



UvA-DARE (Digital Academic Repository)

Being of one mind: Does alignment in physiological responses and subjective experiences shape political ideology?

Arceneaux, K.; Bakker, B.N.; Schumacher, G.

DOI

[10.1111/pops.13056](https://doi.org/10.1111/pops.13056)

Publication date

2026

Document Version

Final published version

Published in

Political Psychology

License

CC BY

[Link to publication](#)

Citation for published version (APA):

Arceneaux, K., Bakker, B. N., & Schumacher, G. (2026). Being of one mind: Does alignment in physiological responses and subjective experiences shape political ideology? *Political Psychology*, 47(1), Article e13056. <https://doi.org/10.1111/pops.13056>

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, P.O. Box 19185, 1000 GD Amsterdam, The Netherlands. You will be contacted as soon as possible.

UvA-DARE is a service provided by the library of the University of Amsterdam (<https://dare.uva.nl>)

Being of one mind: Does alignment in physiological responses and subjective experiences shape political ideology?

Kevin Arceneaux ¹ | Bert N. Bakker ² | Gijs Schumacher ³

¹Center for Political Research (CEVIPOF) – Sciences Po, Paris, France

²Amsterdam School of Communication Research, University of Amsterdam, Amsterdam, the Netherlands

³Department of Political Science, University of Amsterdam, Amsterdam, the Netherlands

Correspondence

Bert N. Bakker, Amsterdam School of Communication Research, University of Amsterdam, Amsterdam, the Netherlands.
Email: b.n.bakker@uva.nl

Funding information

European Commission, Grant/Award Number: 750443; H2020 European Research Council, Grant/Award Number: 759079; Nederlandse Organisatie voor Wetenschappelijk Onderzoek, Grant/Award Number: VI.Vidi.211.055

Abstract

A prominent theory in political psychology contends that individual differences in negativity bias explain political ideology: people who are more sensitive to negative stimuli find solace and comfort in conservative approaches to politics. Using self-reported measures of negativity bias, the evidence is relatively consistent. Yet, using physiological indicators of the negativity bias, the results are, across the board, inconsistent with the negativity bias argument. Building on recent neuroscience work, we propose and test two innovations. First, unconscious and conscious processes are not necessarily aligned. Therefore, we propose that there are different – conscious and unconscious – paths that could link ideology with the negativity bias. Second, individuals vary in their ability and motivation to down-regulate arousal and reflect on their emotions. As such, the ideology-negativity bias may emerge in some individuals but not in others. In two preregistered laboratory studies (US and the Netherlands), we find limited evidence for these claims. In a subsequent registered report, we replicate some inconsistent patterns that emerged in study 1. We confirm that self-reported social conservatism and implicit social conservatism (measured with an IAT) are positively correlated. We also establish that negativity bias is unrelated to social conservatism (both explicit and implicit). We conclude that negativity bias is most likely not the answer to why people on the left and right differ.

KEYWORDS

concordance, negativity bias, physiology, self-reports

This is an open access article under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2024 The Author(s). *Political Psychology* published by Wiley Periodicals LLC on behalf of International Society of Political Psychology.

INTRODUCTION

A prominent theory in political psychology contends that psychological needs shape political attitudes. Therefore, an asymmetry emerges in the psychological dispositions that liberals and conservatives possess. Some scholars in this research tradition contend that individual differences in negativity bias explain political ideology: people who are more sensitive to negative stimuli and solace and comfort in conservative approaches to politics (Hibbing et al., 2014; Jost et al., 2009). This argument is supported by positive correlations between social conservatism and (1) self-reported measures of the negativity bias (e.g., closed-personality, closed-mindedness, dogmatism, disgust, etc) (e.g., Aarøe et al., 2017; Clifford et al., 2023; Hibbing et al., 2014; Jost et al., 2017; Malka et al., 2014; Osborne et al., 2022; Tybur et al., 2016), (2) self-reported arousal (Osmundsen et al., 2022) and (3) physiological arousal in response to threatening or disgusting images (for instance, Arceneaux et al., 2018; Friesen et al., 2017; Oxley et al., 2008; Smith et al., 2011; Wagner et al., 2015). Many scholars have interpreted the correlation between physiological arousal and political ideology as strong evidence for the underlying claim that psychological needs influence political attitudes *beyond conscious awareness*.

Four independent studies, however, have failed to replicate this link between physiological arousal and social conservatism (Bakker et al., 2020; Fournier et al., 2020; Knoll et al., 2015; Osmundsen et al., 2022). In our view, this calls for a reconceptualization of the negativity bias-ideology link at the non-conscious level. Building on recent neuroscience work, we propose and test two innovations. First, unconscious and conscious processes are not necessarily aligned. Therefore, we propose that there are different – conscious and unconscious – paths that could link ideology with the negativity bias. Second, individuals vary in their ability and motivation to down-regulate arousal and reflect on their emotions. As such, the ideology-negativity bias may emerge in some individuals but not in others. This article proposes a set of hypotheses that are tested in two preregistered studies (study 1) and two studies from a registered report (study 2).

THE NEGATIVITY BIAS-IDEOLOGY LINK

An important assumption in the literature on the negativity bias (also known as the Ideological Asymmetry Hypothesis) in political psychology (Hibbing et al., 2014) is that conscious and unconscious processes align. So-called physiological traits are argued to correlate with political attitudes (for instance, Arceneaux et al., 2018; Friesen et al., 2017; Oxley et al., 2008; Smith et al., 2011; Wagner et al., 2015). In their seminal study published in *Science*, Oxley et al. (2008) found in a sample of 46 Nebraskans that electrodermal activity in response to three “threatening” images (out of 33) correlated with socially conservative attitudes on 18 issues—e.g., abortion, gay marriage, military spending, etc. The same research team found that among a sample of 50 Nebraskans electrodermal responses to five “disgusting” images (of which one was categorized as “threatening” in Oxley et al. (2008)) correlated with social conservative attitudes on 16 of the 18 issues featured in Oxley et al. (Smith et al., 2011). These findings were interpreted by Oxley et al. (2008) as evidence that ideology has a “built-in, almost ‘automated’ ... response” (see also Aarøe et al., 2017; Arceneaux et al., 2018; Smith et al., 2011). Moreover, these findings were, therefore, interpreted as evidence for a biological basis for the robust, positive correlation between political conservatism and self-reported measures of sensitivity to uncertainty and threat and, thus, the negativity bias argument.

Recent replication studies raise doubts about the link between physiological negativity bias and social conservatism. Bakker et al. (2020), for instance, conducted a preregistered, well-powered (approximately 4 times the original sample size) replication and extension. They failed to find evidence of a physiological “trait” for threat or disgust sensitivity: the physiological

responses to the different images did not show evidence for a latent trait. Moreover, the preregistered results showed strong evidence in favor of the null-hypotheses of no association between threat sensitivity and conservatism (Bakker et al., 2020). Null findings were also reported in other more direct (Osmundsen et al., 2022), and more conceptual (Fournier et al., 2020; Knoll et al., 2015) replication studies. Bakker et al. (2020) interpret the absence of a strong correlation between physiological responses and political attitudes as a confirmation of research in neuroscience that finds only a loose concordance between physiological and behavioral responses as well as weak evidence that physiological responses are unambiguous indicators of stable traits in neurotypical adults (see Schaefer et al., 2014).

This resonates with the more general view that emotions, such as anxiety, fear, and disgust, arise from a multi-level response system that has physiological, experiential, and behavioral components (Darwin, 1872/1998; James, 1884, 1894; Levenson, 2003). Research on anxiety in the 1960s failed to find strong evidence that these three components act in concordance (Lang, 1968). Physiological arousal in response to ostensibly fear-provoking stimuli need not accompany reports of anxiety or vice versa, nor do either of these channels need to align with behavioral responses. At best, physiological reactions to emotional stimuli and self-reports of affective states are loosely correlated (Bradley & Lang, 2000). Researchers have proposed various reasons for the loose concordance of the automatic, cognitive, and behavioral components of emotional processing. One set of explanations contends that because people process emotions on both nonconscious and conscious levels (Evers et al., 2014), people can regulate their emotions by nonconsciously or consciously decoupling self-reports from physiological responses (Butler et al., 2014). Beyond actively suppressing emotions, concordance may only occur when physiological responses pass a critical threshold that motivates alignment among cognitive and behavioral components (Evers et al., 2014; Schaefer et al., 2014).

A DUAL PROCESS ACCOUNT OF THE NEGATIVITY BIAS

To make sense of the disconnect between conscious and unconscious responses, we draw on neuroscience research to theorize about possible paths between individual differences in the negativity bias and social conservatism on both levels.

Building upon the dual process theories, Figure 1 offers a stylistic model for the paths through which conscious and unconscious measures of the negativity bias and social conservatism could be associated with each other. Paths a, b, and c are the core of the existing negativity bias-ideology argument. The positive correlation between self-reported measures of negativity

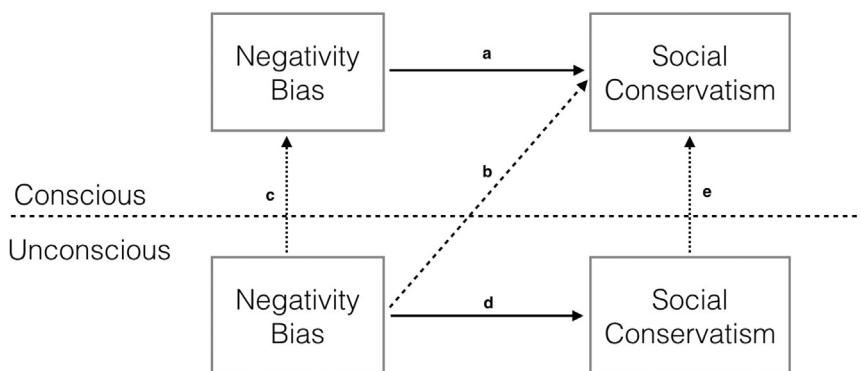


FIGURE 1 Connections among conscious and unconscious aspects of negativity bias and political attitudes. Solid arrows represent strong relationships and dotted arrows represent weak ones.

bias and social conservatism is represented by the solid path arrow marked *a*. Hibbing and colleagues (Hibbing et al., 2014; Oxley et al., 2008) assumed trait-like individual differences in negativity bias at the unconscious level that are connected to conscious negativity bias (path arrow *c*). They also showed evidence for a link between unconscious negativity bias to consciously expressed political attitudes (path arrow *b*) (Hibbing et al., 2014). As discussed, extant research casts doubt on the notion that physiological responses are a domain-general measure of negativity bias, as is implied by path arrow *c*, as well as the notion that physiological responses map cleanly on expressed political attitudes, as path arrow *b* posits. For this reason, these paths are drawn as dotted arrows in Figure 1.

Following dual-process theories of information processing (e.g., Butler et al., 2014; Evans & Stanovich, 2013; Evers et al., 2014, but see Melnikoff & Bargh, 2018), people react to stimuli on physiological (unconscious) and experiential (conscious) levels. Yet, the two levels do not necessarily interact, and relationships between biases and preferences may be stronger on the same level than between levels. Put differently, an unconscious negativity bias may be associated with an unconscious preference for social conservatism. Therefore, we add to the standard model of paths *a*, *b* and *c*, the hypothesis that unconscious negativity bias is likely associated with unconscious social conservatism (path *d*). Because of the general weak association between implicit and explicit measures in psychology (Greenwald et al., 2003) and political science (Theodoridis, 2013, 2017)—we anticipate a weak connection between unconscious and conscious expressions of social conservatism (path arrow *e*). We preregistered to test the paths *a*–*e*.

AFFECTIVE CONCORDANCE AND DISCONCORDANCE BETWEEN PHYSIOLOGICAL AND EXPERIENTIAL RESPONSES

So far, we have outlined the expectations between physiological and experiential instances of both the negativity bias and social conservatism 1. In this section, we introduce a novel argument to the political psychology literature, namely that physiological and experiential responses can be concordant (or aligned) and discordant (or unaligned). Researchers have proposed various reasons for the loose concordance of the automatic, cognitive, and behavioral components of emotional processing. One set of explanations contends that because people process emotions on both nonconscious and conscious levels (Evers et al., 2014), people can regulate their emotions by nonconsciously or consciously decoupling self-reports from physiological responses (Butler et al., 2014). Beyond actively suppressing emotions, concordance may only occur when physiological responses pass a critical threshold that motivates alignment among cognitive and behavioral components (Evers et al., 2014; Schaefer et al., 2014).

Taking individual variation in emotion regulation and meta-cognition into account leads to a novel set of expectations (visualized in Figure 1). Following the dual-process theories of information processing (e.g., Evans & Stanovich, 2013; Evers et al., 2014, but see Melnikoff & Bargh, 2018), people react to stimuli (e.g., images in a controlled experimental setting) on physiological and experiential levels. Using this insight, we create four possible reaction patterns consisting of physiological and experiential patterns in Figure 2. Figure 2 displays our expectations for an individual who consciously reports having a negative reaction to negative stimuli (e.g., an image of a snake). The x-axis represents experienced arousal and the y-axis represents physiological arousal (e.g., electrodermal activity). The responses of individuals who fall in quadrants II and III are concordant, while those in quadrants I and IV are discordant. We hypothesize that individuals are more likely to bring behavioral responses (i.e., political attitudes) in line with physiological responses when physiological and experiential affective states are concordant. Specifically, we predict that individuals who fall in quadrant II—(a)

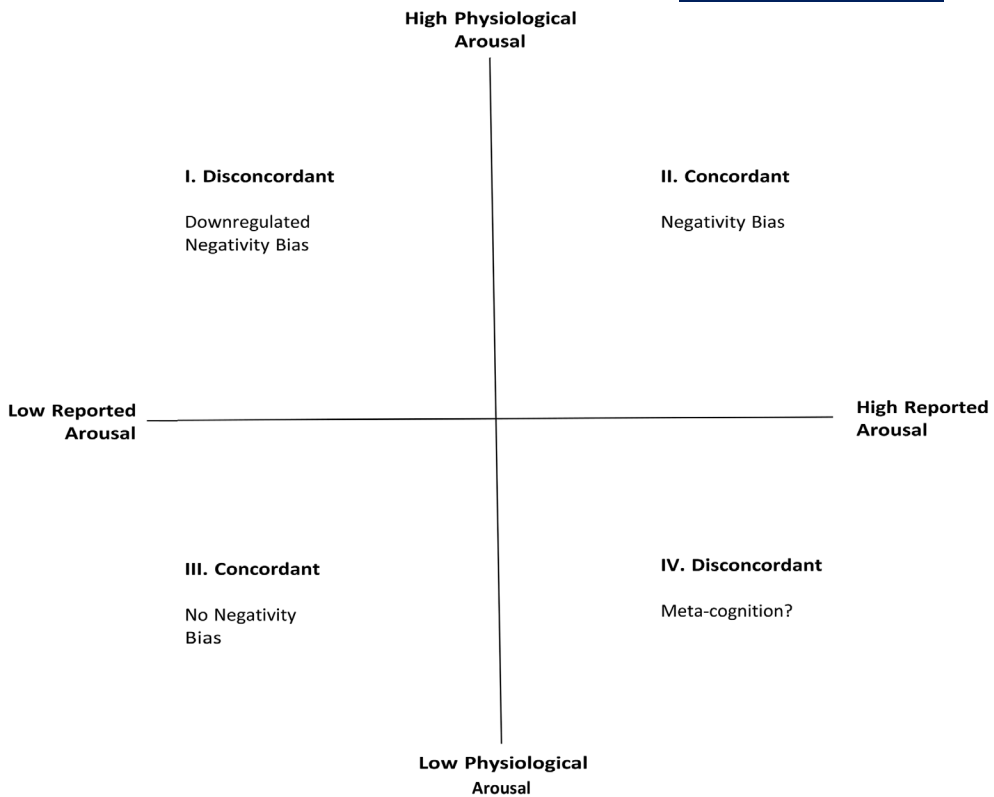


FIGURE 2 Theoretical predictions for negativity bias. The x-axis represents reported emotional arousal in response to negative stimuli. The y-axis represents a physiological response to negative stimuli. The predictions in this figure are conditional on the individual expressing a negative emotional state in reaction to negative stimuli.

physiologically aroused by negative images and (b) report experiencing arousal and negative affect—should be more likely to support “socially protective policies” (Oxley et al., 2008, 1667) than individuals falling in quadrants I, III or IV, albeit for different theoretical reasons.

Individuals who fall in quadrant II are more sensitive to negative stimuli and they are aware of this. Therefore, they should be more likely to experience negative emotional states when confronted with threats (e.g., anxiety and fear) and, thus, seek protective policies. Individuals who fall in quadrant III show a concordant lack of negativity bias. They are less likely to perceive the environment as threatening (relatively to those in quadrant II) and, thus, less likely to seek protective policies. Individuals who fall in quadrants I and IV display a disconcordant response pattern. Individuals in quadrant I experience arousal to negative stimuli on a physiological level, but do not report arousal. These individuals have downregulated their arousal (either consciously or nonconsciously) (Butler et al., 2014) and, thus, may be less motivated to seek out protective policies than individuals who fall in quadrant II.

Finally, individuals who fall in quadrant IV express high arousal to negative images, but do not show arousal on a physiological level. Fanselow and Pennington (2018) contend that quadrant IV is not theoretically permissible (and report never observing it empirically). As such it could represent measurement error. It could also be a sign of meta-cognition. From our vantage point, a particularly interesting type of meta-cognition would manifest as an “expressive negativity bias hypothesis.” Extant research shows that self-reported measures of negativity bias are positively associated with conservatism (Hibbing et al., 2014). However, conservatives might assign more value to their negativity bias and therefore communicate this trait through self-reports (Ludeke et al., 2016). More broadly, the expressive negativity bias hypothesis would

hold that conservatives are motivated to express the experience of threat as this fits with their ideological and/or partisan identity (Brandt & Bakker, 2022; Huddy et al., 2015; Mason, 2018). If the *expressive negativity bias hypothesis* is correct, then individuals in quadrant II should be more socially conservative than individuals in quadrants I and III (note that these last expectations was not explicitly preregistered).

EMPIRICAL APPROACH: TWO PREREGISTERED LABORATORY STUDIES AND ONE REGISTERED-REPORT STYLE SURVEY-BASED STUDY

We report the results of two preregistered laboratory studies conducted in the United States and the Netherlands. The laboratory studies provide a full test of the model specified in Figure 1 and the theoretical predictions about the association between the negativity bias and concordance and discordance outlined in Figure 2. The results of these two preregistered laboratory experiments lead to the proposal of a follow-up study that was conducted following the registered report format. In the registered report study, we intended to replicate some inconsistent associations we found in study 1.

STUDY 1: THE ASSOCIATION BETWEEN POLITICAL ATTITUDES AND AFFECTIVE CONCORDANCE AND DISCONCORDANCE

Transparency, openness and ethics

We conducted two laboratory studies: one in a laboratory located in a large city on the east coast of the US and one in a large city in the Netherlands. The data collections were part of larger omnibus laboratory studies. For both studies (in the US and the Netherlands) the study design, hypotheses, and analysis plan were preregistered on the Open Science Framework (US: <https://osf.io/ea86j>; NL: <https://osf.io/n2sjb>). All replication materials – data and code to reproduce the results as well as the study materials (where possible) – are available on the Open Science Framework. To be fully transparent: both preregistered studies also contained a series of issue experiments: these will be reported in another manuscript. The studies have received ethical approval [Study 1 US: #25565 Temple University; Study 1 Netherlands: #2019-CS-10014 & #2019-AISSR-1116].

In what follows we discuss the design of the study. To save space, we report the general characteristics of the study. The preregistration documents are very detailed and we refer interested readers to these. Also, to not overburden readers with lengthy appendixes, we refer the reader to the replication materials for details on the empirical tests.

Participants

In each laboratory, we recruited a diverse sample from people living around the university campus. Participants were compensated in line with the IRB guidelines in the two countries. In the preregistration documents, there was no sample size justification (Lakens, 2022) but we preregistered to collect samples of 200 participants. In the US, we collected data for 153 people between 20/03/2019 to 12/03/2020. A software update halfway through the data collection period, distorted our data collection: the time-specific markers in the physiological data were not stored. This yielded the physiological data of 82 (52.3%) participants useless as we cannot

pair the stimulus exposure to the physiological data. As the software update was exogenous we assume the drop-out of the data can be treated as-if random. Due to the onset of the covid-19 pandemic and the fact that one of us (Arceneaux) left Temple University afterwards, we could not restart data collection. The sample size that we rely upon is therefore 71 observations – and sometimes a little bit less due to list-wise deletion.

In the Netherlands, we collected data for 172 participants data in the fall of 2019 and the spring of 2020. Both sample sizes are smaller than anticipated, but still a lot larger than most studies in the physiology and politics literature. Moreover, both samples are diverse and show enough variation on the variables of interest (Krupnikov et al., 2021) but, as the case in laboratory studies, the samples do not approximate the broader population in the area around our laboratories.

Measuring social conservatism

After consenting to participate in the study, participants completed a survey collected via the Qualtrics platform. The survey asked standard questions about demographics (age, gender, race, income, education), partisan identification, political knowledge, and personality. Ideology is in both samples measured with a series of 15 policy items tapping into social conservatism (Bakker et al., 2020, see for a similar approach). The ideology variables were recoded to range from left-wing (liberal) to right-wing (conservatism) and *z*-standardized. To measure social conservatism unconsciously, we embedded an ideology implicit association test in using the *iatgen* R package (Carpenter et al., 2019). We selected eight words related to liberals and eight words related to conservatism (see Table 1): four positive (wonderful, best, superb, and excellent) and four negative (horrible, terrible, awful, and worst) words. For each individual, we calculate a *d*-score following the procedures outlined by Greenwald et al. (2003). We code the responses so that a positive *d*-score means a pro-conservative bias. Psychometric properties and descriptive statistics for all measures can be derived from the replication files.

Measuring the negativity bias

In the next stage of the study, participants completed an image-viewing task. Specifically, we exposed participants to images from the IAPS (Lang et al., 1997) and GAGED (Dan-Glauser & Scherer, 2011) databases that were validated to be generally negative (e.g., snakes, total #8), evoke domain specific negativity (e.g., hunting, total #6), neutral (e.g., spoon,

TABLE 1 IAT: Words related to liberal and conservatism.

Liberal	Conservative
Open borders	Closed borders
Support abortion	Oppose abortion
More immigrants	Fewer immigrants
Progressive	Traditional
Legalize drugs	Ban drugs
Secular	Religious
Feminism	Respect authority
Oppose death penalty	Support death penalty
Support gay marriage	Oppose gay marriage

total #7), or positive (e.g., baby seal, total #7). Exposure to the images was 8 s with an 8-s Inter-stimulus Interval (ISI) between each image – for details see preregistration documents (Table 1). The first image was always a neutral image, while the rest was randomly rotated afterward.

To measure the conscious aspect of the negativity bias we asked participants to self-report their arousal using the Self-Assessment Manikins (Bradley & Lang, 1994) after seeing each image. These self-reports were *z*-standardized so that high numbers indicate a higher level of arousal.

During the image-viewing task we measured participants' electrodermal responses to the images to measure the unconscious negativity bias. In the US, we recorded electrodermal responses using a Biopac system that was paired with stationary computers running on Windows 7, in the Netherlands we recorded physiological data using the Versatile Stimulus Response Registration Program 1998 (Vsrrp98) software on stationary computers running Windows 7. In both countries, biosensors were connected to the first two distal phalanges of the non-dominant hand, and skin conductance was recorded in microSiemens every millisecond. As preregistered, we measured electrodermal response (EDR) by taking the average of the natural log of Skin Conductance Levels (SCL), which are measured in microSiemens, between 2 and 6 s after the onset of a target image (T). From this, we subtracted the average of the natural log of the last 500 milliseconds of the SCL in the ISI (i.e., a baseline SCL).

Preregistered manipulation checks

Following the procedures outlined by Arceneaux et al. (2018), we tested whether the threatening images are indeed more arousing than neutral images. To do this, we took the change in SCL response to each image participants were exposed to as a dependent variable and used dummy variables for the 27 images as independent variables with a neutral image (basket in US, stairs in NL) as the reference category. We conducted an OLS regression model with standard errors clustered on participants. We find – as expected – that on average the negatively valenced images (e.g., spiders, snakes, guns, and attacks) produced significantly more physiological arousal than the neutral images. Note that to save space, the results from the manipulation checks can be derived from the replication files.

As a next step, we repeat these models for the self-reported levels of arousal.¹ In line with our preregistered expectations, we find higher self-reported arousal in response to the threatening images compared to the neutral images.² To summarize, our preregistered manipulation checks, show that our measures behave as expected.

Preregistered hypothesis tests following the theoretical model in Figure 1

We tested paths a-e between conscious and unconscious aspects of negativity bias and social conservatism. The results are presented in Figure 3. Aside for path e, which we will explain later, we used the same modeling strategy for all paths. We stacked the data by images, so that each row in the dataset represents an individual response to a single image, and run OLS regression models. In each model, we include fixed effects for images and clusters by participants as responses are nested within individuals. Aside from the fixed

¹Here we used the responses to spoon image as reference category, because we did not ask to report arousal in response to the basket image.

²Our results do not change if we repeat these models so that every neutral image once served as the reference category.

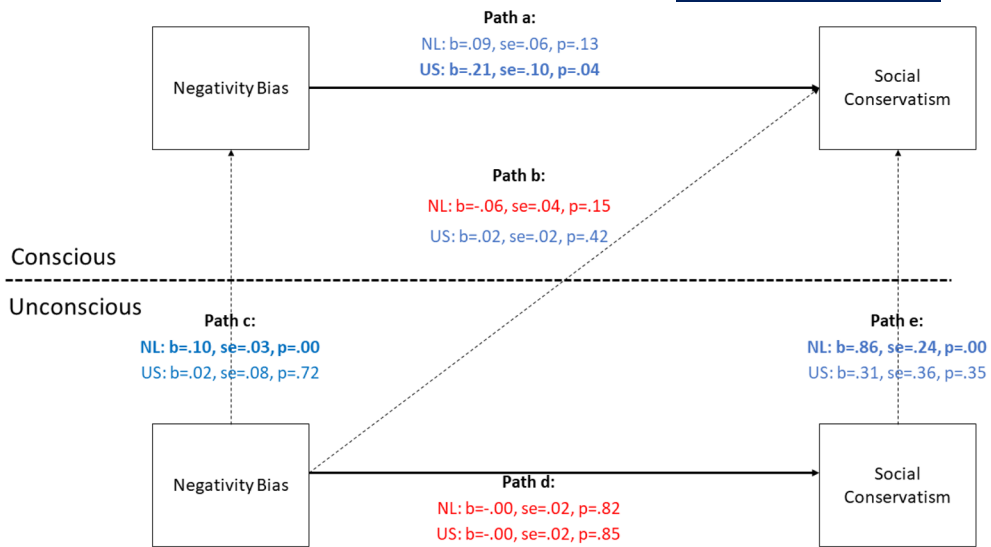


FIGURE 3 Relationships between conscious and unconscious ideology and negativity bias. The figure shows OLS regression results for the Dutch (NL) and American (US) samples. Each line is estimated by a separate OLS regression using robust standard errors and controlling for a number of background variables. Results in blue are in line with theoretical predictions, and results in red are in the opposite direction as predicted. Bold results are statistically significant using a two-tailed test with $\alpha < .05$.

effect for image, we included the following preregistered control variables: age, gender, education, income, and payment of the participant (credits, student payment, or non-student). Following our preregistration documents, we use the p -value of .05 (two-sided) as the value for statistical significance.

Path A

Does self-reported negativity bias positively correlate with self-reported social conservatism? *A tentative “Yes”*. Both in the Netherlands ($b = .09$, $SE = .06$, $p = .13$) and the US ($b = .21$, $SE = .10$, $p = .04$) we find positive, but not statistically significant in the Netherlands, associations between self-reported arousal in responses to threatening images and self-reported social conservatism. This is in line with the work by Osmundsen et al. (2022) and the effect sizes are small, in line with what one would expect. Note that this operationalization of path a was not preregistered as such: we realized during data analysis that this was a more direct test than the preregistered test of path a see footnote 6 for a discussion of the preregistered results of path a.³

³We preregistered to correlate personality traits, that have been associated with negativity bias (Hibbing et al., 2014; Jost et al., 2017; Malka et al., 2014), with social conservatism. The results largely align with the extent literature – although not always in terms of statistical significance. In the Netherlands we find that social conservatism correlates negatively with Openness ($r = -.15$, $t = -1.81$) and positively with Conscientiousness: ($r = .18$, $t = 2.19$) and Phobic fear ($r = .08$, $t = .96$, $p = .34$). In the US, we find that social conservatism correlates negatively with the Big Five trait Openness to Experience ($r = -.34$, $t = -3.03$, $p = .00$), is unrelated to Conscientiousness ($r = .00$), and positively correlated with Neuroticism: ($r = .12$, $t = .98$, $p = .33$), Authoritarianism ($r = .63$, $t = 6.81$, $p = .00$) as well as Phobic fear ($r = .19$, $t = 1.62$, $p = .11$). All in all we find, largely in line with the extent literature, that there is a weak association between self-reported negativity bias and self-reported social conservatism.

Path B

Does physiological negativity bias positively correlates with self-reported social conservatism? *No*. In the Netherlands we and a *negative*, instead of positive, (but not statistically significant) association between physiological responses to negative images and social conservatism (NL: $b = -.06$, $SE = .04$, $p = .15$), while the point estimate in the United States is essentially zero and not statistically significant (US: $b = .00$, $SE = .02$, $p = .93$). These insignificant results align with earlier replication studies of the Oxley et al. (2008) study (e.g., Bakker et al., 2020; Fournier et al., 2020; Knoll et al., 2015; Osmundsen et al., 2022).

Path C

Does self-reported negativity bias in response to negative images positively correlate with unconscious EDR responses to these negative images? *Perhaps*. In the Netherlands, where our sample is also the largest, we found a weak positive association between self-reported arousal and EDR responses to these images ($b = .10$, $SE = .03$, $p = .00$). In the US, the coefficient of this association is also positive: but it does not reach the threshold for our preregistered alpha-level ($b = .02$, $SE = .08$, $p = .82$). We also preregistered to correlate individual differences in personality traits, such as phobic fear, Neuroticism and Need for Affect, with EDR responses to negative images. This is arguably a more indirect test of our expectations. Across the two contexts, the results are relatively consistent (see replication files).

Path D

Is there a positive association between unconscious negativity bias and unconscious social conservatism? *No*. Both in the Netherlands and the US, the point estimate of the association is basically zero and not statistically significant (NL: $b = -.00$, $SE = .02$, $p = .82$; US: $b = -.00$, $SE = .02$, $p = .85$). Therefore, we reject this hypothesis.

Path E

We preregistered that we would find a weak positive association between self-reported conservatism and the implicit social conservatism measure. Contrary to all other analyses, we only had one measure of social conservatism and one D-score per participant. Therefore, we present bivariate correlations and run a regular regression model controlling for age, gender, education, and income. The evidence is mixed. Starting with bivariate correlations, in the Netherlands, the correlation is positive and statistically significant ($r = .38$, $t = 4.68$, $df = 127$, $p < .00$). In the US, the association is also positive but weaker and not statistically significant ($r = .15$, $t = 1.22$, $df = 62$, $p = .23$). Turning to the regression results, which is the preregistered modeling strategy, we and a positive association, with a modest effect size, between implicit social conservatism and self-reported social conservatism (NL: $b = .86$, $SE = .24$, $p = .00$). In the US, the association is also positive but it is not statistically significant at the preregistered p -value ($b = .41$, $SE = .33$, $p = .22$). Statistical power is certainly an issue here. A posthoc power test using G*Power indicated that the Dutch study had sufficient power (99.4%), whereas the American study was severely underpowered (21.4%). We return to this issue in the registered report that follows this manuscript.

Preregistered hypothesis tests following the concordance model in Figure 2

We preregistered that people who had concordant responses (quadrant II in Figure 2: strong physiological and self-reported arousal) to express the most socially conservative policy attitudes compared to the three other groups we specified in Figure 2. We follow our preregistered analysis strategy and regress social conservatism on indicators of the different quadrants (i.e. each combination of self-reported and physiological arousal) and a series of control variables. Note that the formation of the quadrants was preregistered: a high physiological response is a physiological response to the image which, compared to baseline, is above 0, while low is below 0. The response for self-reported is high if it is above the absolute midpoint arousal scale. It is important to note that all quadrants are populated because of the weak connections between physiological responses and self-reported arousal (path C in Figure 3).

We start with the results in the Netherlands. Figure 4 shows the confidence intervals of the predicted values of social conservatism for each quadrant. This is based on an OLS regression model with covariates. We also placed the estimated differences in social conservatism between quadrants. We expected the highest values in social conservatism to be in quadrant II. We reject this hypothesis. None of the differences between quadrant II and the others is statistically significant. The only statistically significant difference we found is between quadrants I and IV ($b = -.07$, $SE = .03$, $p < .01$).

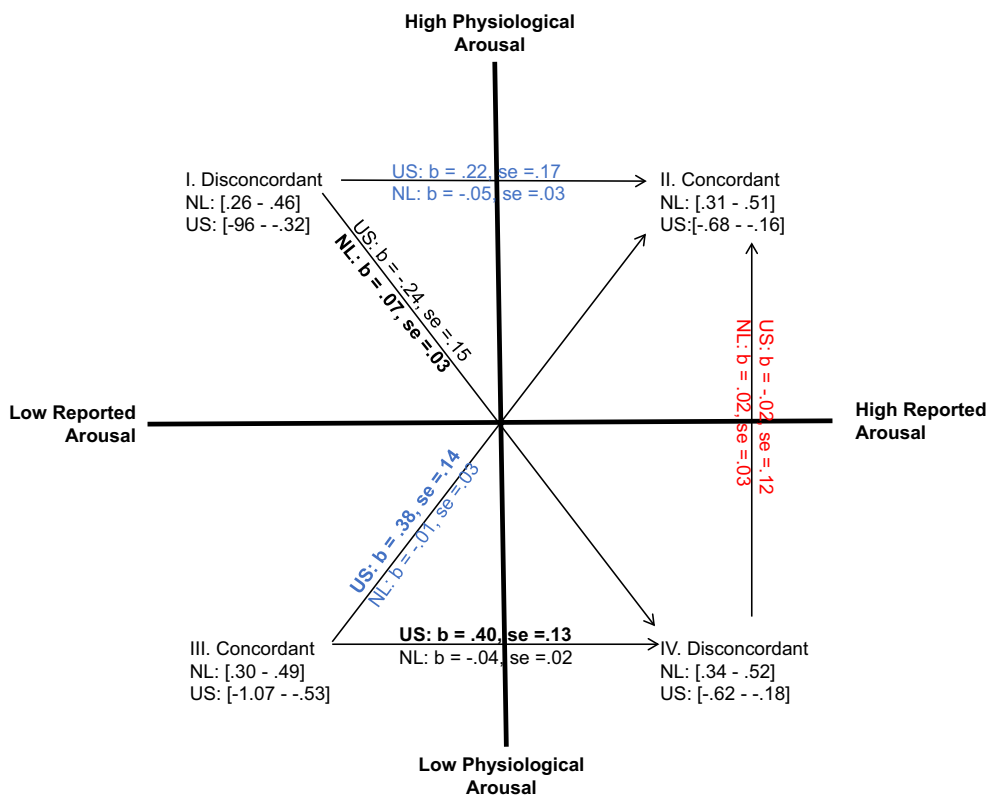


FIGURE 4 Differences in social conservatism for each quadrant. The figure shows the differences in the levels of social conservatism for each quadrant. The results are based on a single OLS regression using robust standard errors. Results in blue are in the same direction as theoretical predictions, and results in red are in the opposite predicted direction. Results in black were not preregistered. Bold results are statistically significant using a two-tailed test with $\alpha < .05$.

Generally, levels of social conservatism are higher in the quadrants that contain people with high levels of self-reported arousal. Physiological responses seem to add little. This again confirms the model we considered earlier, that most robust relations appear between self-reported ideology and self-reported negativity bias.

Turning to the results in the US, in [Figure 4](#), we again reject the hypothesis that the highest values of social conservatism are in quadrant II. The differences between quadrant II and Quadrants I and IV are not statistically significant. We do find that those who are in Quadrant III have lower levels of social conservatism (as indicated by a higher negative coefficient on the standardized social conservatism scale) compared to those in Quadrant II ($b = -.38$, $SE = .14$, $p < .01$). We also find that those in Quadrant III have a higher level of social conservatism compared to those in quadrant IV ($b = .40$, $SE = .13$, $p < .01$).

Our preregistration document was (perhaps too) elaborate and we can't present all preregistered tests here but across the board, our results are robust to alternative tests. Yet, to avoid overburdening our readers, we refer interested readers to the replication materials to replicate these results.

Conclusions study 1

We reported the results from two preregistered laboratory studies. In it, we find very little evidence for the outlined dual-process theory (see [Figure 1](#)). First of all, we (again) fail to replicate the association between physiological (unconscious) negativity bias and social conservatism put forward in the political psychology literature (e.g., Aarøe et al., 2017; Arceneux et al., 2018; Oxley et al., 2008; Smith et al., 2011). At the same time, in line with our preregistered expectations, we found relatively consistent evidence for a positive, albeit weak, association between self-reported negativity bias and social conservatism. Turning to the unconscious associations, we find no indications for a meaningful association between physiological negativity bias and unconscious social conservatism assessed with the IAT. Yet, interestingly, we do find suggestions for a positive association between the implicit social conservatism measure (IAT) and self-reported social conservatism.

The second set of predictions focused on the concordance between physiological and self-reported negativity bias and its relationship with social conservatism. Here, the results are mixed and, at best, suggestive. We find some indications that those who are concordant in terms of high physiological and self-reported arousal report more socially conservative policy attitudes compared to people who are concordant in terms of low physiological and self-reported arousal. But, this pattern is only present in the underpowered study in the US, not in the Netherlands.

Study 1 opens up for multiple follow-up studies. Our follow-up study is motivated by the two inconsistent patterns in [Figure 3](#). First, in the US, we found a positive and statistically significant association between self-reported threat sensitivity and social conservatism (Osmundsen et al., 2022, also see). In the Netherlands, this association was also positive but not statistically significant. This inconsistency motivates our attempt to replicate this.

Second, in the Netherlands, we find a positive, modestly sized, association between the implicit measure of social conservatism and the explicit self-reported social conservatism. At the same time, in the US, this association is a lot weaker and not statistically significant. A first concern is that the original study was under-powered to detect the hypothesized association in path e. A more indirect concern is that our IAT lacks convergent validity – in other words: our measure of implicit social conservatism correlates weakly with an explicit measure of conservatism. If this is the case, it could be that the null result for path D – a positive association between physiological negativity bias and implicit social conservatism (see also, [Figure 3](#)) – is driven by the fact that our implicit measure of social conservatism is not a valid measure of conservatism. To address this, the Registered Report part of this paper explores the

convergent validity of our implicit social conservatism measure. This is important because for our dual process theory to be developed further, we need to know if and to what extent implicit and explicit social conservatism are associated.

STUDY 2 – REGISTERED REPORT: REPLICATING INCONSISTENT FINDINGS FROM STUDY 1 IN THE US AND THE NETHERLANDS

Following the conclusions of study 1, study 2 specifically tests two hypotheses: (1) we expect a positive correlation between explicit and implicit measures of social conservatism (path e in Figure 1) and (2) we expect a positive correlation between self-reported negativity bias and social conservatism expressed explicitly (path a in Figure 1). We conducted a replication of Study 1 in the Netherlands and the US. In Study 1, participants completed the study in a social science laboratory. The advantage is that we had complete control over the environment, but as we discussed above, it also limits the geographic and ideological diversity of the participants. To increase diversity and statistical power, we conducted our replication using online samples.

Preregistration

Our Accepted Stage 1 Registered Report was preregistered before data collection of the registered report study (study 2) started on the Open Science Framework: <https://osf.io/aqhsp>.

Sample

We worked together with Dynata in the Netherlands and Prolific in the US to collect our data. Participants were compensated in line with the standards of the survey company to an amount that approximates the minimum wage in the respective countries. The data were collected in the fall of 2023 (Netherlands: between 7/12–23/12; US: between 4/12–14/12). To save space, descriptive statistics of all variables can be derived from the replication files.

Sample size justification

In Study 1, we found positive associations (NL: $r = .38$ and US: $r = .15$) between implicit and explicit measures of social conservatism. For the follow-up study, we conducted power simulations in which we assumed the conservative correlation coefficient of .1, an α level of .05 (two-sided) and set power at 95%, 1100 participants should be sufficient to retrieve the expected effect. This sample size should also be more than sufficient to reliably detect small associations between self-reported negativity bias and social conservatism as we will have four observations for each individual. In the US, we ended up with a sample of 1094 participants, and in the Netherlands, we ended up with a sample of 1249 participants who completed the IAT successfully. Our study is thereby sufficiently powered for the core tests of interest.

Ethics

We received ethical approval for the study from the ethics board of the University of Amsterdam: FMG-5592.

Procedure

Data were collected using Qualtrics. After signing the informed consent form, participants completed the measures of explicit social conservatism, the IAT, and an image viewing task to probe the negativity bias, the background variables, and some questions related to other projects. To avoid any ordering effects, the order of the blocks was randomized across individuals.

Measures and coding

Social and economic conservatism

Social and economic conservatism were measured in the same way as in Study 1 (see also our accepted stage 1 manuscript).

Implicit association test

We include the same implicit association test as in study 1 (see [Table 1](#)).

Self-reported negativity bias

Like study 1, participants engaged in an image viewing task. We exposed participants to a series of nine images: each image is shown for 2s with an 2-s Inter-stimulus Interval (ISI) between each image. The basket (IAPS #7010) is always the first image shown, and afterwards we showed, in random order, eight images of which four were negative and four were positive images. We pick images that were also used in Study 1 in the Netherlands, in particular, the threatening (negative) images are of a Snake (IAPS #1050), a spider (IAPS #1120), a gun (IAPS #6230), and an attack (IAPS #6350), while the positive images are of a Baby Seal (GAPED #PO97), Baby (GAPED #P007), Beautiful scenery (GAPED #P064), and a Baby Polar Bear (GAPED #P095).

Starting with the first image, participants disclosed their emotional state using the Self-Assessment Manikin protocol developed by Bradley and Lang (1994) to measure arousal in response to each image. Responses to the Manikins ran from 1 to 9. For details on the Self-Assessment Manikin, see the preregistration documents in Study 1.

Covariates

The survey asked standard questions about demographics – see the stage 1 registered report for item wording.

Hypothesis 1: association between explicit and implicit measures of social conservatism

First, we will conduct bivariate correlations between the two measures of social conservatism. Second, we will regress self-reported conservatism on the *d*-score (implicit social conservatism) while including the control variables age, gender (Reference category: Male), education

(Reference category: Less than high school), the ordering of the blocks (e.g., the order in which explicit conservatism, implicit conservatism and the image viewing task were presented), as well as race (US only, reference category: Black). We do this using Equation (1). Here, X is a matrix of control variables (age, gender, education and ordering of the block) and Γ is a vector of regression coefficients. We expect a positive and statistically significant association for β_1 between the social conservatism and D-score.

$$\text{Conservatism}_i = \beta_0 + \beta_1 \text{Dscore}_i + X\Gamma + \epsilon_i \quad (1)$$

In case, we fail to reject the null-hypothesis of no-association in the test(s) using Equation (1), then we will calculate the Bayes Factor to quantify the evidence in favor of the null hypothesis – here we follow similar procedures as Bakker et al. (2020). We will use Raftery's (1995) criteria to quantify the strength of the evidence for the null hypothesis if this is the case.

In addition to these tests, we will also correlate self-reported ideological attachment and vote choice with implicit conservatism to further evaluate the convergent validity of the IAT procedure.

Hypothesis 2: the association between negativity bias and measures of social conservatism

The analyses for hypothesis 2 are different. Here, we will use Equation (2). For these analyses, we will stack the data by the four negative images, including fixed effects for images and cluster by participants. We will regress self-reported conservatism on self-reported arousal while including the control variables age, gender (Reference category: Male), education (Reference category: Less than high school), the ordering of the blocks (e.g., the order in which explicit conservatism, implicit conservatism and the image viewing task were presented), as well as race (US only, reference category: Black). In Equation (2), X is the matrix of control variables and Γ is a vector of regression coefficients. We expect a positive and statistically significant association for β_1 between the social conservatism and the D-score.

$$\text{Conservatism}_i = \beta_0 + \beta_1 \text{Arousal}_i + X\Gamma + \epsilon_i \quad (2)$$

We did not formulate expectations, nor test, the association between self-reported negativity bias and implicit social conservatism assessed with the IAT. Here, we will conduct an exploratory test where we replace the measure of explicit social conservatism in Equation (2) for the d -score. Like the modeling strategy for hypothesis 1, we will turn to Bayes Factors in case we report null findings.

Outcome neutral quality check

We correlate self-reported ideology with self-reported social conservatism. We expect a positive and statistically significant association between these two measures of ideology (Van der Brug & Van Spanje, 2009).

Statistical significance

Throughout this study, we use the p -value of .05 as the value for statistical significance. We preregistered to rely on one-sided tests as we have directional expectations.

Missing data

Data were collected using Qualtrics' software: participants were forced to respond. As such we don't expect missing values. Still, if these would happen (for instance due to a coding error in the survey), we committed to recoding latent variables to the mean of the items. Obviously, people could dropout from the survey: we preregister to collect 10% extra data per country to guarantee that we will remain sufficiently powered. We did not experience substantial dropout and therefore do not test, as preregistered, whether dropout was systematically associated with the background variables.

Standard operating procedures

In case we ran into unexpected issues during the data analysis that we *did not* preregister, then we committed to rely on *Standard Operating Procedures* defined by Lin and Green (2016). This turned out to be not necessary.

RESULTS

To save space, we only report coefficients of direct interest to our hypotheses: full regression results can be derived from the replication files. All tests follow the preregistered modeling strategy, aside from the deviations explained below.

Deviations from stage 1 registered report

Our recruitment included people 16 and over instead of 18 as declared in stage 1: in the Netherlands, we had 1 person under 18 and in the US none. We preregistered to test whether our results were robust to test where we relied upon vote choice instead of self-reported social conservatism but, due to a human error, we did not collect this data. In hypothesis 1 and hypothesis 2, we do not control for the ordering of the blocks as this order was not stored. As the blocks were randomized, this should not affect our estimates. Below we report the more conservative two-sided tests instead of the preregistered one-directional tests. To summarize, none of these deviations should substantially influence our conclusions.⁴

PREREGISTERED TEST OF H1

Is there a positive association between explicit and implicit measures of social conservatism? Yes. As preregistered, we find in the US (without covariates: $b = .23$, $SE = .01$, $t = 17.55$, $p < .001$; with covariates: $b = .22$, $SE = .01$, $t = 16.64$, $p < .001$) and the Netherlands (without covariates: $b = .15$, $SE = .02$, $t = 17.67$, $p < .001$, with covariates: $b = .13$, $SE = .01$, $t = 16.43$, $p < .001$) positive and statistically significant associations between the D-score and social conservatism.

Are our results for hypothesis 1 conditional upon the measure of conservatism? No. Following our preregistered exploratory test, we reran the two models per country using

⁴We find positive and statistically significant associations between social conservatism and self-reported ideological attachment measured with a 1-item measure in both the US ($r(1082) = .63$, $t = 26.36$, $p < .001$) and the Netherlands ($r(1400) = .61$, $t = 28.45$, $p < .001$). The results of the outcome neutral quality check indicate that our sample is of sufficient quality.

self-reported ideological attachment instead of self-reported social conservatism. The results in the US (without covariates: $b = .33$, $SE = .02$, $t = 16.55$, $p < .001$; with covariates: $b = .32$, $SE = .02$, $t = 15.66$, $p < .001$) and the Netherlands (without covariates: $b = .21$, $SE = .01$, $t = 18.56$, $p < .001$; with covariates: $b = .21$, $SE = .01$, $t = 17.63$, $p < .001$) align with our results using the measure of social conservatism.

PREREGISTERED TEST OF H2

Is there a positive association between negativity bias and measures of social conservatism? No. For the association between self-reported social conservatism and arousal, we find in the US ($b = .01$, $SE = .01$, $t = .64$, $p = .52$) and the Netherlands ($b = .00$, $SE = .01$, $t = .56$, $p = .58$) a point estimate that is essentially zero and statistically insignificant. As preregistered, we use Bayes Factors to interpret the strength of the evidence. The Bayes Factor for the preregistered (alternative) hypothesis in both the US ($BF_{01} = .049$) and the Netherlands ($BF_{01} = .070$) suggests there is strong evidence for the null hypothesis of no effect (Raftery, 1995).

As planned, we also conducted an exploratory test where we replaced the measure of explicit social conservatism in Equation (2) for the d -score. In the US, we find a weak positive and statistically significant association between arousal and the D -score ($b = .05$, $SE = .02$, $t = 2.52$, $p = .01$). Yet, in the Netherlands, we find a small positive but not statistically significant association between the d -score and self-reported arousal ($b = .01$, $SE = .02$, $t = .34$, $p = .73$). These results are inconsistent across two well-powered test and, at best, should be considered suggestive and will need future confirmatory tests.

Preregistered exploratory test using self-reported economic conservatism

We also preregistered, as an exploratory test, to test the association between implicit social conservatism and self-reported economic conservatism. In both the US and the Netherlands, self-reported social conservatism and self-reported economic conservatism were positively correlated with each other and of moderate strength (US: $r = .51$; NL: $r = .36$) – see also Malka et al. (2019). We did not formulate expectations for the test of hypothesis 1 using self-reported economic conservatism. We find a positive and statistically significant association between self-reported economic conservatism and the d -score in the US (without covariates: $b = .16$, $SE = .01$, $t = 11.23$, $p < .001$; with covariates: $b = .15$, $SE = .01$, $t = 10.66$, $p < .001$) and the Netherlands (without covariates: $b = .07$, $SE = .01$, $t = 8.10$, $p < .001$; with covariates: $b = .08$, $SE = .01$, $t = 8.48$, $p < .001$). We do note that this association is weaker than the association for self-reported social conservatism.

Regarding hypothesis 2, we find in the Netherlands, a weak *negative* association between arousal and economic conservatism ($b = -.02$, $SE = .01$, $t = -2.01$, $p = .04$), while in the US, this association is negative but essentially zero (point estimate) and not statistically significant ($b = -.00$, $SE = .01$, $t = -.37$, $p = .71$). Given the exploratory nature of these tests and the inconsistent results, these findings should be considered suggestive, at best.

All in all, these exploratory tests suggest that economic conservatism is, like social conservatism associated with implicit social conservatism. At the same time, we find no systematic association between the negativity bias and economic conservatism.

Exploratory inspection of the psychometric properties of the IAT

Our social conservatism IAT seems to show acceptable convergent validity as it correlates modestly to strong with self-reported social conservatism and self-reported ideology. Yet, we

did not preregister to explore the psychometric properties of our IAT. First, the proportion of trials that was dropped because it exceeded 10,000 milliseconds was low with .2% in the US and .16% in the Netherlands. Second, 9% of the participants in the US and 5% of the participants in the Netherlands were excluded because they completed the IAT too fast. Third, the error rate of the IATs in the US (11.6%) and the Netherlands (16.9%) was higher than the recommended 10% by Greenwald et al. (2003). Finally, we calculated the IAT reliability using the procedures outlined in the *iatgen* package (Carpenter et al., 2019). The reliability of our IAT is high with a value of .86 in the US and .89 in the Netherlands. Across the board, this suggests that the psychometric properties of the social conservatism IAT are acceptable (although not perfect). We acknowledge that there is much more to explore about the properties of our IAT: our data and code are publicly available.

Conclusion study 2

We find evidence in support of the preregistered hypothesis 1: implicit social conservatism correlates positively with explicit social conservatism. We do not find evidence for hypothesis 2 that negativity bias is positively correlated with explicit (or implicit) social conservatism. These well-powered tests contradict the under-powered evidence reported in study 1 as well as evidence reported by Osmundsen et al. (2022). Exploratory tests provide evidence for acceptable psychometric properties of our IAT. At the same time, exploratory analyses provide very limited evidence for possible alternative patterns that we did not preregister and when they do, the effects do not replicate across the two contexts.

GENERAL DISCUSSION

This paper is part of the special issue titled “Crowdsourcing the next generation of ideas” in political psychology. We theorized a series of possible theoretical connections between the negativity bias and ideology. Overall, we do not find strong support for the idea that political ideology is driven by individual differences in negativity bias. This conclusion runs counter to seminal work in political psychology (e.g., Hibbing et al., 2014; Jost et al., 2009) and to the ideas theorized by us at the start of this paper.

While it is possible that a more complicated model could accurately describe the (potentially reciprocal) connection between psychological traits – like the negativity bias – and political ideology (e.g., Arceneaux et al., 2024), we believe there is sufficient evidence to move beyond the thesis that negativity bias leads people to gravitate toward conservative attitudes.

For sure, we should make the caveat that this conclusion is limited to the paradigm we have used. At the same time, we draw upon results from four preregistered studies in two contexts and our findings align with a growing body of research in political psychology that has failed to find evidence for this link using physiological measures (Bakker et al., 2020; Fournier et al., 2020; Knoll et al., 2015; Osmundsen et al., 2022) as well as behavioral measures (Johnston & Madson, 2022) – see for a recent review of literature that questions the link between negativity bias and ideology (Arceneaux et al., 2024). This also means that the negativity bias – ideology link is, essentially, not replicable. Or as Hibbing (2023, p. 172) puts it: this “raises questions about the broad generalization that people on the political right are more fearful of the negative aspects of life”. This quote by Hibbing, who's work inspired us and many others to pursue this line of research, illustrates that “we should go where the science leads us” (to quote Kevin Smith who also has done much that inspired us to pursue this research). We as a field should follow the facts: there is little evidence for a direct link between negativity bias and political ideology.

At the same time, our work opens avenues for future research. The robust implicit-explicit connection for social conservatism that we established in this paper suggests that with respect to measures of social conservatism, both implicit and explicit measures tap into the concept. More work should be done to explore what researchers gain by measuring implicit conservatism as well as whether alignment or misalignment between implicit and explicit measures is predictive of political behavior. Recent work on political persuasion suggests there is an explicit as well as an implicit route to political persuasion (Bakker et al., 2021; Ryan & Krupnikov, 2021).

Methodologically, our work also shows the importance of (a) doing cumulative work and (b) the promise of the registered report format in doing so. In study 1, we found suggestive and inconsistent evidence for the link between explicit and implicit social conservatism as well as the connection between conservatism and the self-reported negativity bias. The results of study 1 were inconclusive. The registered report format used in study 2 allowed us to conduct sufficiently powered tests of these crucial paths of our theoretical model. The results of study 2 thereby provide robust evidence for a link between explicit and implicit social conservatism. Contrary to the suggestive evidence in study 1, the preregistered and well-powered test in study 2 leads us to conclude that there is also no connection between an explicit measure of the negativity bias and social conservatism. To us, this shows the importance of doing cumulative research within a project and illustrates the promise of the registered report format to gain more certainty around unexpected or inconsistent results. We hope that *Political Psychology*, and other journals in our field, will embrace the registered report format as we believe that this is the way forward for our field.

Big ideas come and go. We are optimistic about the progress political psychologists have made in the negativity bias-ideology literature. Collectively, we have uncovered that this prominent idea in political psychology is not as replicable or robust as was assumed. Only by systematically assessing ideas will we come closer to generalizable and robust scientific laws (Chambers, 2017). In this case, systematic replications and extensions have led us to question the initial idea. We hope that the big ideas that this special issue generates will receive the same scrutiny as the negativity bias-ideology link has received. If that is the case, then we think that the future of political psychology as a discipline is bright.

ACKNOWLEDGMENTS

We thank Kevin Smith and John Hibbing for their pioneering research that inspired this project. We thank the editors of this special issue, Ben Ruisch, Leor Zmigrod and Manos Tsakiris for their work in editing this special issue. We thank Johanna Dunaway, Frank Gonzalez, Kevin Smith, Stuart Soroka, members of the Hot Politics Lab as well as participants at the International Communication Association Meeting and Midwest Political Science Association Meeting for their comments on this project. We thank Can Cengiz, Claire Gothreau and Maaïke Homan for their help collecting this data. Author contributions: Study 1 was first conducted in the US and was designed, implemented and conducted by KA and BNB. KA, BNB and GS implemented study 1 in the Netherlands. BNB and GS analysed the data for study 1. Study 2 was designed by KA, BNB and GS. GS implemented study 2 and the data was analysed by GS and BNB. The paper was written by KA, BNB and GS. All authors approved the final manuscript.

FUNDING INFORMATION

Study 1 was funded by the Behavioral Foundations Laboratory at Temple University (Arceneaux) and the European Union's Horizon 2020 research and innovation programme under grant agreement number 750443 (Bakker). This publication is part of the project "Under pressure: How citizens respond to threats and adopt the attitudes and behaviours to counter them" [project number VI.Vidi.211.055 awarded to Bert N. Bakker] of the research programme

NWO Talent Programme VIDU which is financed by the Dutch Research Council (NWO). Gijs Schumacher's research was supported by the European Research Council (ERC) under the European Union's Horizon 2020 Research and innovation programme grant agreement No 759079 (POLEMIC).

DATA AVAILABILITY STATEMENT

All data to reproduce the results belonging to this paper are on the OSF page belonging to this paper: <https://osf.io/2wxtu/>.

ORCID

Kevin Arceneaux  <https://orcid.org/0000-0002-2884-5238>

Bert N. Bakker  <https://orcid.org/0000-0002-6491-5045>

Gijs Schumacher  <https://orcid.org/0000-0002-6503-4514>

REFERENCES

- Aarøe, L., Petersen, M. B., & Arceneaux, K. (2017). The behavioral immune system shapes political intuitions: Why and how individual differences in disgust sensitivity underlie opposition to immigration. *American Political Science Review*, *111*(2), 277–294.
- Arceneaux, K., Bakker, B. N., Fasching, N. J., & Lelkes, Y. (2024). A critical evaluation and research agenda for the study of psychological dispositions and political attitudes. *Advances in Political Psychology*.
- Arceneaux, K., Dunaway, J., & Soroka, S. (2018). Elites are people, too: The effects of threat sensitivity on policy-makers' spending priorities. *PLoS One*, *13*(4), e0193781.
- Bakker, B. N., Schumacher, G., Gothreau, C., & Arceneaux, K. (2020). Conservatives and liberals have similar physiological responses to threats. *Nature Human Behaviour*, *4*(6), 613–621.
- Bakker, B. N., Schumacher, G., & Rooduijn, M. (2021). Hot politics? Affective responses to political rhetoric. *American Political Science Review*, *115*(1), 150–164.
- Bradley, M. M., & Lang, P. J. (1994). Measuring emotion: The self-assessment manikin and the semantic differential. *Journal of Behavior Therapy and Experimental Psychiatry*, *25*(1), 49–59.
- Bradley, M. M., & Lang, P. J. (2000). Measuring emotion: Behavior, feeling, and physiology. In R. Lane & L. Nadel (Eds.), *Cognitive neuroscience of emotion* (pp. 242–276). Oxford University Press.
- Brandt, M. J., & Bakker, B. N. (2022). The complicated but solvable threat–politics relationship. *Trends in Cognitive Sciences*, *26*(5), 368–370.
- Butler, E. A., Gross, J. J., & Barnard, K. (2014). Testing the effects of suppression and reappraisal on emotional concordance using a multivariate multilevel model. *Biological Psychology*, *98*, 6–18.
- Carpenter, T. P., Pogacar, R., Pullig, C., Kouril, M., Aguilar, S., LaBouff, J., Isenberg, N., & Chakroff, A. (2019). Survey-software implicit association tests: A methodological and empirical analysis. *Behavior Research Methods*, *51*(5), 2194–2208.
- Chambers, C. (2017). *The seven deadly sins of psychology: A manifesto for reforming the culture of scientific practice*. Princeton University Press.
- Clifford, S., Erisen, C., Wendell, D., & Cantú, F. (2023). Disgust sensitivity and support for immigration across five nations. *Politics and the Life Sciences*, *42*(1), 65–80.
- Dan-Glauser, E. S., & Scherer, K. R. (2011). The Geneva affective picture database (gaped): A new 730-picture database focusing on valence and normative significance. *Behavior Research Methods*, *43*, 468–477.
- Darwin, C. (1872/1998). *The expression of the emotions in man and animals*. Oxford University Press.
- Evans, J. S. B. T., & Stanovich, K. E. (2013). Dual-process theories of higher cognition: Advancing the debate. *Perspectives on Psychological Science*, *8*(3), 223–241.
- Evers, C., Hopp, H., Gross, J. J., Fischer, A. H., Manstead, A. S. R., & Mauss, I. B. (2014). Emotion response coherence: A dual-process perspective. *Biological Psychology*, *98*, 43–49.
- Fanselow, M. S., & Pennington, Z. T. (2018). A return to the psychiatric dark ages with a two-system framework for fear. *Behaviour Research and Therapy*, *100*, 24–29.
- Fournier, P., Soroka, S., & Nir, L. (2020). Negativity biases and political ideology: A comparative test across 17 countries. *American Political Science Review*, *114*(3), 775–791.
- Friesen, A., Smith, K. B., & Hibbing, J. R. (2017). Physiological arousal and self-reported valence for erotica images correlate with sexual policy preferences. *International Journal of Public Opinion Research*, *29*(3), 449–470.
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, *85*(2), 197–216.
- Hibbing, J. R. (2023). Donald Trump's contribution to the study of politics and the life sciences. *Politics and the Life Sciences*, *42*(2), 169–178.

- Hibbing, J. R., Smith, K. B., & Alford, J. R. (2014). Differences in negativity bias underlie variations in political ideology. *Behavioral and Brain Sciences*, 37(3), 297–307.
- Huddy, L., Mason, L., & Aaroe, L. (2015). Expressive partisanship: Campaign involvement, political emotion, and partisan identity. *American Political Science Review*, 109(1), 1–17.
- James, W. (1884). What is an emotion? *Mind*, 9(34), 188–205.
- James, W. (1894). Discussion: The physical basis of emotion. *Psychological Review*, 1(5), 516–529.
- Johnston, C. D., & Madson, G. J. (2022). Negativity bias, personality and political ideology. *Nature Human Behaviour*, 6(5), 666–676.
- Jost, J. T., Federico, C. M., & Napier, J. L. (2009). Political ideology: Its structure, functions, and elective affinities. *Annual Review of Psychology*, 60, 307–337.
- Jost, J. T., Stern, C., Rule, N. O., & Sterling, J. (2017). The politics of fear: Is there an ideological asymmetry in existential motivation? *Social Cognition*, 35(4), 324–353.
- Knoll, B. R., O'Daniel, T. J., & Cusato, B. (2015). Physiological responses and political behavior: Three reproductions using a novel dataset. *Research & Politics*, 2(4), 2053168015621328.
- Krupnikov, Y., Nam, H. H., & Style, H. (2021). Convenience samples in political science experiments. In J. N. Druckman & D. P. Green (Eds.), *Advances in Experimental Political Science*, 165–83.
- Lakens, D. (2022). Sample size justification. *Collabra: Psychology*, 8(1), 33267.
- Lang, P. J. (1968). Fear reduction and fear behavior: Problems in treating a construct. In J. M. Shlien (Ed.), *Research in psychotherapy* (Vol. 3, pp. 90, 90–102, 102). American Psychological Association.
- Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (1997). *International affective picture system (iaps): Technical manual and affective ratings* (pp. 39–58). NIMH Center for the Study of Emotion and Attention.
- Levenson, R. W. (2003). Autonomic specificity and emotion. In K. Scherer & H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 212–224). Oxford University Press.
- Lin, W., & Green, D. P. (2016). Standard operating procedures: A safety net for pre-analysis plans. *PS: Political Science & Politics*, 49(3), 495–500.
- Ludeke, S., Tagar, M. R., & DeYoung, C. G. (2016). Not as different as we want to be: Attitudinally consistent trait desirability leads to exaggerated associations between personality and sociopolitical attitudes. *Political Psychology*, 37(1), 125–135.
- Malka, A., Lelkes, Y., & Soto, C. J. (2019). Are cultural and economic conservatism positively correlated? A large-scale cross-national test. *British Journal of Political Science*, 49(3), 1045–1069.
- Malka, A., Soto, C. J., Inzlicht, M., & Lelkes, Y. (2014). Do needs for security and certainty predict cultural and economic conservatism? A cross-national analysis. *Journal of Personality and Social Psychology*, 106(6), 1031–1051.
- Mason, L. (2018). Ideologues without issues: The polarizing consequences of ideological identities. *Public Opinion Quarterly*, 82(S1), 280–301.
- Melnikoff, D. E., & Bargh, J. A. (2018). The mythical number two. *Trends in Cognitive Sciences*, 22(4), 280–293.
- Osborne, D., Satherley, N., & Sibley, C. G. (2022). Personality and ideology: A meta-analysis of the reliable, but non-causal, association between openness and conservatism. In A. Mintz & L. G. Terris (Eds.), *The oxford handbook of behavioral political science*. Oxford University Press.
- Osmundsen, M., Hendry, D. J., Laustsen, L., Smith, K. B., & Petersen, M. B. (2022). The psychophysiology of political ideology: replications, reanalyses, and recommendations. *The Journal of Politics*, 84(1), 50–66.
- Oxley, D. R., Smith, K. B., Alford, J. R., Hibbing, M. V., Miller, J. L., Scalora, M., Hatemi, P. K., & Hibbing, J. R. (2008). Political attitudes vary with physiological traits. *Science*, 321(5896), 1667–1670.
- Raftery, A. E. (1995). Bayesian model selection in social research. *Sociological Methodology*, 25, 111–163.
- Ryan, T. J., & Krupnikov, Y. (2021). Split feelings: Understanding implicit and explicit political persuasion. *American Political Science Review*, 115(4), 1424–1441.
- Schaefer, H. S., Larson, C. L., Davidson, R. J., & Coan, J. A. (2014). Brain, body, and cognition: Neural, physiological and self-report correlates of phobic and normative fear. *Biological Psychology*, 98, 59–69.
- Smith, K. B., Oxley, D., Hibbing, M. V., Alford, J. R., & Hibbing, J. R. (2011). Disgust sensitivity and the neurophysiology of left-right political orientations. *PLoS One*, 6(10), e25552.
- Theodoridis, A. G. (2013). Implicit political identity. *PS: Political Science & Politics*, 46(3), 545–549.
- Theodoridis, A. G. (2017). Me, myself, and (i), (d), or (r)? Partisanship and political cognition through the lens of implicit identity. *The Journal of Politics*, 79(4), 1253–1267.
- Tybur, J. M., Inbar, Y., Aarøe, L., Barclay, P., Barlow, F. K., De Barra, M., Becker, D. V., Borovoi, L., Choi, I., Choi, J. A., Consedine, N. S., Conway, A., Conway, J. R., Conway, P., Adoric, V. C., Demirci, D. E., Fernández, A. M., Ferreira, D. C., Ishii, K., ... Žeželj, I. (2016). Parasite stress and pathogen avoidance relate to distinct dimensions of political ideology across 30 nations. *Proceedings of the National Academy of Sciences*, 113(44), 12408–12413.
- Van der Brug, W., & Van Spanje, J. (2009). Immigration, Europe and the “new” cultural dimension. *European Journal of Political Research*, 48(3), 309–334.

Wagner, M. W., Deppe, K. D., Jacobs, C. M., Friesen, A., Smith, K. B., & Hibbing, J. R. (2015). Beyond survey self-reports: Using physiology to tap political orientations. *International Journal of Public Opinion Research*, 27(3), 303–317.

How to cite this article: Arceneaux, K., Bakker, B. N., & Schumacher, G. (2026). Being of one mind: Does alignment in physiological responses and subjective experiences shape political ideology? *Political Psychology*, 47, e13056. <https://doi.org/10.1111/pops.13056>