



Commentary

Of unbiased beans and slanted stocks: Neutral stimuli reveal the fundamental relation between political ideology and exploratory behaviour

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Fiagbenu *et al.* (2019, *British Journal of Psychology*) questioned the nature and extent of ideological differences in learning and behaviour documented by Shook and Fazio (2009, *Journal of Experimental Social Psychology*, 45, 995). We correct a mischaracterization in their depiction of Shook & Fazio's research, and in doing so, we outline why the original findings represent domain-general ideological differences in attitude-formation processes, rather than simple differences in responses to physical threat. We also report new data that suggest a potential mechanism for the authors' findings and further highlight the importance of novel, ideologically neutral stimuli when examining fundamental psychological differences between liberals and conservatives.

In a recent article, Fiagbenu, Proch, and Kessler (2019; hereafter, FP&K) revisit research by Shook and Fazio (2009; hereafter, S&F) that identified ideological differences in the exploration of novel stimuli (specifically, finding that conservatives were relatively more cautious than liberals). The central claim of FP&K's article is that the ideological asymmetries observed by S&F are due to the specific nature of the stimuli that were used, rather than representing more general liberal–conservative differences in cognition and behaviour. Based on findings from their own study, FP&K argue that the greater caution that S&F documented among conservatives is limited to physically threatening stimuli. However, this argument has one major flaw: S&F's research *did not include any physically threatening* stimuli. In this commentary, we aim to correct this mischaracterization of S&F's original research and to offer an alternative interpretation of FP&K's findings.

Using the 'BeanFest' paradigm, S&F found that when exploring a novel environment containing positive and negative stimuli (so-called 'beans' with point values of either +10 or –10), conservatives showed more cautious patterns of exploration, engaging in less approach behaviour. Because information gain in BeanFest is contingent on approach behaviour, misconceptions that a bean is positive tend to be corrected by later approach decisions, whereas misconceptions that a bean is negative promote avoidance behaviour and a maintenance of the mistaken belief (Fazio, Eiser, & Shook, 2004). Accordingly, conservatives' more cautious exploration led them to exhibit a negativity bias in their

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learning – that is, a valence asymmetry involving better learning of the negative (vs. positive) beans.

In their study, FP&K manipulated whether the BeanFest task was framed as (1) a food-foraging task in which participants had to seek out good (and avoid bad) beans to gain ‘health points’ and avoid death, or (2) a stock-market trading game in which participants had to choose good (and avoid bad) stocks to gain ‘profit points’ and avoid bankruptcy. In the life-or-death version of BeanFest, conservatives exhibited more cautious exploration – similar to S&F’s original research. However, when framed as a stock-market trading game, it was *liberals* who exhibited greater caution. Based on these findings, FP&K attempt to explain S&F’s findings by arguing that conservatives’ ‘greater reluctance to explore the beans reflects their greater tendency to avoid situations that signal potential threat to physical safety’, as they contend is true of ‘the life-death situation simulated in BeanFest’ (p. 10).

However, S&F’s research did not incorporate any of these life-or-death elements. Rather, S&F employed a neutrally framed BeanFest task that simply described the game in terms of gaining or losing points. Unlike FP&K’s modified paradigm, the original study made no mention of ‘life’, ‘death’, ‘health’, ‘eating’, ‘malnutrition’, or ‘illness’ (p. 14). Thus, FP&K’s explanation for the ideological differences S&F documented in learning and behaviour – that they represent ideological differences in responses to ‘threat to physical safety’ – cannot possibly account for these findings.

The neutral framing noted above – which was chosen specifically to avoid the kinds of alternative explanations suggested by FP&K – was a critical feature of S&F’s experimental design. The ‘beans’ used in the task were simple graphical representations differing only in their shape (from round to oblong) and pattern (from few dots to many). The novel and neutral nature of these stimuli means they are not confounded by pre-existing knowledge, experience, or attitudes. As such, the BeanFest paradigm provides an index of individual differences in domain-general attitude-formation processes. Evidence for the validity of the measure comes from over 15 years of research demonstrating that it predicts a wide variety of important and theoretically cohesive outcomes across diverse domains of personality, beliefs, and behaviour (see Fazio, Pietri, Rocklage, & Shook, 2015, for a review).

Thus, S&F’s original research demonstrated that liberals and conservatives differ in domain-general attitude-formation processes, using a well-validated measure that is a powerful predictor of many important downstream outcomes. But what, then, explains the reversal of these effects observed in FP&K’s StockFest paradigm? We propose that these differences may simply stem from pre-existing ideological differences in attitudes towards the target stimuli, stocks. In other words, stocks – unlike S&F’s beans – are not ideologically neutral stimuli, and behaviour in the StockFest paradigm, while interesting in its own right, therefore tells us little about the existence (or lack thereof) of general psychological differences between liberals and conservatives.

FP&K attempt to pre-emptively dismiss this concern by presenting the most extreme possible version of the ideology-negativity bias hypothesis: If liberals and conservatives generally differ in their degree of negativity bias, then conservatives should ‘exhibit greater sensitivity to *all* kinds of negatively valenced stimuli than liberals’ [emphasis theirs] (p. 3). However, this is an unnecessarily and unrealistically stringent criterion for determining whether ideological differences in negativity bias exist. No one would seriously contend that ideological differences in attitudes towards complex, socially laden topics, such as taxes or climate change, necessarily represent domain-general ideological differences in attitude-formation processes. These attitudes are far more likely to be

shaped by the various cultural, worldview, and lifestyle differences between those on the left and right. For the same reasons, it would be ill-advised to utilize such complex stimuli to investigate ideological differences in basic attitude-formation processes. Research clearly shows that the degree of positivity/negativity of a stimulus shapes approach behaviour (e.g., Fazio *et al.*, 2004). Therefore, pre-existing ideological differences in attitudes towards complex stimuli would be expected to shape liberals' and conservatives' behavioural responses to them – and if these differences are sufficiently strong, they would even overcome domain-general ideological differences in attitude-formation processes (e.g., conservatives' general tendency towards more cautious exploration). Thus, if similar ideological differences exist in attitudes towards stocks/the stock market, this could offer a straightforward and parsimonious explanation for FP&K's findings: They may simply stem from pre-existing differences in attitudes towards the target stimuli.

To provide a preliminary test of this possibility, we conducted a brief study in which we asked participants ($N = 335$ from Mechanical Turk) to rate their positivity/negativity towards a range of 25 different attitude objects (e.g., potatoes, theme parks, cotton swabs; Data are available at <https://osf.io/j937q/>). Embedded randomly within these topics were our three attitude objects of interest: stocks, the stock market, and beans. As predicted, we found that political ideology (measured by a 9-point scale from 'extremely liberal' to 'extremely conservative') was associated with attitudes towards both the stock market ($r = .39, p < .001$) and stocks ($r = .24, p < .001$), with conservatives exhibiting greater positivity towards both. Further, confirming the ideological neutrality of the BeanFest paradigm, there were no ideological differences in positivity towards beans ($r = .09, p = .09$; trending towards conservatives feeling more *positively* towards beans, in contrast to FP&K's predictions).

FP&K explicitly note that their work did 'not address mechanisms behind the reversal' (p. 11) of the ideological differences that they observed with StockFest. Our findings may help fill this gap by suggesting a possible psychological mechanism for their effect. Past work has shown that a variety of experimental manipulations increase exploratory behaviour in BeanFest, including making the positive (vs. negative) beans more impactful by increasing their relative point value, instilling a promotion mindset, and inducing an expectation that beans are positive (Fazio *et al.*, 2004). Such situational factors should operate analogously to individual differences in positivity/negativity across participants. Just as these manipulations can shape approach behaviour, so, too, should pre-existing ideological differences in positivity/negativity towards stocks. The differences that we observed, with conservatives exhibiting greater positivity towards stocks/the stock market, were precisely of this nature. This suggests that baseline ideological differences in attitudes towards stocks and the stock market may explain FP&K's effects. In other words, just as we would expect from a 'TaxFest' or 'ClimateFest' task, the substantial pre-existing ideological differences in attitudes towards the target stimuli may have been of sufficient magnitude to overcome the general ideological differences in exploratory behaviour.

In this commentary, we had two central aims. The first was to correct the mischaracterization of S&F's original research. Contrary to FP&K's portrayal, this research used a neutral framing of the BeanFest task, thereby documenting ideological differences in basic attitude-formation processes. Our second aim was to suggest a possible psychological mechanism for the apparent reversal of these ideological differences in the StockFest paradigm: They may simply stem from pre-existing ideological differences in attitudes towards the target stimuli, stocks.

As we hope is evident, we appreciate the contribution of FP&K's research: demonstrating that there are boundary conditions to ideological differences in

exploratory behaviour. We wholeheartedly agree that identifying the specific contexts (e.g., the stock market) in which fundamental ideological differences do *not* emerge surely deepens our understanding of the liberal–conservative divide. However, this work also provides a cautionary tale regarding the importance of stimuli selection when conducting research on fundamental individual differences – particularly when comparing groups that differ as dramatically as do liberals and conservatives. Given the manifold cultural, lifestyle, and worldview differences between those on the right and left, it is perhaps unsurprising that there are domains in which conservatives do *not* exhibit greater caution. But just as we would not argue for the existence of domain-general psychological differences based on liberals’ and conservatives’ differing reactions to country music, gun control, or climate change, the observed ideological differences in StockFest attitudes and behaviour should not be overgeneralized as necessarily reflecting something deeper about the underlying psychology of those on the left and right. It is only through the use of ideologically neutral, novel stimuli and well-validated experimental paradigms that we will gain an accurate understanding of the psychological underpinnings of political ideology.

Author contributions

Benjamin C. Ruisch (Conceptualization; Formal analysis; Investigation; Methodology; Writing – original draft) Natalie J. Shook (Conceptualization; Writing – review & editing) Russell H. Fazio (Conceptualization; Investigation; Methodology; Supervision; Writing – review & editing).

Conflicts of interest

All authors declare no conflict of interest.

Data availability statement

The data that support the findings of this study are openly available on the Open Science Framework at <https://osf.io/j937q/>.

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