

The self-control consequences of political ideology

Joshua J. Clarkson^{a,1}, John R. Chambers^b, Edward R. Hirt^c, Ashley S. Otto^a, Frank R. Kardes^a, and Christopher Leone^d

^aMarketing Department, University of Cincinnati, Cincinnati, OH 45221; ^bPsychology Department, Saint Louis University, St. Louis, MO 63103;

^cDepartment of Psychological and Brain Sciences, Indiana University, Bloomington, IN 47405; and ^dPsychology Department, University of North Florida, Jacksonville, FL 32224

Edited by Jonathan W. Schooler, University of California at Santa Barbara, Santa Barbara, CA, and accepted by the Editorial Board May 26, 2015 (received for review February 22, 2015)

Evidence from three studies reveals a critical difference in self-control as a function of political ideology. Specifically, greater endorsement of political conservatism (versus liberalism) was associated with greater attention regulation and task persistence. Moreover, this relationship is shown to stem from varying beliefs in freewill; specifically, the association between political ideology and self-control is mediated by differences in the extent to which belief in freewill is endorsed, is independent of task performance or motivation, and is reversed when freewill is perceived to impede (rather than enhance) self-control. Collectively, these findings offer insight into the self-control consequences of political ideology by detailing conditions under which conservatives and liberals are better suited to engage in self-control and outlining the role of freewill beliefs in determining these conditions.

freewill beliefs | self-control | political ideology | individual differences

Political ideologies loosely represent a shared set of beliefs that define both a specific social order and the means to attain it (1). These ideologies are often categorized into two broad groups—those who endorse traditional values and the status quo (conservatives) and those who endorse egalitarian ideals and progressive change (liberals) (2). Although research demonstrates the various consequences of these distinct ideologies (3), of primary interest to the present research is the unexplored possibility for self-control differences between conservatives and liberals. In particular, we hypothesize that conservatives will demonstrate greater self-control than liberals.

This proposition—although untested—is not without indirect support. Kimmelmeier et al. (4) demonstrate that conservative students earn higher grades in college than liberals (controlling for general intellect). The authors interpret this finding as a function of social dominance, arguing that doing well in these disciplines promotes the existing social hierarchy that conservatives seek to maintain. However, a complementary position is that conservatives more strongly embrace the belief that they are responsible for their actions (i.e., freewill beliefs) (5–8). For instance, it could be that conservatives believe they have greater control over their performance and thus expend greater self-control in their academic pursuits.

The possibility that conservatives and liberals differ in their freewill beliefs would be consistent with the attributional proclivities of conservatives and liberals. Specifically, conservatives tend to attribute causality to internal or dispositional factors (e.g., personal effort and control), whereas liberals tend to attribute causality to external factors (e.g., systemic or sociocultural forces) (9–13). Given that conservatives are more likely than liberals to make internal attributions for their actions, it follows that conservatives should also more strongly endorse the belief in freewill than should liberals. Indeed, believing outcomes are determined by internal factors such as personal effort not only implies but essentially requires the belief that one possesses the freewill to affect change. Consistent with this logic, research demonstrates that freewill beliefs are associated with several constructs indicative of a conservative ideology (i.e., authoritarianism, religiosity, belief in a just world) (14).

This potential discrepancy in freewill beliefs is critical to the proposition that conservatives demonstrate greater self-control than liberals. Recent work, for instance, demonstrates that freewill beliefs are intricately linked to basic motor processes critical to effective self-control (15, 16). Indeed, discouraging a belief in freewill decreases activation in brain regions associated with intentional—and arguably goal-directed—action (i.e., readiness potential) (16). Similarly, the belief in freewill appears critical to individuals' ability to overcome the temptation to engage in self-detrimental and antisocial behavior (6, 17, 18). In fact, hallmark indicators of self-control are the abilities for individuals to regulate their attention and to persist at challenging tasks (19, 20), and the belief that individuals possess the ability to monitor and regulate their vigilance on a given task (e.g., attention regulation, persistence) would seem inherently beneficial to self-control.

Three studies, then, tested the hypotheses that (i) political ideology is associated with individuals' self-control performance and (ii) freewill beliefs are central to these performance differences. Of note, we investigated this framework across a distinct mix of well-documented indices of self-control. Finally, all survey materials and informed consent procedures were approved by the Institutional Review Board at the researchers' home institutions. [A priori power analyses were computed to estimate appropriate sample sizes for each study using standard criteria: power of .8, medium effect sizes, and an alpha level of .05 (21). However, to take into account the specifications of the analyses—a single-item predictor of ideology (22) and multiple covariates (23, 24)—we elected to use more conservative minimum sample size estimates by increasing the power to .95.]

Significance

Surprisingly little is known about the self-control consequences of individuals' political ideologies, given the centrality of political ideology to people's self-identity and the vitality of self-control to human functioning. This research addresses this unexplored gap by offering insight into the processes (freewill beliefs) and factors (the value of freewill for effective self-control) that lead both conservatives and liberals to demonstrate greater self-control. In doing so, these findings provide a platform by which to broaden our understanding of the underlying mechanisms impacting self-control as well as an alternative perspective for interpreting previously documented differences between conservatives and liberals (e.g., intelligence, academic success).

Author contributions: J.J.C., J.R.C., E.R.H., A.S.O., F.R.K., and C.L. designed research; J.J.C. and A.S.O. performed research; J.J.C. and A.S.O. analyzed data; and J.J.C., J.R.C., E.R.H., and A.S.O. wrote the paper.

The authors declare no conflict of interest.

This article is a PNAS Direct Submission. J.W.S. is a guest editor invited by the Editorial Board.

¹To whom correspondence should be addressed. Email: joshua.clarkson@uc.edu.

This article contains supporting information online at www.pnas.org/lookup/suppl/doi:10.1073/pnas.1503530112/-DCSupplemental.

Study 1

Description. One hundred and forty-seven undergraduates completed a modified Stroop task where only incongruent trials were presented, given the attentional demands required to identify words that mismatch (versus match) the background (25). The average response latency across trials served as our index of self-control (26). Participants also reported their political ideology, along with standard demographics (i.e., sex, age, race), which we controlled for in the analysis to isolate the unique influence of ideology on freewill beliefs and self-control performance.

Results/Discussion. Given that the latency scores were highly skewed, we first performed a log transformation on the response latency scores before submitting the values to a simple linear regression, with political ideology as the predictor and demographic variables as covariates. Results revealed an association between political ideology and response latency ($\beta = -0.21$), $t(142) = -2.59$, $P = 0.011$, $R^2 = 0.14$; as political conservatism increased, response latencies on the Stroop task decreased. Importantly, we also assessed the number of correct solutions identified by participants as an index of response accuracy. However, analysis of the response accuracy data revealed no association between political ideology and response accuracy ($P = 0.79$). Political conservatives, then, showed greater self-control than did political liberals—a difference that did not occur at the expense of response accuracy.

Study 2

As noted, we propose these ideological differences in self-control are due to discrepancies in the endorsement of freewill beliefs. We therefore directly tested the possibility not only that conservatives will show greater belief in freewill than liberals but also that this difference in freewill beliefs will mediate this association between political ideology and self-control performance.

Description. One hundred and seventy-six undergraduates completed the Stroop task described in the initial study. Participants then completed the Freewill Subscale of the FAD—Plus (5) before reporting their political ideology along with demographics.

Results. We again performed a log transformation on the response latency scores before submitting the transformed response latencies and freewill beliefs to a simple linear regression (with demographic variables as covariates). The results revealed an association of political ideology with both response latencies ($\beta = -0.20$), $t(171) = -2.62$, $P = 0.009$, $R^2 = 0.071$, and scores on the freewill subscale ($\beta = 0.18$), $t(171) = 2.29$, $P = 0.024$, $R^2 = 0.043$; as political conservatism increased, response latencies decreased and belief in freewill increased. Subsequent bootstrapped mediation tests (27) revealed an indirect path of political ideology on Stroop performance through freewill beliefs [95% CI (-0.099, -0.008)] (see Fig. 1 for full path model). [We also included measures of both task effort (28) and resource conservation (29) at the same time as freewill beliefs to ensure any differences in participants' endorsement of freewill were independent of potential motivational differences. Political ideology was unrelated to either task motivation ($p > .23$) or resource conservation ($p > .11$). That liberals and conservatives were equally motivated to perform the self-control task (and conserve mental resources) suggests that the diverging task performances cannot be explained by motivational differences between liberals and conservatives. Indeed, the path analysis through freewill beliefs remained significant even after controlling for both motivation indices (95% CI [-0.036, -0.003]).]

Discussion. As in the initial study, conservatives showed better self-control performance than liberals; however, here we demonstrate that individuals' freewill beliefs mediated the relationship between political ideology and self-control. Moreover, these effects occurred despite any differences in motivation, suggesting the

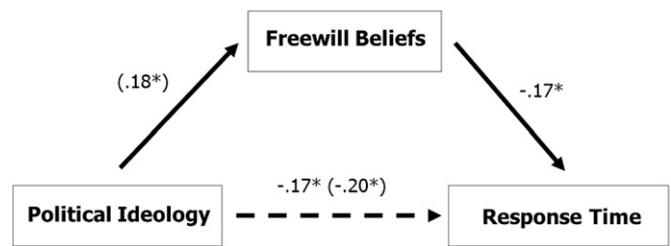


Fig. 1. Path analysis in study 2. Values in parentheses indicate standardized beta coefficients before controlling for other variables in the model. * $P < 0.05$.

ideological differences in self-control performance observed cannot be explained by differences in task motivation or effort (see *Study 2, Results*).

Study 3

The findings of the prior studies provide consistent evidence that conservatives exhibit greater self-control relative to liberals due to their enhanced endorsement of freewill. However, this effect presumes that individuals hold the theory that freewill is beneficial for self-control; if individuals held the theory that freewill is detrimental to self-control, then we would expect liberals rather than conservatives to demonstrate greater self-control performance.

To address this possibility, study 3 directly manipulated participants' theories about the value of freewill for effective self-control (following the procedures used in past research to vary self-control theories) (30–32). Specifically, we told one group that freewill beliefs are associated with feelings of progress and peace of mind, feelings that enhance self-control. The other group was told that freewill beliefs are associated with feelings of frustration and anxiety, feelings that impede self-control. Given that conservatives demonstrate greater belief in freewill than liberals (see *Study 2*), we predicted that conservatives should show greater self-control when told that freewill beliefs facilitate self-control, whereas liberals should show greater self-control when told that freewill beliefs inhibit self-control.

Description. One hundred and thirty-five recruits from Amazon Mechanical Turk were led to believe either the presence or absence of freewill benefits self-control. Specifically, participants read that belief in freewill has consistently been associated with feelings of either progress and peace of mind (which enhances self-control) or frustration and anxiety (which impedes self-control) (for full wording, see *SI Text*). Participants then responded to multiple solution anagrams, with the amount of time participants persisted on the task serving as our index of self-control (29, 33). Finally, participants reported their political ideology along with demographics.

Results. The persistence data were log-transformed and then submitted to a hierarchical regression, with political ideology (continuous, mean-centered) and freewill theory (0, belief in freewill impedes self-control; 1, belief in freewill enhances self-control) as predictors in the first step (along with demographics) and their interaction term in the second step (34). Neither main effect was significant ($t_s < 1$). However, the results revealed a Political Ideology \times Freewill Theory interaction ($\beta = 0.68$), $t(126) = 3.25$, $P = 0.002$, $R^2 = 0.19$ (Fig. 2). Conservatives (+1 SD on the ideology scale) persisted longer when induced to believe that freewill enhances (versus impedes) self-control ($\beta = 0.22$), $t(127) = 1.84$, $P = 0.068$. Liberals (-1 SD on the ideology scale), on the other hand, persisted longer when induced to believe that freewill impedes (versus enhances) self-control ($\beta = -0.32$), $t(127) = -2.70$, $P = 0.008$.

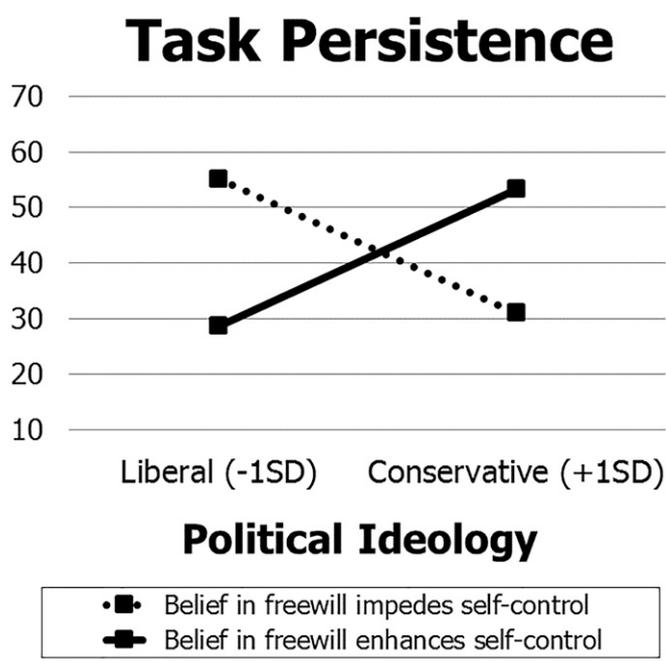


Fig. 2. Persistence on the anagram task as a function of freewill theory and political ideology in study 3. Values reflect untransformed times in seconds and are plotted at ± 1 SD on the political ideology scale.

Discussion. These findings support the importance of individuals' lay beliefs regarding the effects of freewill on self-control performance. In particular, conservatives showed greater self-control when led to believe that freewill benefits self-control, whereas liberals showed greater self-control when led to believe that freewill undermines self-control. Moreover, the lay theory manipulation did not affect individuals' endorsement of freewill (see *SI Text*), a finding that only further supports the claim that the self-control success of conservatives and liberals stems from the value attributed to freewill beliefs for effective self-control. Said differently, these findings are consistent with the documented discrepancy in endorsement of freewill beliefs and demonstrate the importance of these lay beliefs in determining when conservatives and liberals will exhibit greater self-control.

Summary of Findings

Three studies document a clear difference in self-control as a function of political ideology, as political conservatism (versus liberalism) was consistently related to greater self-control. Indeed, this enhanced self-control manifested in the form of attention regulation and task persistence. Moreover, these effects occurred across not only different indices of self-control but also different paradigms and different participant samples (see *Table S1* for demographics by study). Indeed, these effects occurred across different dimensions of ideology (35). That is, we included assessments of both social and economic dimensions of ideology (36) in studies 2 and 3, and analysis of both dimensions mirrored the results for the global ideology measure in those studies (see *Table 1* for intercorrelations).

Importantly, this relationship was shown to stem from differences in freewill beliefs, a finding consistent with work on the attributional proclivities of conservatives and liberals (9). Moreover, this association held when we experimentally induced the theory that freewill is beneficial to self-control and reversed when we experimentally induced the theory that freewill is detrimental to self-control. Thus, freewill beliefs appear central to understanding the association between political ideology and self-control.

Of course, despite addressing potential differences in performance (study 1) and motivation (study 2), other explanations remain possible for the relationship between political ideology and self-control apart from differences in freewill beliefs. Specifically, conscientiousness (37), religiosity (38), and even happiness (9) are associated with conservatism, each of which could contribute in some way to the present findings. As one possibility, positive mood (which could be a by-product of happiness) elicits greater self-control (31), and the association between conservatism and happiness could result in elevated levels of self-control if happiness elevates positive mood. However, despite these other correlates of ideology (and possibly self-control), the present findings offer compelling support for the impact of freewill beliefs in dictating the self-control performance of conservatives and liberals.

Theoretical Contributions

As noted, research has recently linked freewill beliefs to basic motor processes fundamental to self-control (15, 16) as well as to more overt behaviors related to avoiding temptation to engage in self-detrimental and antisocial behavior (6, 17). The present work aligns with this research by offering insight into the impact of freewill beliefs on cognitive processes underlying self-control. Indeed, self-control is traditionally defined as the ability to regulate one's impulses (39), and given the documented differences in attention regulation and persistence, freewill beliefs appear instrumental to impulse regulation.

Additionally, researchers have suggested a possible link between political conservatism and greater belief in freewill (12). Here, we not only offer direct support for this association but also further demonstrate the consequences of this association for self-control. That is, conservatives not only claimed to believe more strongly in freewill than liberals, but this claim manifested in differences in actual exertion of self-control. As such, these findings offer a unique perspective by which to interpret differences between conservatives and liberals.

Practical Implications

Central to the present findings is the extent to which individuals believe they are responsible for their actions. Importantly, however, endorsement of this belief need not enhance self-control (see *Study 3*). That is, the effects of freewill beliefs are critically dependent on peoples' lay theories concerning the value of freewill for effective self-control, theories shown here to be quite malleable. This distinction is important because it offers critical implications for the self-control performance of both conservatives and liberals. For instance, the belief that effective self-control stems from freewill should elicit greater reliance on internal factors (e.g., belief in personal control, achievement motivation) to enhance performance, whereas the belief that effective self-control does not stem from freewill should elicit greater reliance on external factors (e.g., responsiveness to contextual or social cues in one's environment) to enhance performance. Consequently, focusing conservative individuals on the importance of internal factors, and liberal individuals on the importance of contextual or social factors, should increase their ability to achieve their goals (e.g., educational pursuits). Thus, we view this work as a previously

Table 1. Correlations between different dimensions of ideology in studies 2 and 3

Study	Political-social ideology	Political-economic ideology	Social-economic ideology
Study 2	0.78	0.73	0.47
Study 3	0.87	0.82	0.65

All correlations are significant at $P < 0.001$.

unidentified lens to better understand the conditions under which both conservative and liberal individuals can elicit greater self-control.

Concluding Remarks

This research offers insight into the processes (freewill beliefs) and factors (the value of freewill for effective self-control) that lead both conservatives and liberals to demonstrate greater self-control. In

doing so, these findings provide a platform by which to broaden our understanding of the underlying mechanisms impacting self-control as well as an alternative perspective by which to promote greater self-control in individuals as a function of their political ideology.

ACKNOWLEDGMENTS. The authors would like to thank Erin Hennes, Alan Lambert, and Ryan Rahinel for their helpful feedback on prior versions of the manuscript.

- Hunter JD (1992) *Culture Wars: The Struggle to Control the Family, Art, Education, Law, and Politics in America* (Basic Books, New York).
- Jost JT, Glaser J, Kruglanski AW, Sulloway FJ (2003) Political conservatism as motivated social cognition. *Psychol Bull* 129(3):339–375.
- Tetlock PE, Mitchell PG (1993) Liberal and conservative approaches to justice: Confronting psychological portraits. *Psychological Perspectives on Justice, B*, ed Baron MJ (Cambridge Univ Press, New York).
- Kemmelmeier M, Danielson C, Basten J (2005) What's in a grade? Academic success and political orientation. *Pers Soc Psychol Bull* 31(10):1386–1399.
- Paulhus DL, Carey JM (2011) The FAD-Plus: Measuring lay beliefs regarding free will and related constructs. *J Pers Assess* 93(1):96–104.
- Vohs KD, Schooler JW (2008) The value of believing in free will: Encouraging a belief in determinism increases cheating. *Psychol Sci* 19(1):49–54.
- Sappington AA (1990) Recent psychological approaches to the free will versus determinism issue. *Psychol Bull* 108(1):19–29.
- Baumeister RF, Monroe AE (2014) Recent research on free will: Conceptualizations, beliefs, and processes. *Adv Exp Soc Psychol* 50:1–52.
- Schlenker BR, Chambers JR, Le BM (2012) Conservatives are happier than liberals, but why? Political ideology, personality, and life satisfaction. *J Res Pers* 26(2):127–146.
- Carroll JS, Perkowitz WT, Lurigio AJ, Weaver FM (1987) Sentencing goals, causal attributions, ideology, and personality. *J Pers Soc Psychol* 52(1):107–118.
- Feather NT (1984) Protestant ethic, conservatism, and values. *J Pers Soc Psychol* 46(5):1132–1141.
- Mitchell G, Tetlock PE, Mellers BA, Ordóñez LD (1993) Judgments of social justice: Compromises between equality and efficiency. *J Pers Soc Psychol* 65(4):629–639.
- Phares EJ (1976) *Locus of Control in Personality* (General Learning Press, Morristown, NJ).
- Carey JM, Paulhus DL (2013) Worldview implications of believing in free will and/or determinism: Politics, morality, and punitiveness. *J Pers* 81(2):130–141.
- Rigoni D, Kühn S, Gaudino G, Sartori G, Brass M (2012) Reducing self-control by weakening belief in free will. *Conscious Cogn* 21(3):1482–1490.
- Rigoni D, Kühn S, Sartori G, Brass M (2011) Inducing disbelief in free will alters brain correlates of preconscious motor preparation: The brain minds whether we believe in free will or not. *Psychol Sci* 22(5):613–618.
- Baumeister RF, Masicampo EJ, Dewall CN (2009) Prosocial benefits of feeling free: Disbelief in free will increases aggression and reduces helpfulness. *Pers Soc Psychol Bull* 35(2):260–268.
- Baumeister RF (2008) Free will, consciousness, and cultural animals. *Are We Free? Psychology and Free Will*, eds Baer J, Kaufman J, Baumeister RF (Oxford Univ Press, New York), pp 65–85.
- Baumeister RF, Vohs KD, Tice DM (2007) The strength model of self-control. *Curr Dir Psychol Sci* 16(6):351–355.
- Muraven M, Baumeister RF (2000) Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychol Bull* 126(2):247–259.
- Cohen J (1988) *Statistical Power Analysis for the Behavioral Sciences* (Erlbaum, Hillsdale, NJ), 2nd Ed.
- Fuchs C, Diamantopoulos A (2009) Using single-item measures for construct measurement in management research. *Die Betriebswirtschaft* 69(2):195–210.
- Hawkins DM (2004) The problem of overfitting. *J Chem Inf Comput Sci* 44(1):1–12.
- Tosteson TD, Buzas JS, Demidenko E, Karagas M (2003) Power and sample size calculations for generalized regression models with covariate measurement error. *Stat Med* 22(7):1069–1082.
- Inzlicht M, Gutsell JN (2007) Running on empty: Neural signals for self-control failure. *Psychol Sci* 18(11):933–937.
- Inzlicht M, McKay L, Aronson J (2006) Stigma as ego depletion: How being the target of prejudice affects self-control. *Psychol Sci* 17(3):262–269.
- Hayes AF (2013) *Introduction to Mediation, Moderation, and Conditional Process Analysis* (Guilford, New York).
- Muraven M, Slessareva E (2003) Mechanisms of self-control failure: Motivation and limited resources. *Pers Soc Psychol Bull* 29(7):894–906.
- Muraven M, Shmueli D, Burkley E (2006) Conserving self-control strength. *J Pers Soc Psychol* 91(3):524–537.
- Job V, Dweck CS, Walton GM (2010) Ego depletion—Is it all in your head? Implicit theories about willpower affect self-regulation. *Psychol Sci* 21(11):1686–1693.
- Egan PM, Clarkson JJ, Hirt ER (2015) Revisiting the restorative effects of positive mood: An expectancy-based approach to self-control restoration. *J Exp Soc Psychol* 57:87–99.
- Egan PM, Hirt ER (2015) Flipping the switch: Power, social dominance, and expectancies of mental energy change. *Pers Soc Psychol Bull* 41(3):336–350.
- Clarkson JJ, Hirt ER, Jia L, Alexander MB (2010) When perception is more than reality: The effects of perceived versus actual resource depletion on self-regulatory behavior. *J Pers Soc Psychol* 98(1):29–46.
- Cohen J, Cohen P, West SG, Aiken LS (2003) *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences* (Lawrence Erlbaum, Mahwah, NJ), 3rd Ed.
- Feldman S, Johnston C (2014) Understanding the determinants of political ideology: Implications of structural complexity. *Pol Psych* 35(3):337–358.
- Wetherell GA, Brandt MJ, Reyna C (2013) Discrimination across the ideological divide: The role of value violations and abstract values in discrimination by liberals and conservatives. *Soc Psychol Personal Sci* 4(6):658–667.
- Hirsh JB, DeYoung CG, Xiaowen Xu, Peterson JB (2010) Compassionate liberals and polite conservatives: Associations of agreeableness with political ideology and moral values. *Pers Soc Psychol Bull* 36(5):655–664.
- McCullough ME, Willoughby BL (2009) Religion, self-regulation, and self-control: Associations, explanations, and implications. *Psychol Bull* 135(1):69–93.
- Carver CS, Scheier MF (1981) *Attention and Self-Regulation* (Springer-Verlag, New York).
- Oppenheimer DM, Meyvis T, Davidenko N (2009) Instructional manipulation checks: Detecting satisficing to increase statistical power. *J Exp Soc Psychol* 45(4):867–872.
- Knight K (1999) Liberalism and conservatism. *Measures of Political Attitudes*, eds Robinson JP, Shaver PR, Wrightsman LS (Academic Press, San Diego, CA), pp 59–158.

Supporting Information

Clarkson et al. 10.1073/pnas.1503530112

SI Text

Study 1. One hundred and forty-seven undergraduates (four undergraduates were dismissed for failing attention checks) (40), participating for course credit, completed a modified Stroop task. This task exposed participants to a series of color words (e.g., blue) presented on a colored background that mismatched the word (e.g., the word “blue” presented on a yellow background). Only incongruent trials were presented given the attentional demands required to identify words that mismatch (versus match) the background (25). Participants were instructed to press the spacebar when they could identify the word on the screen and were further instructed to respond as quickly and accurately as possible. They were presented with 75 trials, with the average response latency across trials serving as our index of self-control (26). Participants then reported their political ideology on a seven-point scale (1, very liberal; 4, neutral; 7, very conservative) (41). The ideology measure was embedded in the demographic section that also assessed participants’ age, sex, and ethnicity. Upon completing these measures, participants were thanked for their participation and dismissed from the study.

Study 2. One hundred and seventy-six undergraduates (six undergraduates were dismissed for failing attention checks), participating for course credit, completed the modified Stroop task described in study 1. Participants then completed the Freewill Subscale of the FAD—Plus ($\alpha = 0.69$) (5) along with two items ($r = 0.49$) related to task motivation (e.g., “How motivated were you to perform well on the cognitive process task?”) (41) and two items ($r = 0.73$) related to resource conservation (e.g., “How motivated were you to conserve your resources on the cognitive process task?”) (29). Lastly, participants reported their political ideology along with their age, sex, and ethnicity. Upon completing these measures, participants were thanked for their participation and dismissed from the study.

Study 3. One hundred and thirty-five recruits from Amazon Mechanical Turk (13 participants were dismissed for not following instructions) were welcomed to the study, where they were first randomly assigned to our manipulation of freewill theory. This manipulation followed the procedures used in past research to vary self-control theories (30–32). Specifically, participants read the abstract of a manuscript ostensibly published in a

prestigious academic journal. The abstract described the benefits of either the presence or absence of freewill beliefs on self-control. Specifically, all participants were told the following: “Freewill is defined as the belief in one’s responsibility over his/her actions. Not surprisingly, researchers have long been interested in the effects of this belief (i.e., freewill) on self-control.” For those led to believe freewill enhances self-control, the abstract further stated:

Across a series of papers spanning 50 years, the belief in freewill was consistently shown to increase participants’ feelings of progress and peace of mind. These feelings, in turn, enhanced (i.e., improved) self-control. Thus, research consistently demonstrates that the belief in one’s responsibility over his or her actions is incredibly beneficial for self-control.

For those led to believe freewill impedes self-control, the abstract further stated:

Across a series of papers spanning 50 years, the belief in freewill was consistently shown to increase participants’ feelings of frustration and anxiety. These feelings, in turn, undermined (i.e., weakened) self-control. Thus, research consistently demonstrates that the lack of belief in one’s responsibility over his or her actions is incredibly beneficial for self-control.

To ensure the manipulation did not influence individuals’ freewill beliefs, participants completed the Freewill Subscale of the FAD—Plus (5). Analysis of the freewill composite ($\alpha = 0.87$) revealed only a main effect of political ideology in a pattern consistent with our second study [$b = 0.18$ (95% CI, 0.10, 0.25)], $t(127) = 4.49$, $P = 0.001$. Neither the main effect of the manipulation nor the interaction term was significant (all t s < 1).

After the prime manipulation, participants received a pair of multiple solution anagrams presented in random order as our index of self-control. Importantly, participants were told to take as much time as needed. These instructions are based on prior research, and consistent with that research, we focused on the amount of time participants spent on the task as our index of self-control (29, 33).

Lastly, participants reported their political ideology along with their sex, age, race, educational attainment, and personal income. Upon completing these measures, participants were thanked for their participation and received payment.

