- Wetzel, E., Lüdtke, O., Zettler, I., & Böhnke, J. R. (2015). The stability of extreme response style and acquiescence over 8 years. *Assessment*, 23(3), 279-291. <https://doi.org/10.1177/1073191115583714>
- Ziegler, M. (2015). "F**k you, I won't do what you told me!" – Response biases as threats to psychological assessment. *European Journal of Psychological Assessment*, 31(3), 153-158. <https://doi.org/10.1027/1015-5759/a0002>

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