

Authoritarianism, Life History, and a Preattentive Response to Threat

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ABSTRACT

Both authoritarianism and Life History Strategy Theory (LHS) have been shown to affect reactions to threat; individuals high in Authoritarianism tend to view the world as more threatening. Those with slow life histories are more risk averse and detect greater levels of threat than those with faster life histories. However, for both of these, the predominant measures of threat have been paper and pencil self-report. We report the results of a study utilizing a preattentive measure of threat, emotional pop-out. Participants' authoritarianism and life history strategy were measured and the participants then completed an emotional pop-out procedure where there were 3 X 3 grids of either one threatening image (snake or spider) in eight non-threatening images (flowers or mushrooms) or one non-threatening image in eight threatening images. Results revealed a typical emotional pop-out effect over all, but no effect of either RWA or Mini-K on the reaction times. There was also a significant correlation between RWA and Mini-K, with those high in RWA being more likely to have a slow life history strategy. For both authoritarianism and LHS, the lack of effect on the emotional pop-out effect either may be due to the threat assessment effect requiring cognitive processing by individuals or may be due to the specific, phylogenetic threat used here.

KEYWORDS

Right-Wing Authoritarianism, Life History, Threat, Preattentive Processing

Authoritarianism is an expression of conservatism that is characterized by three traits (Altemeyer, 1981). First, a desire for traditional values and social norms. Second, support for outgroup aggression. And third, submission to strong authoritarian leadership. Authoritarianism has been demonstrated to affect a large range of behaviors and attitudes, including reactions to immigration (Dunwoody & Plane, 2019; Thomsen et al., 2008), terrorism (Dunwoody & McFarland, 2018), and environmental attitudes (Stanley & Wilson, 2019; Stanley et al., 2017).

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Authoritarianism is considered a personality characteristic that has part of its origin in threat. That is, those high in authoritarianism are particularly sensitive to threat (Altemeyer, 1981). Interestingly, the relationship between threat and authoritarianism is not entirely clear. Some researchers have suggested that anxiety and threat may be responsible for the formation of authoritarianism traits (Duckitt, 2001). Others have suggested that authoritarianism exacerbates responses to threatening situations (Feldman & Stenner, 1997). In either case, it is clear that threat and authoritarianism are strongly correlated (Dunwoody & McFarland, 2018; Mirisola et al., 2014; Roccato et al., 2014).

However, most of these results are from studies that rely on paper and pencil instruments to assess threat. For example, one common measure is the Dangerous World Scale (Altemeyer, 1981; Altemeyer, 1988) and variations on it (e.g. Duckitt et al., 2002). This scale assesses participant's beliefs about how dangerous and threatening the social world is, asking participants to assess statements suggesting that the world is increasingly threatening and needs to be defended from such threats. Others have examined threat by asking participants to rate outgroups on how threatening they are to social norms, their physical person, and resources (Dunwoody and Plane, 2019). In each of these cases, the threats are perceived as hypothetical and the responses are self-reported.

In one of the few studies to examine a behavioral response to threat and authoritarianism, Levene et al. (2002) examined reaction time to threatening stimuli across high and low authoritarians in two studies. In the first, they examined reaction time to threatening versus non-threatening words. They found that those high in authoritarianism, as measured by Altemeyer's RWA scale, were marginally but not significantly faster at identifying the threatening words compared to those who scored lower in authoritarianism. In their second study, they used a lexical priming condition. In this study, target words were selected that have either threatening or non-threatening connotations. The example they provide is the word "arms." It can imply either weaponry or limbs. Each target word was paired with multiple priming words, one threatening and one non-threatening, presented immediately before the target word. Their example of such priming words for "arms" was "weapons" or "legs." The measurement was the reaction time to identify the target word. Their results of this data also did not result in significant interactions of threat and authoritarianism but when contrasts were performed, high authoritarians did respond significantly faster than low authoritarians on the threat-primed target words.

Given that the two different lexical tasks of Levene et al. (2002) produced suggestive, but not conclusive, results, we wanted to continue examining the behavioral reaction time measure using a non-lexical task. Ohman and colleagues (Ohman et al., 2001) have developed such a task, the emotional pop-out design. In this task, either one threat/fear relevant image (spider or snake) is presented in an array of eight threat/fear irrelevant images (mushrooms or flowers) or one threat/fear irrelevant image is presented in an array of threat/fear relevant images. In addition, some of the arrays consisted of either all threat/fear relevant (all nine images were snakes or spiders) or all threat/fear irrelevant (all nine images were flowers or mushrooms). The participant's task was to determine if all of the images were of the same category or if there was one image that was different. The benefit of this design is that the response is preattentive (Treisman et al., 1992). That is, the response

occurs before any self-reflection and cognition on the part of the participant. The typical result of this procedure is that single threat/fear relevant images are detected faster within an array of threat/fear irrelevant images than single threat/fear irrelevant images are detected within arrays of threat/fear relevant images. We hypothesize that individuals high in RWA would be faster at detecting the single threat/fear relevant images than those low in RWA due to their greater vigilance for threat.

The second goal of this research is to replicate the finding of a relationship between authoritarianism and Life History Strategy Theory (LHS). It has been suggested that authoritarianism is an expression of conservatism that derives from coalitional threat and a slow life history (Sinn & Hayes, 2018). Sinn and Hayes have argued that individuals high in authoritarianism show traits and behaviors that are consistent with a slow life history, including a desire for status quo and strong leaders who would maintain values and norms. In their first study, they showed that the RWA-ACT, an 18-item short form measure of RWA, and the Mini-K, a short form of the larger Arizona Life History Battery, were significantly and positively correlated, indicating that as life history slowed authoritarianism increased. This correlation was strengthened when the correlation between RWA-ACT and Social Dominance Orientation (SDO) was taken into account.

The final goal is to explore LHS and responses to threat. A basic tenet of LHS is that risky, unpredictable, and threatening environments lead to faster life histories. This relationship between threat assessment and LHS has been examined mostly through paper and pencil measures of threat. For example, Griskevicius et al. (2011) had participants read about increasing rates of violence and random deaths attributed to such violence and then asked the participants questions regarding reproduction. The results indicated that those participants who came from poorer households as children, and therefore assumed to have a faster life history, espoused preferences for earlier reproduction. Using the same mortality manipulation, Griskevicius et al. (2011) found that those participants from poor childhood backgrounds took greater financial risks following the enhanced mortality manipulation. Sherman et al. (2016) examined the crime rate within the zip codes where participants were raised and asked how they perceived the crime within their college town. They found that if participants were raised in areas with high crime rates, especially with greater numbers of registered sex offenders, they assessed their college town as more threatening than those raised in lower crime rate areas. Finally, Dillon et al. (2015) found that individuals with slow life histories perceived greater threat in sexual harassment scenarios and were more likely to report a *quid pro quo* sexual harassment situation as a threat than a social exchange. Based on these findings, we expect that individuals with slow life histories will respond more quickly to the single threat among non-threatening images than those with fast life histories.

METHOD

Participants

Forty-seven participants (9 males, 38 females) completed the experiment, mean age 19.2 years (six did not respond). The racial makeup of the sample was 8.5% Asian, 4.3% Black or African-American, 8.5% Hispanic, 72.3% White, and 6.4% Other or Multiple. Fifty-one percent stated their religion was Christianity, 8.6% listed some other religion, and 40.4% stated they were not religious. Politically, 4.3% considered themselves strongly liberal, 55.3% Liberal, 21.3% moderate, 12.8% conservative and 6.4% strongly conservative. All participants attended a small private liberal arts college in the Mid-Atlantic region of the United States and received class credit for participation.

Materials

Ninety-six 3 X 3 stimulus grids were constructed with images of snakes, spiders, flowers, mushrooms, houses, and cars. Twelve of the grids, the practice set, were composed of house and car images exclusively with three composed of one car and eight houses, three of one house and 8 cars, and three each of all cars and all houses. The remaining 84 grids were constructed exclusively from images of snakes, spiders, flowers, and mushrooms. Similar to the practice set, eight grids were constructed from one of one category (animal or plant) with eight from the opposite category. Finally, three grids were constructed that consisted of only one of the four images (snakes, spiders, flowers, or mushrooms), for a total of twelve grids. Figure 1 shows examples of grid stimuli. Each grid was 775 X 775 pixels resulting in 15.00 degrees horizontal visual angle and 14.87 degrees vertical visual angle. Each image within the grid was 220 X 220 pixels resulting in 4.28 degrees horizontal angle and 4.24 degrees vertical angle.

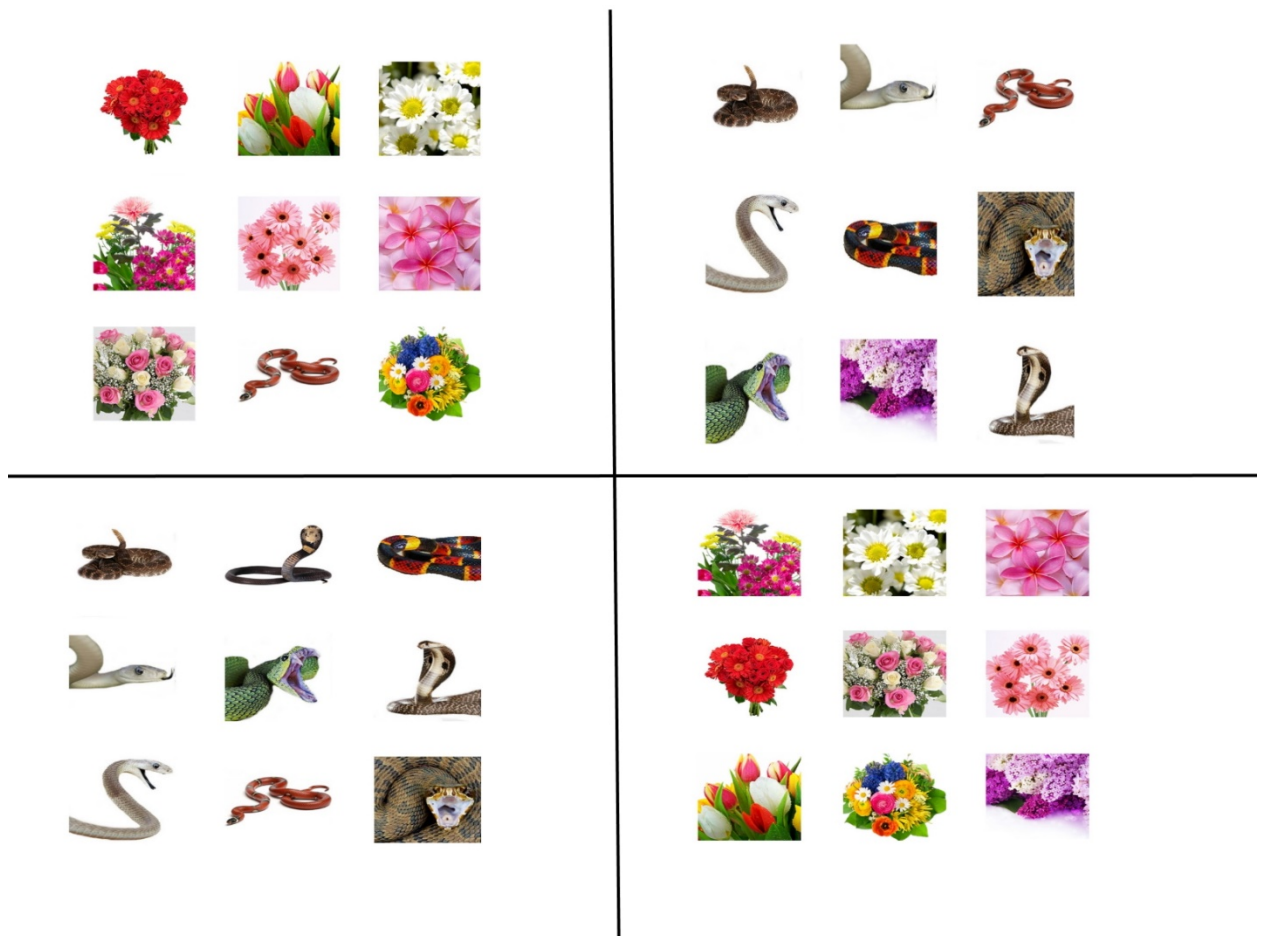


Figure 1. Four examples of the experimental grid stimuli. The upper left grid is one threatening image among eight non-threatening images. The upper right grid is one non-threatening image grid among eight threatening images. The bottom left grid is nine threatening images and the bottom right is nine non-threatening images.

In addition to these grids, an online survey was constructed (Qualtrics.com) consisting of a set of demographic questions and two psychometric scales, the Mini-K ($\alpha = .78$) (Figuredo et al., 2006) and a six-item version of Altemeyer’s RWA scale ($\alpha = .67$) (Dunwoody & McFarland, 2018).

Procedure

The experiment was conducted in two phases. In the first phase, following informed consent, participants completed the survey portion of the study in a web browser in the laboratory. After completing the survey, the stimulus presentation program (SuperLab, cerdrus.com) was opened on the same computer; the keyboard

was removed and a response pad (RB-740, cedrus.com) was placed in front of the participant. In this second phase, participants were instructed that they would see a series of grids constructed of nine images. If all of the images were the same, they were to press the rightmost key (red cap) with their right index finger and if the images were not all the same to press the leftmost key (green cap) with the left index finger on the response pad. Each trial began with a one second fixation cross placed in the center of the screen. Following that, a randomly selected stimulus grid was presented from the appropriate grid set, practice or experimental, centered on the screen. That stimulus remained on the screen until either the participant responded or 5 seconds had elapsed. Following either a response or 5 seconds, the screen was blanked and the participants were instructed to press the green key to advance to the next trial. Participants were first presented with the 12 practice grids, then there was a pause to allow them to ask questions and reiterate the instructions. Then, the 84 experimental grids were presented to the participants in two blocks for a total of 168 experimental trials.

RESULTS

Three analyses were conducted corresponding to the three goals of the study. All analyses were performed using JAMOVI (The Jamovi Project, 2019). The first analysis examined the relationship between RWA and the behavioral response to threat. Participants were divided into two groups based on a median split of the RWA results. Then a repeated measures ANOVA was performed on their reaction times to detect one threatening image in a grid of 8 non-threatening images (the POP grids) versus one non-threatening image in a grid of 8 threatening images (the NON grids). Figure 2 shows the average reaction times for the two RWA groups resulting from the median split on both the POP and NON grids. The results of the analysis revealed a significant main effect of grid type ($F(1,45) = 145.22, p < .001, \eta^2_p = .763$). No other effects were significant (all F s less than 0.51, all p s $> .48$). Separate repeated measures ANOVA on the all same arrays (9 snakes/spiders versus 9 flowers/mushrooms) revealed no significant effects of grid type, high or low RWA, or an interaction (all F s < 0.15 , all p s $> .713$).

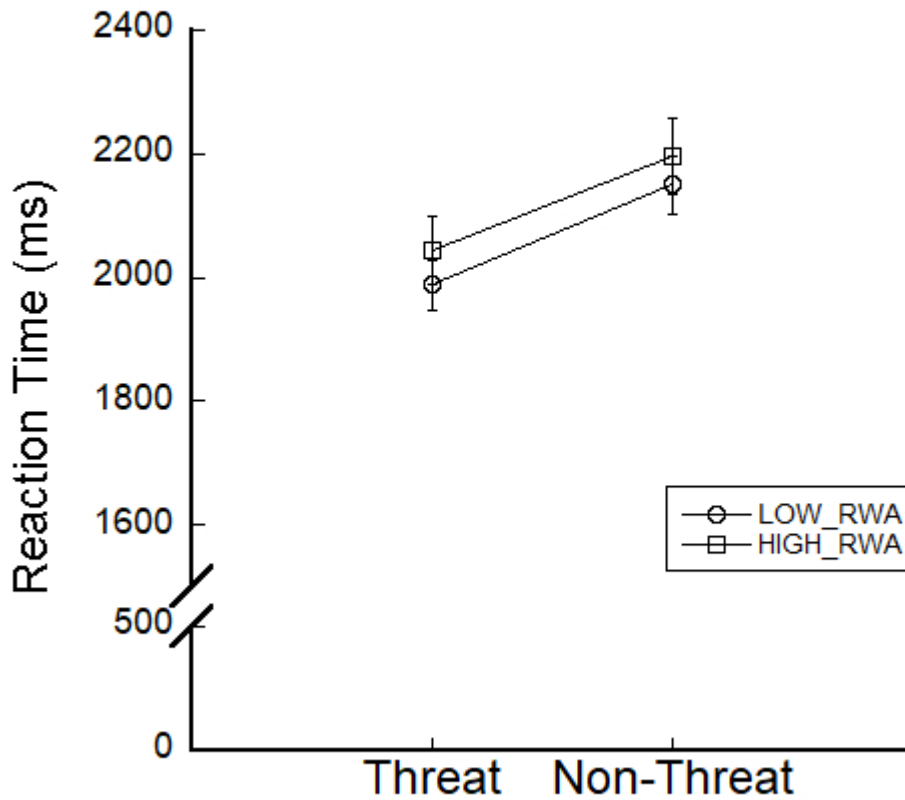


Figure 2. Reaction time in milliseconds for the Low and High RWA groups on the Threat and Non-Threat Grids (Threat = 1 threat image in 8 non-threat images, Non-Threat = 1 non-threat image in 8 threat images).

The second analysis examined the relationship between RWA and LHS. Figure 3 shows a scatter plot of RWA by the Mini-K. We found that our measure of RWA and the Mini-K was significantly and positively correlated ($r = .413$).

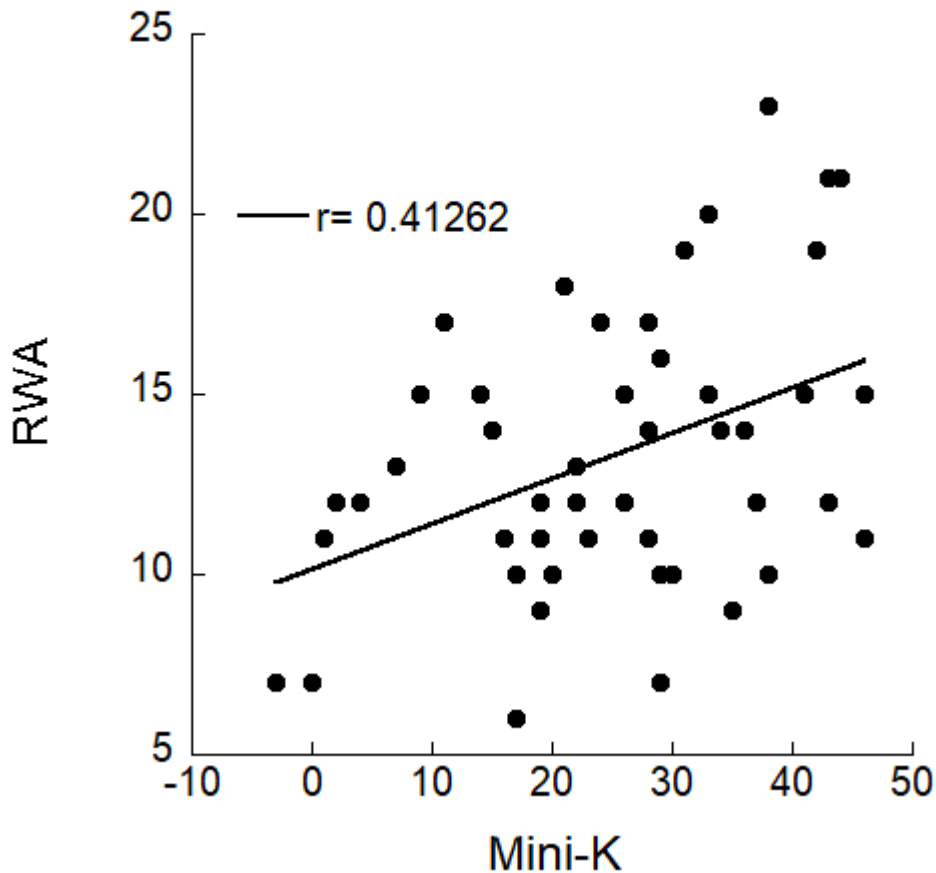


Figure 3. Scatter plot of scores on the Mini-K against scores on the RWA scale with the best-fit line.

The final analysis examined the relationship between LHS and the behavioral response to threat. Similar to the RWA analysis, we used a median split on the Mini-K to divide the participants into two groups, slow and fast. Figure 4 shows the average response times for these groups on both the POP and NON grids. The results of the repeated measures ANOVA were identical to that of the RWA analysis, revealing a significant main effect of grid type ($F(1,45) = 145.0, p < .001, \eta^2_p = .763$) and no other significant effects (all F s < 0.63 , all p s $> .43$). Also similar to the RWA analysis, the analysis of the all

same grids with the two Mini-K groups revealed no significant effects of grid type, life history strategy, or interactions (all $F_s < 1.11$, all $p_s > .299$).

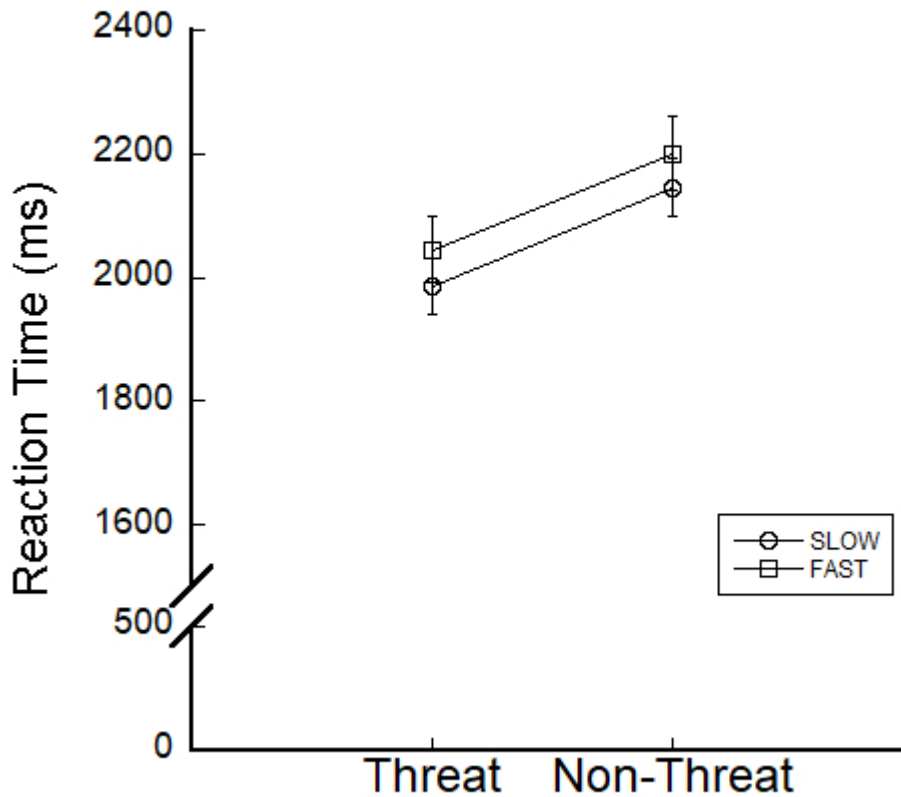


Figure 4. Reaction time in milliseconds for the Slow and Fast Life History groups on the Threat and Non-Threat Grids (Threat = 1 threat image in 8 non-threat images, Non-Threat = 1 non-threat image in 8 threat images).

DISCUSSION

We had three goals with this study; first to examine the relationship between authoritarianism and LHS. Second, to utilize a behavioral measure to test the effect of threat on authoritarianism. Third, to assess the same relationship between threat and LHS. As regards the first goal, we replicated the findings of Sinn and Hayes

(2019) finding of a positive correlation between RWA and Mini-K, suggesting that those with a slow life history strategy have higher levels of authoritarianism. We extend this finding to a different measure of RWA, the six-item scale used by Dunwoody and McFarland (2018). The second and third hypotheses were not supported. In each case, we found that while overall there was a pop-out effect for the threatening stimulus in a grid of non-threatening images, neither authoritarianism nor LHS exacerbated the effect.

The lack of effect of the threatening stimulus on authoritarianism is unexpected as authoritarianism is known to enhance reactions to threat. However, as pointed out, all of those reports use paper and pencil, self-report measures of threat. It is possible that this heightened response to threat does not evidence itself in behavior. That is, this enhanced threat response only occurs when participants have to “think” about the threat. The behavioral response used here specifically relies on preattentive responding. This preattentive response occurs prior to cognition and therefore may not be exacerbated by authoritarianism.

An alternative explanation might be that the exacerbation of threat by authoritarianism may only be to social threats and that the threat used here, snakes and spiders, did not activate systems related to authoritarianism. For example, Onraet and colleagues distinguish between external versus internal threats (Onraet et al., 2014; Onraet et al., 2013). External threats are those that endanger both the individual and society at large while internal threats are those that threaten only the individual. Onraet et al. (2013) found that while internal threats are related to right-wing attitudes, that relationship was weaker than for external threats. Additionally, when external threat was controlled, the relationship between right-wing attitudes and internal threat was attenuated.

In a study more closely related to the present study, Butler (2013) found stronger correlations between authoritarianism and self-reported fear of social differences images (e.g. an Arab man, a drug addict, face paint) and fear of danger images (e.g. aimed gun, carjacking, surgery) than of animal images (e.g. spider, snake, shark). A hierarchical multiple regression found that fear of social differences, entered first in the model, accounted for 21 percent of the variance in RWA. The addition of fear of animals and danger, both added in the second step, provided a significant increase in accounted variance, but only four percent. Both of these reports suggest that the lack of effect reported here might be due to our use of an internal, phylogenetic threat rather than an external, social threat.

While LHS is not as well known for responses specifically to threat as authoritarianism, we still expected an effect due to the large literature on LHS and risk. Given that those with slow life histories are generally more averse to risk, we anticipated that they would react to threat in a similar fashion, responding more quickly and negatively than those with fast life histories. However, our data did not support this; there were no differences between those with slow and fast histories on the detection of the threat image within the 8 non-threat images relative to the detection of a non-threatening image embedded with 8 threatening images. One possible explanation that would retain the differences in risk and threat detection between the two life history strategies and account for the present results is that the threat presented here is too entrenched in our evolved psychology. That is, a fear of spiders and snakes would have been adaptable for our ancestors regardless of life

history strategy. This interpretation might suggest that other, less phylogenetically relevant threats might show such differences in response to those threats (Brosch & Sharma, 2005).

We must acknowledge some limitations. First, the sample is admittedly WEIRD (White, Educated, Industrialized, Rich, and Democratic) and predominantly female. These two features of the sample are, unfortunately, typical of human behavioral research in psychology. Second, the weak Cronbach's alpha for the shortened version of the RWA (Dunwoody & McFarland, 2018) may appear to be a limitation. However, given the relatively small sample size and the small number of items for the scale, this alpha should be seen as acceptable (Tavakol & Dennick, 2011).

Overall, the results of the present study suggest that both authoritarianism and LHS are related, with those high in authoritarianism tending towards a slow life history. Given that authoritarianism is characterized as a desire for and defense of traditional values and social norms, this makes sense; individuals with slow life histories live in stable and resource rich environments and would want to protect that environment. The lack of effects of both authoritarianism and LHS on the preattentive detection of threat is interesting. That there may be multiple explanations for why those high in authoritarianism and those with slow life histories did not respond more quickly to the threat suggests that much more research is necessary before the claim can be made that either authoritarianism or LHS leads to changes in threat detection.

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