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Political orientation and physical health: The role of personal responsibility



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ABSTRACT

Are conservatives healthier than liberals? Aggregate and macro-level evidence have provided support for this possibility, yet individual-level analyses are missing and underlying processes unclear. We study how a person's political orientation might influence her physical health. We propose that a conservative orientation might promote physical health behaviors by promoting personal responsibility—and being personally-responsible means taking care of one's health. Across three studies, we find evidence for this hypothesis, with mediation evidence supporting our proposed personal responsibility account. We test our propositions on overall health (Study 1), greater physical activity engagement (Study 2), and smoking cessation (Study 3). Thus, we provide the first empirical illustration why conservatives may be healthier, offering implications for medical doctors and public health officials in encouraging healthy lifestyles.

1. Introduction

Much evidence exists suggesting that conservatives are on the whole healthier than liberals. For example, geographic areas that are primarily conservative in voting patterns have lower mortality rates, score higher on physical well-being, and have lower smoking rates than those that vote mainly liberal. His pattern of findings is not limited to the United States but can be found in the United Kingdom, Ireland, Japan, Belarus, Russia, Ukraine, and 29 other European nations (Cockerham, Hinote, Cockerham, & Abbott, 2006; Cummins, Stafford, Macintyre, Marmot, & Ellaway, 2005; Dorling, Smith, & Shaw, 2001; Kelleher, Timoney, Friel, & McKeown, 2002; Kondrichin & Lester, 1998; Subramanian, Huijts, & Perkins, 2009; Subramanian & Perkins, 2009; Subramanian, Hamano, Perkins, Koyabu, & Fujisawa, 2010).

Yet despite the macro-level evidence that conservatives are healthier than their liberal counterparts, it is not clear *why* conservatives are healthier. To be sure, some suggestions have been proffered but empirical evidence remains absent. For example, it has been suggested that, since individuals with higher incomes tend to vote conservative, this can give them access to a wider variety of health services and improve their physical health (Espelt et al., 2008; Lundberg, 2010; Smith & Dorling, 1996). It is also possible that conservatives might be healthier since they participate in more religious activities that may promote social capital that is crucial to a healthy lifestyle by reducing stress and fostering more relationships with others (Kawachi, Subramaian, & Kim, 2008; Smith & Christakis, 2008).

We propose that conservatives' greater value on personal responsibility may promote their overall physical health. This possibility, if confirmed, would not only offer an explanation for macro-level evidence for the phenomenon, but may also offer possibilities for researchers, doctors, and policy officials interested in promoting physical health. We will show in Study 3 that it may be possible to prime people to think "conservatively" (Fernandes & Mandel, 2014) and so reduce smoking in a group of smokers, but we recognize that priming effects are likely transient. Still, it offers the possibility that public health communications can embed messages, frames, and positioning that highly the conservative value of personal responsibility in order to increase the likelihood of recipients' uptake of the message. We will discuss such possibilities in our General Discussion. We now introduce the conceptual framework and report the results from three studies that we conducted to test our hypothesizing.

2. Conceptual framework

In the current research, we examine another possibility for why conservatives might be healthier than liberal counterparts. Namely, conservatives value personal responsibility highly (Subramanian & Perkins, 2009), which should also mean a value of personal responsibility in a health context (Buyx, 2008; Minkler, 1999; Steinbrook, 2006). By personal responsibility, we refer to the degree to which individuals see themselves, not external agents, as accountable for *their own* behaviors, which can be in a variety of domains (e.g., cheating;

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¹ Other researchers have used other terms such as "self-accountability" (Passyn & Sujan, 2006), but we opted to use the term *personal responsibility* given that it is more commonly referred to as such in health research (Brownell, 1991; Buyx, 2008; Minkler, 1999; Steinbrook, 2006).

Schlenker, Miller, & Johnson, 2009), including our context of health. Indeed, conservatives believe in the concept of "just world" in that everyone gets what they deserve, that they are responsible for their own life situation, and that acting contrary to expectations is inappropriate (Crandall & Schiffhauer, 1998; Lerner, 1980). Relative to liberals, conservatives tend to subscribe more to Weber's Protestant work ethic that reflects the beliefs that hard work, self-determination, and self-discipline create success, that failure reflects personal weakness, and that unhealthy and indulgent people are lazy, gluttonous, and undisciplined (Furnham, 1984). Further, politically-conservative people tend to attribute greater causality to internal factors than liberals; they are better able at engaging in self-regulation (Clarkson et al., 2015).

This view that individuals are responsible for their own (health) outcomes has existed throughout the Middle Ages and the Renaissance (Reiser, 1985). It is also common today. For example, in response to the growing disillusionment with the limits of medicine and pressure to contain health costs, there is a vision that sees one's own behavior as playing a large role for the health problems that American society faces (Leichter, 1991; Walker, 1994). Many governments also promote personal responsibility to raise physical health outcomes. In West Virginia, to keep medical insurance individuals must keep with their medical appointments, take medications, and follow health improvement plans. The World Health Organization's initiatives to no longer hire people who use tobacco products also indirectly implicates personal responsibility by only hiring those who take the initiative to improve their health and prevent illness.

Integrating the above discussion leads to our formal hypothesis:

H.: Politically-conservative individuals score higher on physical health outcomes than politically-liberal individuals because of their greater emphasis on the value of personal responsibility.

3. The current research

We certainly do not believe that conservatives' personal responsibility is the only explanation for their (possible) greater health. However, we believe that it can play a role. We test this possibility in three studies. Specifically, we sought to assess conservatives' and liberals' physical health on a variety of measures to ascertain if conservatives might only be better on one or across all measures. In Study 1, we sought to determine if self-reported political conservatism would correlate with self-reported physical health and importance of personal responsibility, and if personal responsibility values would explain why conservatives have higher health. In Study 2, we sought to replicate the effects in actual healthy behaviors-not with an overall self-reported measure of physical health but with a choice to engage in physical activity in a realistic context. Finally, to better assess causation, Study 3 will manipulate political conservatism to assess if this would increase politically-conservative smokers' self-reported intentions at quitting their tobacco addiction.

4. Study 1: overall physical health

Here in Study 1, we assessed participants' political orientation, the emphasis that they place on personal responsibility, and their physical health to determine if there is a relationship across these outcomes.

4.1. Methods

We recruited participants from Reddit, which has been validated before as a viable recruitment pool for online experiments (Shatz, 2017). They had a mean age of 29.22 years old (S.D. = 14.12; range from 18 to 49) and there were 89 men, 104 women, and 1 did not disclose their gender. Reddit has been used as a participant pool in social sciences research (Shatz, 2017), and is a viable alternative to Mechanical Turk that is common in personality psychology studies.

This was a voluntary survey; participants did not receive any credit or money in exchange. The study was conducted in September of 2017. We received ethical approval from our university's Institutional Review Board.

First, participants self-reported their political ideology on a 9-point Likert scale that ranged from 1 = "Very Liberal" to 9 = "Very Conservative." Participants indicated their overall physical health from 1 = "Extremely Poor" to 9 = "Extremely Healthy." Single-item measures in health research (De Boer et al., 2004) and other domains (Bergkvist & Rossiter, 2007) have been shown to be as valid as multiple-item scales.

We then measured the emphasis that they placed on personal responsibility with the Personal Responsibility Scale (PRS) of the California Psychological Inventory (CPI; Martel, McKelvie, & Standing, 1987). The PRS consists of 30 target behaviors such as "I pay my bills immediately" and "I put a seat belt on when I enter a car" to which participants responded on 9-point scales from 1 = "Strongly Disagree to 9 = Strongly Agree." Because there were items more appropriate for an adolescent population (such as "I miss classes" and "My family is responsible for me attending university"), we removed them to result in a scale with 24 target behaviors. There are no items specific to perceived responsibility in a health domain. We also note that the PRS measures the perceived importance of the various behaviors and not frequency of engaging in them.

Finally, as part of demographics, participants indicated their age, gender, and ethnicity, which we used as co-variates in our analyses.

4.2. Results

On the PRS, we obtained a Cronbach's alpha of 0.91. The correlations between self-reported political orientation, overall physical health, and PRS are presented in Table 1. The table indicates that all three measures highly- and positively-correlated with one another. The higher the participants' political conservatism, the greater their overall physical health and the greater the emphasis that they place on personal responsibility.

We then entered all measured variables into Model 4 of Hayes' (2013) bootstrapping protocols for SPSS. Political orientation was the independent variable, overall physical health was the dependent variable, and PRS was the presumed mediating variable. Again, age, gender, and ethnicity were all entered as co-variates in this single mediation analysis. The indirect effect was estimated to lie between 0.01 and 0.03, such that the mediation effect was significant. Namely, conservatism increased the emphasis that one placed on the value of personal responsibility that then increases their health. The individual pathways of the mediation analysis are presented in Fig. 1. This and subsequent analyses were conducted with 5000 bootstrapped samples with a 95% confidence interval.

Given Study 1's correlational nature, we were unable to determine causation. But, to provide further credence to the directionality of our effect from political conservatism to greater physical health via personal responsibility, we conducted a reversed mediation analysis, this time with physical health as our presumed mediator and personal responsibility as our main variable of interest. The indirect effect of

Table 1
Study 1: correlational table.

	POL	ОРН	PRS
POL OPH PRS	-	0.18-	0.21** 0.16* -

POL = political orientation (higher scores, greater conservatism) OPH = overall physical health; PRS = Perceived Responsibility Scale.

^{*} p < .05

^{**} p < .01.

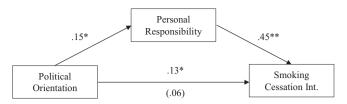


Fig. 1. Study 1: Individual pathways in mediation analysis Path diagram of the mediation model with standardized beta weights. Higher scores on political orientation indicate greater conservatism. Values without parentheses represent the direct effect, while the value inside the parenthesis represents the indirect effect. *p < .05, *p < .01.

political orientation on personal responsibility through physical health was estimated to lie between -0.02 and 0.01, meaning that mediation was not significant. We stress, though, that reversed mediation is also not conclusive (Lemmer & Gollwitzer, 2017), and thus, even though we found no significant effect in our reversed mediation, we cannot rule it out completely.

4.3. Discussion

These results conceptually replicate aggregate findings that politically-conservative individuals tend to report greater physical health compared to their liberal counterparts. We, though, provide evidence for at least one possible mechanism for why it may be. The process evidence that we obtained via moderation suggests that political conservatism might promote physical healthy by increasing the emphasis that one places on personal responsibility, which would presumably extend into a perceived responsibility for one's own health.

However, the question may be exactly how perceived responsibility might increase conservatives' health? Many paths exist toward better physical health. For example, one can choose to engage in greater physical activity. Or, one could commit to practices that promote physical health, such as by committing to quitting smoking among smokers. We test both these possibilities in Study 2 and in Study 3. Confirming that conservatives engage in physical activity more and that they would commit to stop smoking would thus provide converging evidence that the perceived responsibility that conservatives' have for their own health is not simply limited to self-reported health (which could be biased) but to actual healthy behaviors.

5. Study 2: physical activity engagement

In this study, we predicted that political conservatism would increase the choice to engage in physical activity in a realistic setting instead of a self-reported and generic context. Doing so would provide behavioral evidence for our predicted effect. We also used a different measure of personal responsibility. In the PRS in Study 1 (Martel et al., 1987), one concern may be that the items could be reflective not just of personal responsibility values but also reflective of time or financial constraints ("I pay my bills immediately" and "I run out of money") or even ethical values ("If I saw someone steal something, I would report it to the authorities"). Thus, in this Study 2, we assessed personal responsibility with our own-developed scale. Nonetheless, we predicted that political conservatism (that we measured by political party supported in this study) would increase the probability of taking the stairs (vs. the elevator) and that the value of personal responsibility would mediate the effect.

5.1. Methods

We recruited Australian undergraduates who had a mean age of 19.89 years old (S.D. = 1.18; age range from 18 to 25). There were 98 men, 103 women, and 3 did not disclose their gender. We only

recruited students supporting the right-leaning Liberal-National Coalition (n=104; M=20.75 years old, S.D.=1.19; 56 men, 48 women) or the left-leaning party Labors (n=100; M=19.25, S.D.=1.14; 42 men, 55 women, 3 undisclosed/other gender). Students received course credit. The mean age of Coalition or LNC supporters was higher than the average age of Labor supporters, t(202)=9.18, p<.001, d=1.28. The proportion in gender between Labor and LNC supporters was not significantly different, p=.13. We conducted this study in May 2018 in the research lab at the university. We received ethical approval from our university's Institutional Review Board.

Participants completed this study along with unrelated studies. Participants also completed the study individually (as opposed to being with other students). For our particular purposes, we asked them to respond to the following two items that assess the emphasis they place on personal responsibility: "I believe people need to be responsible for themselves" and "Only I am responsible for my own outcomes." The wording was chosen to reflect our earlier construct of personal responsibility. Participants responded on 9-point scales from 1 = "Strongly Disagree" to 9 = "Strongly Agree" for each separate statement. Participants then completed our demographic measures including their age, gender, ethnicity, and political party supported (once again).

At this time, the experimenter presented participants a slip of paper that confirmed participants' attendance for this study. Participants were to take this slip of paper to another experimenter located one floor up to properly record attendance and receive course credit. An elevator was located right next to the behavioral lab but there was also a stairway that could be assessed through a hallway around the corner. Signed were posted along the walls. To induce participants to take the stairs, the experimenter informed them that "hey, if the elevator is taking too long, you can use the stairs just by following the signs." The experimenter recorded whether each participant took the elevator or the stairs. This was our dependent variable. As the stairway could only be assessed by walking a slight distance to the hallway around the corner there was an added effort that could pose a barrier to physical health.

5.2. Results

The two statements to measure personal responsibility correlated positively with one another (r = 0.94, p < .001). Thus, we averaged them to form a single index. We also included age, gender, and ethnicity as controls, as before.

Participants supporting the conservatives were more likely to take the stairs (52.9%) compared to those supporting the liberals (36.3%), $\chi^2=5.73,\ p<.02,\ \text{phi}=0.02.$ The odds ratio that those who supported the conservatives would walk up the stairs to those who supporting the liberals was OR = 1.97 (95% C.I.: 1.12, 3.46), adjusting for age, gender, and ethnicity.

On perceived responsibility, those supporting the conservatives scored higher (M = 7.81, S.D. = 1.12) than those supporting the liberals (M = 7.27, S.D. = 1.31), t(202) = 3.12, p < .01, d = 0.44.

Finally, we conducted a mediation analysis following the steps of a logistic regression mediation (MacKinnon & Dwyer, 1993; see also Herr (date unknown)). We entered political orientation (1 = conservative, 0 = liberal) as the independent variable, probability of taking the stairs (1 = stairs, 0 = elevator) as the dependent variable, and finally, personal responsibility as the presumed mediating variable, again including age, gender, and ethnicity as co-variates. The indirect effect was estimated to lie between 0.01 and 0.07. Thus, conceptually paralleling findings in Study 1, politically-conservative participants were more likely to take the stairs—and this was because of their greater perceived need to be responsible for themselves. Fig. 2 presents the individual pathways in this analysis. We also conducted a reversed mediation analysis in this study. However, the indirect was estimated between -0.05 and 0.13, such that reversed mediation was not significant.

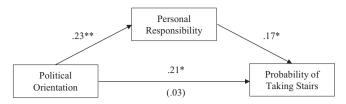


Fig. 2. Study 2: Individual pathways in mediation analysis Path diagram of the mediation model with standardized beta weights. Political orientation was assessed as 1 = conservative, 0 = liberal. Values without parentheses represent the direct effect, while the value inside the parenthesis represents the indirect effect. *p < .05, **p < .01.

5.3. Discussion

The results conceptually replicate Study 1. However, there are important differences between this and the previous study. First, we used a different measure of physical health, this time with a behavioral measure, but we nonetheless found that conservatives are more likely to partake in behaviors that improve their physical health. Second, we used a different measure of political orientation. Instead of a self-reported Likert scale, we compared those who supported the conservative or the liberal parties that were dominant in Australian politics—thus extending the effect beyond America. Third, we used a self-developed scale to assess emphasis on personal responsibility. Yet, findings were consistent: political conservatives value personal responsibility more than liberals, increasing their physical health behaviors.

A concern might be that we simply measured conformity in that conservatives may be more acquiescent or respond in a socially-desirable manner. We thus conducted a mini-study, outlined in our Supplementary Materials, that provides some evidence against such a possibility.

6. Study 3: smoking cessation intentions

The results from Studies 1 and 2 confirm that politically-conservative persons are healthier than their politically-liberal counterparts (Cockerham et al., 2006; Cummins et al., 2005; Dorling et al., 2001; Kelleher et al., 2002; Kondrichin & Lester, 1998; Subramanian et al., 2009; Subramanian & Perkins, 2009; Subramanian et al., 2010). And we shed light on a possible mechanism: personal responsibility. However, in both Studies 1 and 2, we measured political orientation. Though we controlled for age, gender, and ethnicity in our analyses, correlational analyses succumb to interpretational issues. Thus, in our final study, we sought to replicate our effect again, but this time manipulates political conservatism based on a procedure already established in the literature (Fernandes & Mandel, 2014). We predicted that priming political conservatism would increase accessibility of personal responsibility that would then increase smokers' intentions to quit; this was our primary dependent variable. This would allow us to better determine causation that was not possible with the correlational designs of our earlier two studies.

6.1. Methods

We used a screening questionnaire to recruit only participants from an online panel who identified as smokers. If they indicated they were smokers, they continued to our study. If they indicated that they were not smokers, they proceeded onto an unrelated study. Our sample had a mean age of 27.43 years old (S.D.=7.35; age range 18 to 42). There were 144 men, 59 women, and 1 did not disclose their gender. This was a voluntary survey; participants did not receive any credit or money in exchange. This study was conducted in February of 2018. We received ethical approval from our university's Institutional Review Board.

Participants first answered a few questions to measure their

smoking history: "How frequently do you smoke?" (1 = "1 per day," 2 = " < 5 per day," 3 = "about a half-pack per day," <math>4 = "about 1 pack per day," 5 = "about 1.5 packs per day," and <math>6 = "2 packs or more per day") and "At what age did you start smoking?" (open-ended).

They then received a word-scrambling task taken from Fernandes and Mandel (2014; Study 4) to prime political conservatism or liberalism. To prime conservatism, words such as "traditional" and "conventional" were used; to prime liberalism, words such as "free" and "left-wing" were used. Participants were then asked about their intentions to quit smoking using four scales taken from extant research that began with "During the next 3 months...": (a) "I intend to quit smoking;" (b) "I will try to quit smoking;" (c) "I plan to quit smoking;" and (d) "I expect to quit smoking." Responses were made on 9-point scales from 1 = "Very Unlikely" to 9 = "Very Likely." All these statements were from Høie, Moan, and Rise (2010). Behavioral intentions are commonly assessed in the smoking cessation literature (Hughes, Keely, Fagerstrom, & Callas, 2005; Norman, Conner, & Bell, 1999).

Finally, participants completed the personal responsibility measures from Study 2. They also indicated their age, gender, and ethnicity.

6.2. Results

Given that the political conservatism and liberalism primes were randomized, we obtained no differences in smoking frequency or in the age of smoking (Fs < 1, ps > 0.65). The two items to measure personal responsibility correlated positively with one another (r=0.91, p<0.01). Thus, we averaged them to form a single index. The four statements measuring intentions to quit smoking also correlated with each other ($\alpha=0.84$); we averaged these statements to form a single index as well. We included age, gender, and ethnicity as controls, as before.

Participants primed with political conservatism scored higher on intentions to quit smoking (M = 3.52, S.D. = 1.46) compared to those primed with political liberalism (M = 3.01, S.D. = 1.41), F(1, 202) = 6.05, p = .014, d = 0.35. Therefore, priming a conservative orientation increased participants' intentions to quit smoking.

Participants primed with political conservatism scored higher on value of personal responsibility (M = 7.81, S.D. = 1.09) than those primed with political liberalism (M = 7.29, S.D. = 1.32), t (202) = 3.00, p = .003, d = 0.43. Thus, priming a conservative orientation increased the emphasis one placed on personal responsibility.

Finally, we conducted a mediation analysis using Model 4 of Hayes' (2013) bootstrapping protocols. We entered political orientation (1 = conservatism, 0 = liberalism) as the independent variable, smoking cessation intentions as the dependent variable, and personal responsibility as the presumed mediating variable. The indirect effect of political conservatism on smoking cessation intentions via personal responsibility was estimated between 0.01 and 0.10. As such, mediation was significant. Fig. 3 presents the individual pathways in the mediation model. We also conducted a reversed mediation analysis. But the indirect was estimated between -0.02 and 0.02, such that reversed mediation was not significant.

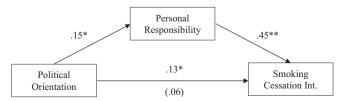


Fig. 3. Study 3: Individual pathways in mediation analysis Path diagram of the mediation model with standardized beta weights. Higher scores on political orientation indicated greater conservatism. Values without parentheses represent the direct effect, while the value inside the parenthesis represents the indirect effect. *p < .05, *p < .01.

6.3. Discussion

In this final study of ours, we once again replicate our posited effect, with one critical differentiation. The previous two studies involved measuring participants' orientation to either the conservatism or liberalism, and thus assessed it "naturally." But this is fraught with issues of interpretation, namely causality. This study addresses this issue using an established method to prime political conservatism or liberalism. The former facilitates value of personal responsibility, thereby increasing people's healthy behaviors. To measure the latter, we recruited smokers and measured their intentions to quit smoking. Specifically, priming political conservatism increased their intentions to quit smoking, compared to priming political liberalism. Also, since intentions to quit is a strong predictor of smoking cessation (Høie et al., 2010; Hughes et al., 2005; Norman et al., 1999), our results may explain why smoking is less common among conservatives than liberals (Subramanian & Perkins, 2009).

7. General discussion

Across two studies, we replicate previous literature that political conservatism is associated with a healthier lifestyle. However, all these findings were at the macro-level and could not demonstrate why it may be (at least psychologically). We show using mediation data that individuals with a politically-conservative orientation are healthier because they likely have an emphasis on the value of personal responsibility that would presumably include responsibility for their own health. The emphasis on this value explains why conservatives are healthier (Study 1), are willing to engage in greater physical activity (Study 2), and, for those who are smokers, (3) have stronger intentions to quit smoking. Thus, different measures converge on our predicted effect and proposed mechanism.

7.1. Contributions of this research

Beyond showing at least one psychological mechanism why conservatives may be healthier than liberals, our research has other theoretical and practical contributions. Firstly, theoretically, although it has been implied by just world beliefs (Crandall & Schiffhauer, 1998; Lerner, 1980), their work ethic (Furnham, 1984), and their internal attributions (Clarkson et al., 2015; Feather, 1984), it has never been empirically illustrated that conservatives value personal responsibility. We are the first to show this, although we stress again that we do not show that conservatives are actually more personally-responsible, despite some evidence for this (Clarkson et al., 2015). Second, our current work also extends an understanding of how people's political orientations might impact their consumption decisions—a notable gap in the existing consumer behavior literature. Health can be considered a consumption phenomenon and therefore can be studied from such a context. It is vital to understand since political orientation and ideology are central to consumers and their sense of self, suggesting that it may exert wide impacts including ones relevant to consumption and marketers. Also, we emphasized health in the current research, but it is likely that political orientation might also a variety of other choices and decisions, such as intertemporal choices, spending, and other outcomes that typically require self-regulation and personal responsibility.

The overweight and obesity crises have taken hold of America and other parts of the world and so it is vital to understand the various antecedents to health and societal well-being (whether psychological, political, or otherwise). Our findings suggest that facilitating the value of personal responsibility may improve one's healthy through intentions to behave in a healthy manner and intentions to reduce harmful behaviors included. It might be possible to prime this value directly (Bryan, Dweck, Ross, Kay, & Mislavsky, 2009). Indeed, our findings suggest that highlighting the concept of personal responsibility may motivate individuals to take this value into consideration at the time of

decision-making, encouraging uptake of the public health promotion messages.

It is also possible to prime political orientation as we showed in Study 3 and as others have shown (Fernandes & Mandel, 2014), which would also facilitate the accessibility of and reliance on the personal responsibility value, thereby improving healthy behaviors and overall health. We recognize that priming effects are transient and some concerns have been raised about their replicability (Klein et al., 2014), but if a conservative political orientation can be primed, it might be a viable way, alternative to priming personal responsibility, to promote healthy actions. For example, following our Study 3 and Fernandes and Mandel (2014), it might be possible that merely using words related to conservatism can trigger a conservative orientation. At the time of decision-making, making such an orientation salient may then cognitivelyevoke the construct of personal responsibility and affect healthy decisions. Thus our work was strictly on a theoretical understanding how political orientation promotes physical health and, at the same time, proposes viable methods to improve individual and societal well-being.

7.2. Limitations and future directions

We stress, though, that we do not have data to rule out other possible explanations. Subramanian and Perkins (2009) suggested that conservative individuals' religiosity and/or corresponding social network may have a positive effect for physical well-being. Given the multifaceted nature of political orientation and values, it is possible there are other accounts equally or even *more* likely. Yet, this possibility would not dilute the importance of the effects here in this research. Similarly, we recruited participants from Western countries, so it would be worthwhile to see if personal responsibility values can explain the conservatism-healthy link in other countries. In any case, we offer a useful basis from which to explore further questions to examine how political orientation affects physical health, and why.

8. Conclusions

In sum, we offer a potential explanation for why conservatives might be more healthy, which has been observed at the macro-level (Cockerham et al., 2006; Cummins et al., 2005; Dorling et al., 2001; Kelleher et al., 2002; Kondrichin & Lester, 1998; Subramanian et al., 2009; Subramanian & Perkins, 2009; Subramanian et al., 2010). We suggest that the conservative value of personal responsibility may explain why, given that personal responsibility is a strong predictor of physical health outcomes (Leichter, 1991; Reiser, 1985; Walker, 1994). We find support for this in three studies. That said, the largely correlational nature of our design makes causation difficult, and there are questions that remain unanswered. We hope, however, that our work is useful be shedding light on a well-established phenomenon, and in doing so offer practical avenues to improve physical health, which has benefits not just for the self but for the community and society as a whole.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.paid.2019.01.005.

References

Bergkvist, L., & Rossiter, J. R. (2007). The predictive validity of multiple-item versus single-item measures of the same constructs. *Journal of Marketing Research*, 44(2), 175–184.

Brownell, K. D. (1991). Personal responsibility and control over our bodies: When expectation exceeds reality. *Health Psychology*, 10(5), 303–310.

Bryan, C. J., Dweck, C. S., Ross, L., Kay, A. C., & Mislavsky, N. O. (2009). Political mindset: Effects of schema priming on liberal-conservative political positions. *Journal* of Experimental Social Psychology, 45(4), 890–895.

- Buyx, A. M. (2008). Personal responsibility for health as a rationing criterion: Why we don't like it and why maybe we should. *Journal of Medical Ethics*, 34(12), 871–874.
- Clarkson, J. J., Chambers, J. R., Hirt, E. R., Otto, A. S., Kardes, F. R., & Leone, C. (2015). The self-control consequences of political ideology. *Proceedings of the National Academy of Sciences*, 112(27), 8250–8253.
- Cockerham, W. C., Hinote, B. P., Cockerham, G. B., & Abbott, P. (2006). Health lifestyles and political ideology in Belarus, Russia, and Ukraine. Social Science & Medicine, 62(7), 1799–1809.
- Crandall, C. S., & Schiffhauer, K. L. (1998). Anti-fat prejudice: Beliefs, values, and American culture. Obesity, 6(6), 458–460.
- Cummins, S., Stafford, M., Macintyre, S., Marmot, M., & Ellaway, A. (2005).
 Neighbourhood environment and its association with self rated health: Evidence from Scotland and England. *Journal of Epidemiology & Community Health*, 59(3), 207–213.
- De Boer, A. G. E. M., Van Lanschot, J. J. B., Stalmeier, P. F. M., Van Sandick, J. W., Hulscher, J. B., De Haes, J. C. J. M., & Sprangers, M. A. G. (2004). Is a single-item visual analogue scale as valid, reliable and responsive as multi-item scales in measuring quality of life? *Quality of Life Research*, 13(2), 311–320.
- Dorling, D., Smith, G. D., & Shaw, M. (2001). Analysis of trends in premature mortality by labour voting in the 1997 general election. *British Medical Journal*, 322(7298), 1336–1337.
- Espelt, A., Borrell, C., Rodriguez-Sanz, M., Muntaner, C., Pasarín, M. I., Benach, J., ... Navarro, V. (2008). Inequalities in health by social class dimensions in European countries of different political traditions. *International Journal of Epidemiology*, 37(5), 1095–1105
- Feather, N. T. (1984). Protestant ethic, conservatism, and values. *Journal of Personality and Social Psychology*, 46(5), 1132–1141.
- Fernandes, D., & Mandel, N. (2014). Political conservatism and variety-seeking. *Journal of Consumer Psychology*, 24(1), 79–86.
- Furnham, A. (1984). The Protestant work ethic: A review of the psychological literature. European Journal of Social Psychology, 14(1), 87–104.
- Hayes, A. F. (2013). An introduction to mediation, moderation, and conditional process analysis. New York: The Guilford Press.
- Herr, N. R.. Mediation with dichotomous outcomes. (2010). Retrieved from http://www.nrhpsych.com/mediation/logmed.html (date unknown).
- Høie, M., Moan, I. S., & Rise, J. (2010). An extended version of the theory of planned behavour: Prediction of intentions to quit smoking using past behaviour as moderator. Addiction Research & Theory, 18(5), 572–585.
- Hughes, J. R., Keely, J. P., Fagerstrom, K. O., & Callas, P. W. (2005). Intentions to quit smoking change over short periods of time. Addictive Behaviors, 30(4), 653–662.
- Kawachi, I., Subramaian, S. V., & Kim, D. (2008). Social capital and health. Springer.
 Kelleher, C., Timoney, A., Friel, S., & McKeown, D. (2002). Indicators of deprivation, voting patterns, and health status at area level in the Republic of Ireland. Journal of Epidemiology & Community Health, 56(1), 36–44.
- Klein, R. A., Ratliff, K. A., Vianello, M., Adams, R. B., Jr., Bahník, Š., Bernstein, M. J., ... Cemalcilar, Z. (2014). Investigating variation in replicability. *Social Psychology*, 45, 142–152.

- Kondrichin, S. V., & Lester, D. (1998). Voting conservative and mortality. Perceptual and Motor Skills, 87(2), 466.
- Leichter, H. M. (1991). Free to be foolist: Politics and health promotion in the United States and Great Britain. Princeton, NJ: Princeton University Press.
- Lemmer, G., & Gollwitzer, M. (2017). The "true" indirect effect won't (always) stand up: When and why reverse mediation testing fails. *Journal of Experimental Social Psychology*, 69, 144–149.
- Lerner, M. J. (1980). The belief in a just world. *The belief in a just world* (pp. 9–30). Boston, MA: Springer.
- Lundberg, O. (2010). Politics and public health—Some conceptual considerations concerning welfare state characteristics and public health outcomes. *International Journal of Epidemiology*, 39(2), 632–634.
- MacKinnon, D. P., & Dwyer, J. H. (1993). Estimating mediated effects in prevention studies. Evaluation Review, 17, 144–158.
- Martel, J., McKelvie, S. J., & Standing, L. (1987). Validity of an intuitive personality scale: Personal responsibility as a predictor of academic achievement. *Educational and Psychological Measurement*, 47(4), 1153–1163.
- Minkler, M. (1999). Personal responsibility for health? A review of the arguments and the evidence at century's end. *Health Education & Behavior*, 26(1), 121–141.
- Norman, P., Conner, M., & Bell, R. (1999). The theory of planned behavior and smoking cessation. Health Psychology, 18(1), 89–94.
- Passyn, K., & Sujan, M. (2006). Self-accountability emotions and fear appeals: Motivating behavior. *Journal of Consumer Research*, 32(4), 583–589.
- Reiser, S. J. (1985). Responsibility for personal health: A historical perspective. *The Journal of Medicine and Philosophy*, 10(1), 7–17.
- Schlenker, B. R., Miller, M. L., & Johnson, R. M. (2009). Moral identity, integrity, and personal responsibility. In D. Narvaez, & D. K. Lapsley (Eds.). Personality, identity, and character: Explorations in moral psychology (pp. 316–340). New York, NY: Cambridge University Press.
- Shatz, I. (2017). Fast, free, and targeted: Reddit as a source for recruiting participants online. Social Science Computer Review, 35(4), 537–549.
- Smith, G. D., & Dorling, D. (1996). "I'm all right, John": Voting patterns and mortality in England and Wales, 1981–92. British Medical Journal, 313(7072), 1573–1577.
- Smith, K. P., & Christakis, N. A. (2008). Social networks and health. Annual Review of Sociology, 34, 405–429.
- Steinbrook, R. (2006). Imposing personal responsibility for health. New England Journal of Medicine, 355(8), 753–756.
- Subramanian, S. V., Hamano, T., Perkins, J. M., Koyabu, A., & Fujisawa, Y. (2010).
 Political ideology and health in Japan: A disaggregated analysis. *Journal of Epidemiology & Community Health*, 64(9), 838–840.
- Subramanian, S. V., Huijts, T., & Perkins, J. M. (2009). Association between political ideology and health in Europe. European Journal of Public Health, 19(5), 455–457.
- Subramanian, S. V., & Perkins, J. M. (2009). Are republicans healthier than democrats? International Journal of Epidemiology, 39(3), 930–931.
- Walker, S. N. (1994). Health promotion and prevention of disease and disability among older adults: Who is responsible? *Generations*, 18, 45–50.