

Learned helplessness moderates the relationship between environmental concern and behavior

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ARTICLE INFO

Article history:

Received 16 June 2017

Received in revised form

2 December 2017

Accepted 5 December 2017

Available online 8 December 2017

Handling Editor: Jeff Joireman

Keywords:

Learned helplessness

Environmental concern

Pro-environmental behavior

ABSTRACT

Many concerned individuals refrain from meaningful pro-environmental actions. We examined whether self-reported levels of trait learned helplessness moderates this concern–behavior relation. Results confirmed that learned helplessness moderated links between environmental concern and both self-reported and in-vivo measures of pro-environmental behavior, such that concern most strongly predicted behavior when learned helplessness scores were low. Results are reliable after controlling for gender as well as depression, anxiety, and stress symptoms. These findings suggest that learned helplessness acts as a barrier to pro-environmental behavior in the face of environmental concern.

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1. Introduction

Environmental concern is ubiquitous (see, e.g., Milfont & Schultz, 2016), but many concerned individuals refrain from pro-environmental actions. Indeed, evidence indicates that concern is only weakly related to pro-environmental behavior (e.g., Bamberg, 2003; Fransson & Gärling, 1999; Hines, Hungerford, & Tomera, 1986; Leiserowitz, 2006; Oskamp, Harrington, Edwards, & Sherwood, 1991; Schultz & Oskamp, 1996; Van der Pligt, 1985). To illustrate, in one study 96% of individuals from over 40 countries expressed environmental concern, yet only 65% of concerned individuals reported a willingness to take pro-environmental action (Inglehart, 1995). Recent research has examined broad cultural factors influencing the strength of this relationship (Eom, Kim, Sherman, & Ishii, 2016; Tam & Chan, *in press*), and highlighted potential disconnects between concern and environmental engagement among socially or economically disadvantaged groups, such as among ethnic minorities (e.g., Pearson, Ballew, Naiman, & Schuldt, 2017). Importantly, some scholars have highlighted that

learned helplessness, whereby one neglects to avoid aversive stimuli even when able to do so, may be more prominent among members of marginalized groups (e.g., Broman, Mavaddat, & Hsu, 2000; Cheung & Snowden, 1990; Rabow, Berkman, & Kessler, 1983; Uomoto, 1986). The present research examined whether self-reported trait learned helplessness moderates the relationship between environmental concern and pro-environmental behavior.

Prior research has explored barriers to environmental action within the context of social learning (e.g., Pelletier, Dion, Tuson, & Green-Demers, 1999). One well-established link within this line of research is between self-efficacy (i.e., one's belief in their ability to succeed in a specific situation or task) and pro-environmental behavior (Geiger, Swim, & Fraser, 2017; Jugert et al., 2016; Lauren, Fielding, Smith, & Louis, 2016; cf. Homburg & Stolberg, 2006). Conversely, environmental amotivation is correlated with beliefs that individuals are incapable of performing effective pro-environmental action, that the energy required is too great, or that specific actions will be ineffective (i.e., low response efficacy) (Gifford, 2011; Pelletier et al., 1999). These beliefs reflect a cognitive appraisal that one is unable to effect meaningful change. At first glance, self-efficacy might be perceived as the opposite of helplessness, but these constructs are conceptually and empirically

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distinct.

Learned helplessness is a condition in which animals learn to behave helplessly (Overmier & Leaf, 1965). Following inescapable aversive stimuli, learned helplessness results in an inhibited behavioral output in novel situations (Hiroto, 1974). Learned helplessness entails cognitive attributions ranging on continua from specific to global, internal to external, and stable to instable, which together enables learned helplessness to generalize from a particular stimuli or situation to novel scenarios (Abramson, Seligman, & Teasdale, 1978; Hiroto & Seligman, 1975), leading to the development of trait characteristics (Quinless & McDermott-Nelson, 1988). Internal attribution reflects belief that the aversive situation is due to the individual rather than to external circumstances. Stable attribution reflects belief that the aversive situation is consistent over time rather than variable. Global attribution reflects belief that the aversive situation is contextually-consistent rather than specific to a particular circumstance (Miller & Seligman, 1975). Whereas self-efficacy relates only to beliefs about capabilities of performing *specific* behaviors in *particular situations* (Streicher, DeVellis, Becker, & Rosenstock, 1986), trait learned helplessness is a domain-free construct indexing a learnt disposition to behave helplessly.

Pro-environmental actions available to most individuals are often viewed as ineffective at creating meaningful environmental benefits—particularly for multifaceted problems such as climate change that requires alteration of government policies and large-scale social and economic reforms (Hamilton, 2010)—potentially relating to feelings of helplessness (Leiserowitz et al., 2014). Extending this domain-specific observation linking helplessness to overwhelming global environmental problems, we examined whether higher levels of trait learned helplessness reduce the strength of the relation between environmental concern and measures of pro-environmental behavior. Models were tested controlling for gender, and re-tested controlling for depression, anxiety, and stress symptoms to exclude the possibility that links between learned helplessness and environmentalism are associated with underlying symptoms of negative emotion and mental distress.

2. Method

2.1. Participants

Participants were 437 undergraduates (244 women) from a Canadian university ($M_{age} = 20.6$, $SD = 4.32$; 81% Caucasian). Participants completed a counter-balanced survey and received \$5 CAD remuneration.

2.2. Measures

Learned helplessness. The Learned Helplessness Scale (LHS; Quinless & McDermott-Nelson, 1988) is a 20-item measure scored using a 4-point Likert-type scale (1 = *Strongly disagree* and 4 = *Strongly agree*). Example items are: “No matter how much energy I put into a task, I feel I have no control over the outcome” and “I do not try new tasks if I have failed similar tasks in the past” ($\alpha = 0.72$).

Environmental concern. Environmental concern is an affective attitude regarding the severity of environmental problems (Fransson & Gärling, 1999; Takács-Sánta, 2007). We assessed it using the question: “To what extent are you concerned about the situation of the environment in general?” scored using a 7-point Likert-type scale (1 = *Not at all* and 7 = *Totally*). This one-item measure has shown consistency across large samples of rural and urban participants (Berenguer, Corraliza, & Martín, 2005). It has good face validity given that it does not conflate concern with

worldviews, behavioral intentions or attitudes, which is a limitation of alternative (longer-form) measures.

Self-report pro-environmental behavior. Participants indicated how often they engaged in 12 pro-environmental behaviors during the past year using a 5-point scale (1 = *never* and 5 = *very often*). A “not applicable” response was also provided “if there was no opportunity for the action” ($\alpha = 0.83$) (Schultz, Oskamp, & Mainieri, 1995).

Geo-engineering support. After reading the definition of geo-engineering as: *The use of large-scale engineering projects designed specifically to combat global climate change*, participants reported their awareness of, and support for, geo-engineering using a 5-point Likert-type scale (1 = *I have not heard of geoengineering/Strongly oppose* and 5 = *I know a great amount about geoengineering/Strongly support*) (Pidgeon et al., 2012).

In-vivo pro-environmental behaviors. At the end of the survey, participants were given the opportunity to either keep their \$5 remuneration or donate it to a well-known environmental organization. Participants were also given the opportunity to join a bogus on-campus environmental activism organization by providing their contact information.

Depression, anxiety, and stress. Participants rated the frequency and severity of experiencing 21 negative emotions over the previous week (Lovibond & Lovibond, 1995) along 4-point scales (0 = *did not apply to me at all* and 3 = *applied to me very much or most of the time*) (depression $\alpha = 0.90$, anxiety $\alpha = 0.81$, stress $\alpha = 0.85$).

3. Results

We examined the relations between environmental concern and pro-environmental behaviors using multiple moderated regressions (Hayes, 2013). The Johnson-Neyman technique (Aiken, West, & Reno, 1991) assessed the ranges within which the moderation was significant. Women reported more pro-environmental behavior ($B = 0.07$, $SE = 0.03$, $p = 0.03$) and donated more than men ($B = 0.09$, $SE = 0.02$, $p < 0.001$), but men were more willing to join the on-campus environmental activism group than women ($B = -0.38$, $SE = 0.12$, $p < 0.002$). We included gender as a covariate in all analyses reported below.

Greater environmental concern was associated with more pro-environmental behavior ($B = 0.20$, $SE = 0.02$, $p < 0.001$) but this association was moderated by learned helplessness ($B = -0.22$, $SE = 0.08$, $p < 0.005$). Environmental concern predicted pro-environmental behavior more-strongly among individuals with lower (-1 SD) scores ($B = 0.26$, $SE = 0.03$, $p < 0.001$) relative to those with higher ($+1$ SD) learned helplessness scores ($B = 0.14$, $SE = 0.03$, $p < 0.001$; $R^2_{adj.} = 0.21$; Fig. 1a). Deconstruction of the interaction showed that the moderation effect was significant for learned helplessness scores below 2.77 (Fig. 1b).

Environmental concern marginally predicted ($B = 0.14$, $SE = 0.08$, $p = 0.08$) donating to an environmental organization and interacted with learned helplessness to predict donation ($B = -0.68$, $SE = 0.28$, $p = 0.015$). Environmental concern predicted donating behavior among individuals with lower (-1 SD) levels of learned helplessness ($B = 0.32$, $SE = 0.11$, $p = 0.005$), but did not predict donating behavior at high ($+1$ SD) levels ($B = -0.05$, $SE = 0.10$, $p = 0.65$; Nagelkerke pseudo $R^2 = 0.08$; Fig. 2a). Deconstruction of the interaction showed that the moderation by learned helplessness was significant for learned helplessness scores below 2.23 (Fig. 2b).

Those who reported greater environmental concern were more likely to indicate interest in joining the on-campus environmental activism group ($B = 1.66$, $SE = 0.69$, $p = 0.016$), but environmental concern interacted with learned helplessness to predict interest in

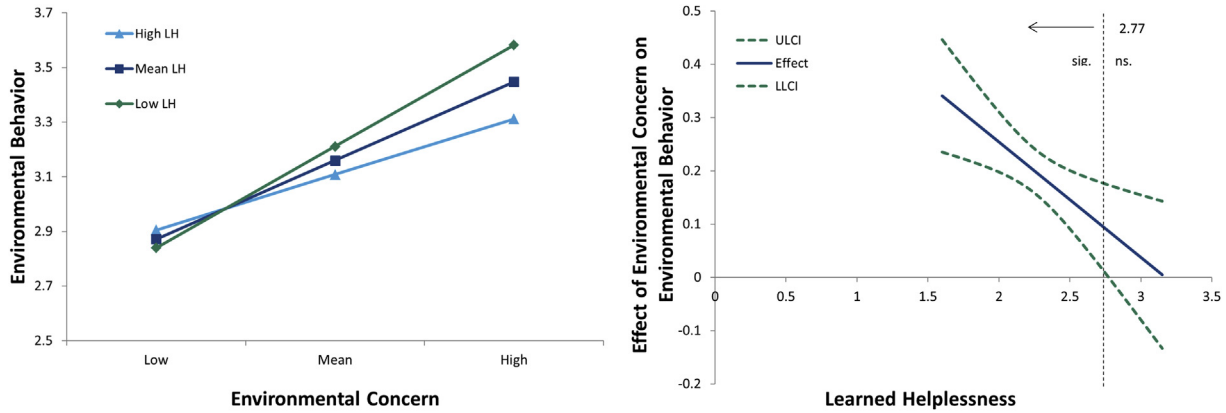


Fig. 1. Standardized (a) conditional moderation effect of Learned Helplessness Scale (LHS) scores on the relationship between environmental concern self-reported pro-environmental behavior and Johnson-Neyman confidence limits (b).

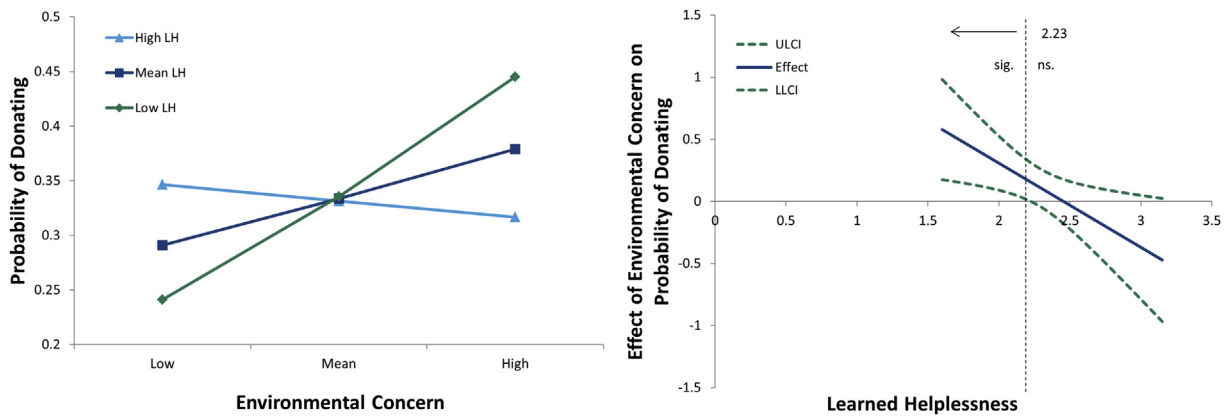


Fig. 2. Standardized (a) conditional moderation effect of Learned Helplessness Scale (LHS) scores on the relationship between environmental concern and donating behavior (log odds probability) and Johnson-Neyman confidence limits (b).

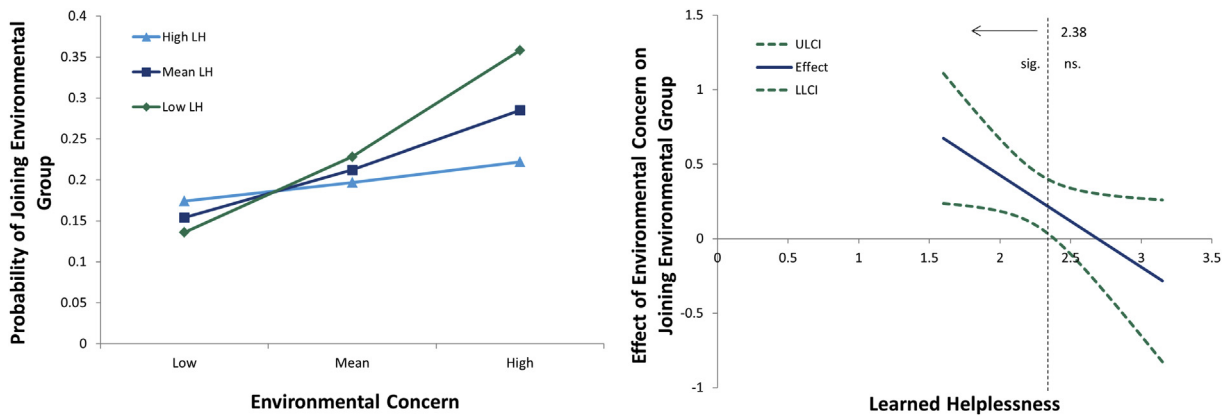


Fig. 3. Standardized (a) conditional moderation effect of Learned Helplessness Scale (LHS) scores on the relationship between environmental concern and joining a campus environmental activism group (log odds probability) and Johnson-Neyman confidence limits (b).

joining the group ($B = -0.62, SE = 0.30, p < 0.04$). Environmental concern predicted interest in joining the group at low ($-1 SD$) levels of learned helplessness ($B = 0.44, SE = 0.13, p < 0.001$), but not at high ($+1 SD$) levels of learned helplessness ($B = 0.10, SE = 0.12, p = 0.38$; Nagelkerke pseudo $R^2 = 0.09$; Fig. 3a). Deconstruction of

the interaction showed that the moderation by learned helplessness was significant for learned helplessness scores below 2.38 (Fig. 3b).

A main effect of environmental concern occurred for geo-engineering support ($B = 0.14, SE = 0.02, p < 0.001$) while

controlling for geo-engineering awareness and gender, such that those who reported greater environmental concern endorsed geo-engineering more strongly. Neither learned helplessness nor its interaction with environmental concern related to support for geo-engineering.¹

4. Discussion

Previous research has underscored the weak relation between diverse measures of environmental concern and pro-environmental behavior (see, e.g., Leiserowitz, 2006). Some have argued that “future research should no longer view environmental concern as a direct, but as an important indirect determinant of specific behavior” (Bamberg, 2003, p. 21). However, little research has explored individual-level moderating variables influencing the strength of the concern–behavior relationship. Recent surveys show that among individuals who are concerned about the environment, the most common associated emotional feeling is one of helplessness (61%; Leiserowitz et al., 2014). Such learned helplessness may be exemplified by the phenomenon described recently as eco-anxiety: “[Some individuals] are deeply affected by feelings of loss, helplessness, and frustration due to their inability to feel like they are making a difference in stopping climate change” (Clayton, Manning, Krygsman, & Speiser, 2017, p. 27). This helplessness may not be inconsequential with respect to environmental action.

Our findings demonstrated that self-reported learned helplessness moderated associations between environmental concern and behavior. Given established links between learned helplessness and fear (e.g., Adolphs, 2013), findings from this study could have implications for fear-based strategies meant to promote environmental action. Future research would benefit from examining whether such tactics might promote learned helplessness, and could explain why some highly fear-inducing appeals are unsuccessful in promoting behavior (e.g., Chen, 2016), whereas other research has supported the efficacy of certain fear appeals (e.g., Hartmann, Apaolaza, D’Souza, Barrutia, & Echebarria, 2014).

The present study used a domain-general measure of learned helplessness, and future research could explore whether a learned helplessness measure directed to environmental issues might yield stronger moderating effects for the concern–behavior relation. However, and given the general nature of the measure used, our findings indicate that promoting environmental action may require a diverse set of strategies beyond those strictly environmental in nature. Likewise, the findings warrant further investigation into societal circumstances that may cultivate feelings of helplessness, and whether helplessness might partially account for links between socioeconomic variables such as poverty, or demographic variables such as belonging to an ethnic minority, and lower environmental engagement. Furthermore, identifying such determinants for heightened levels of learned helplessness may be significant in understanding pro-social engagement in general—notably in populations experiencing socioeconomic instability. Some scholars have highlighted the role of socioeconomic systems in relating to environmental action (e.g., Schmelev, 2012). Given that economic factors may also relate to learned helplessness (Rabow et al., 1983), it would be of interest for future research to

also consider what socioeconomic systems and factors lead to higher levels of learned helplessness in general, in order to better understand how economic factors promote or impede environmental action. Future research might also determine whether related constructs such as self-efficacy and hopefulness have similar moderating influences.

The lack of a relation between learned helplessness and support for geo-engineering was surprising. Learned helplessness is characterized, in part, by an external rather than internal locus of control (Hiroto, 1974). Support for geo-engineering might reasonably be considered as a remediation strategy that exists largely outside of individual action, and thus may not be as susceptible to learned helplessness as more individual effort-based actions. Future research might benefit from examining whether support for geo-engineering strategies are indeed more likely to be supported by those with greater external locus of control for environmental problems.

Notwithstanding the correlational design and self-reported measures used, which precludes causal conclusions about the role of learned helplessness in hindering observed pro-environmental behavior, the present study has begun to elucidate how learned helplessness acts as a barrier between environmental concern and behavior. Future research would benefit from experimentally inducing psychological and hormonal changes in learned helplessness, and subsequently examining in-vivo pro-environmental behavior.

Acknowledgements

This research was supported by a Social Sciences and Humanities Research Council of Canada (# 430-2016-00960) Insight Development Grant awarded to Steven Arnocky, Taciano L. Milfont, and Robert Gifford.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jenvp.2017.12.003>.

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¹ Each model was re-tested by including depression, anxiety, and stress symptoms as covariates together with gender. Results did not vary meaningfully from those reported and none of the DV’s related to depression, anxiety, or stress. For the moderation of donating behavior, inclusion of these covariates revealed an additional range of significance for learned helplessness scores above 3.12, such that the moderator had a negative effect on the relationship between environmental concern and donating behavior.

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