

1-2018

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Angela K. Y. LEUNG

Singapore Management University, angelaleung@smu.edu.sg

Brandon KOH

DOI: <https://doi.org/10.1111/ajsp.12348>

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Citation

LEUNG, Angela K. Y., & KOH, Brandon.(2018). Understanding pro-environmental intentions by integrating insights from social mobility, cosmopolitanism, and social dominance. *Asian Journal of Social Psychology*, .

Available at: https://ink.library.smu.edu.sg/sooss_research/2701

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Understanding pro-environmental intentions by integrating insights from social mobility, cosmopolitanism, and social dominance

Angela K.-y. Leung  and Brandon Koh
Singapore Management University, Singapore City, Singapore

To offer an integrative account bridging individuals' sociocultural orientations with pro-environmentalism, the current research tested the mediating and moderating relationships among pro-environmental intentions and three person-level factors: perceived social mobility, cosmopolitan orientation, and social dominance orientation (SDO). With a Singaporean college student sample ($N = 220$), we found support for the hypothesized second-stage moderation model that perceived social mobility positively predicts cosmopolitan orientation, and in turn, cosmopolitan orientation is moderated by SDO to positively predict pro-environmental intentions. Specifically, lower levels of SDO strengthen the pro-environmental advantages of endorsing higher levels of cosmopolitan orientation. These findings add novel knowledge to the environmental psychology literature by advancing an integrative approach that demonstrates how the interplay of people's perceptions about the social, cultural, and group standing impacts their likelihood to engage in pro-environmental actions. We discuss the implications that an egalitarian worldview toward other cultures, social groups, and human–nature relations might be the key to addressing the global challenge of climate change.

Keywords: climate change, cosmopolitan orientation, egalitarianism, perceived social mobility, pro-environmentalism, social dominance orientation

Climate change is a global challenge, and mitigation efforts need to be mobilized on a global scale. For example, nation-level policies and regulations are put in place to reduce the release of greenhouse gas emissions, develop renewable solar energy and hydropower, support energy-saving transport infrastructure such as electric cars, and retrofit buildings with more sustainable materials and technologies. Yet, recognizing the globalness of climate change mitigation should not obscure individuals' contributions toward pro-environmental initiatives. Extant research has accumulated knowledge about what attributes of individuals could promote pro-environmental behaviors (PEB), such as their demographics (e.g., age, gender, party affiliation; Gifford & Nilsson, 2014; Malkis & Grasmick, 1977), personality disposition (e.g., openness to experience, conscientiousness; Markowitz, Goldberg, Ashton, & Lee, 2012; Milfont & Sibley, 2012), and personal values and beliefs (e.g., postmaterialist values, belief about humans' connection to nature; Inglehart, 1995; Tam, 2013).

Correspondence: Angela K.-y. Leung, School of Social Sciences, Singapore Management University, Level 4, 90 Stamford Road, Singapore 178903, Singapore. E-mail: angelaleung@smu.edu.sg

Received 27 April 2018; revision 4 September 2018; accepted 6 September 2018.

Much of this research has focused on studying the directional relationship between an individual factor or a set of related individual factors (e.g., the Big Five personality traits; Hirsh & Dolderman, 2007; Milfont & Sibley, 2012) and PEB. The current research sets out to offer a more integrative account of PEB-related person-level factors. Specifically, we seek to investigate the mediating and moderating relationships among PEB and three person-level factors that are conceptually distinct and relatively understudied in the prior literature of environmental psychology: perceived social mobility, cosmopolitan orientation, and social dominance orientation (SDO). This theoretical integration bridges different facets of individuals' sociocultural orientations pertaining to the societal structure (social mobility), cultural openness and respect (cosmopolitan orientation), and group-based hierarchy and inequality (SDO). In so doing, we aim to synthesize a novel prediction about how individuals' approach toward the *social*, *cultural*, and *group* standing impacts their intentions to engage in PEB.

Perceived Social Mobility and Cosmopolitan Orientation

Perceived social mobility attests to people's beliefs about the chances of changing their societal position by

moving up and down the socioeconomic ladder. Important to the concept of perceived social mobility is the understanding that through hard work and perseverance, people could earn opportunities to progress upward in the social strata (Chambers, Swan, & Heesacker, 2015). In the current research, we focused on people's perceptions of social mobility because their perceptual judgment could be more pivotal to drive their thoughts and behaviors than could the social and economic reality (e.g., income disparity) that objectively defines a country's social mobility (Eriksson & Simpson, 2012).

We define cosmopolitan orientation based on the three core attributes theorized in Leung, Koh, and Tam's (2015) research. In developing the Cosmopolitan Orientation Scale, Leung et al. (2015) provided a comprehensive understanding of cosmopolitan orientation as a manifestation of *cultural openness*, *global prosociality*, and *respect for cultural diversity*. Cosmopolitans are often open-minded people, or so-called "cultural omnivores," who are receptive to divergent cultural experiences and learning opportunities (cultural openness; Brett & Moran, 2011; Lizardo, 2005; Szeszynski & Urry, 2002). Aspiring toward a sense of universal affiliation with humankind (Bilsky, Janik, & Schwartz, 2011; Pichler, 2009), cosmopolitans tend to advocate a prosocial orientation to protect basic rights and to build a better world for all people (global prosociality; Kant, 1991; Varsamopoulou, 2009; Yeğenoğlu, 2005). Cosmopolitans also see "delight in difference" (Hannerz, 1990), for they presuppose positive attitudes toward preserving authentic cultures and see greater value in respecting cultural differences than gravitating toward cultural uniformity (respect for cultural diversity; Hannerz, 1996).

To our knowledge, no prior research has directly studied the relationship between perceived social mobility and cosmopolitan orientation. However, past findings have revealed a consistent positive link between upward social mobility and openness to experience (Chapman, Fiscella, Kawachi, & Duberstein, 2010), with one reason being that openness contributes to individuals' higher education and cognitive ability and, in turn, promotes their social mobility (Staff, Hogan, & Whalley, 2017). Given that cultural openness was identified as the defining core of cosmopolitan orientation (Cleveland, Laroche, & Papadopoulos, 2009), we argue that higher perceived social mobility will predict a higher cosmopolitan orientation. Furthermore, research has suggested that perceived social mobility reflects people's belief that they have the volition to pursue opportunities and that their hard work can advance their social positioning as afforded by a fair societal system (Bjørnskov, Dreher, Fischer, Schnellenbach, & Gehring, 2013). According to the social identity theory (Tajfel & Turner, 1979), perceptions of the social structures being fair or

legitimate have crucial impacts on people's intergroup attitudes and behaviors. People who perceive society as fair tend to acquiesce with their social status whereas those who perceive society as unfair tend to exhibit more ingroup bias and more hostile views toward the outgroup (Bettencourt, Charlton, Dorr, & Hume, 2001; Ellemers, Wilke, & Van Knippenberg, 1993). These antagonistic intergroup attitudes fostered by lower perceived social mobility correspond to a lower cosmopolitan orientation that extols the values of openness and diversity. Building from these insights, we hypothesize that perceived social mobility is positively associated with cosmopolitan orientation (Hypothesis 1, or H1).

Cosmopolitan Orientation and Pro-Environmentalism: The Moderating Role of Social Dominance Orientation

Whereas globalization has a pivotal (and typically negative) role in climate change (e.g., Donaghy, 2012; Finger, 1994; Najam, Runnalls, & Halle, 2007; Rohrschneider & Dalton, 2002), cosmopolitanism that is often coupled with globalization might potentially offset some of its adverse impacts on the environment (Leung & Koh, 2018; Leung et al., 2015). However, few have systematically studied the pro-environmental benefits of cosmopolitan orientation. In recent research, Leung et al. (2015) showed evidence that cosmopolitan orientation in general, and the facet of global prosociality in particular, has unique predictive power for pro-environmental intentions in multiple samples of Singaporeans, Americans, and Australians (after controlling for their generalized environmental worldviews, motivations, and beliefs). Another study by Der-Karabetian, Cao, and Alfaro (2014) has shown that participants from the United States, China, and Taiwan who endorsed higher feelings of global belongingness, presumably associated with cosmopolitan orientation, exhibited more environmentally sustainable behaviors.

In their theorizing, Leung et al. (2015) advocated that knowledge acquisition about global environmental crises and environmental protection strategies readily prompt cosmopolitans to mitigate environmental degradation (Finger, 1994; Najam et al., 2007; Rohrschneider & Dalton, 2002). Going beyond nationality and country barriers, cosmopolitans' global frame of mind also invigorates a sense of collective moral responsibility for alleviating the worldwide humanitarian concern of deteriorating environmental conditions (Donaghy, 2012). These perspectives might explain why cosmopolitan orientation is positively correlated with pro-environmentalism.

Extending the finding on the positive relationship between cosmopolitan orientation and pro-environmentalism, the current research further explored the interactive

relationship between cosmopolitan orientation and SDO. SDO is a group-based orientation reflecting people's degree of attitudinal support that groups occupy different levels of a hierarchy and thus are not equal to each other (Pratto, Sidanius, Stallworth, & Malle, 1994). Existing research has lent support for a robust negative association between SDO and pro-environmentalism in both Western and non-Western countries (Milfont et al., 2017; Milfont et al., 2013; Pratto et al., 1994). This is based on the contention that beliefs about legitimizing group hierarchy and inequality in the social sphere extend to beliefs about legitimizing human dominance over the environment in the natural sphere (Milfont et al., 2017).

Specifically, social dominance theory states that people's social dominance beliefs are shaped prominently by two types of legitimizing myths: hierarchy-enhancing legitimizing myths and hierarchy-attenuating legitimizing myths. Whereas hierarchy-enhancing legitimizing myths morally and intellectually justify group-based inequality and dominance, hierarchy-attenuating legitimizing myths support inclusive and egalitarian ideologies such as universal human rights and social democracy (Pratto, Sidanius, & Levin, 2006). Interestingly, the theory posits that the dominating and subordinating groups tend to show consensus with respect to which legitimizing myths are more predominant in the society (Sidanius & Pratto, 1999). Depending on the consensual ideology across groups, either the hierarchy-enhancing or the hierarchy-attenuating myths will become more potent to affect individuals' decisions, behaviors, and social practices.

We posit that a cosmopolitan orientation aligns with the pervading belief in nondominance among cultural groups, thus it might coincide with the hierarchy-attenuating legitimizing myths associated with people's social dominance beliefs. In fact, one of the items in the "respect for cultural diversity" facet of the scale measuring cosmopolitan orientation is "I am against having one dominating culture" (Leung et al., 2015). Cosmopolitan individuals are likely to accept equal footing between cultures, tolerate cultural differences, and uphold that all fellow human beings, regardless of nationalities, are entitled to basic rights and justice. As discussed, we learned from existing research that these nondominating values associated with a cosmopolitan orientation pose benefits to mitigating environmental problems. The research question we want to ask is whether the group-based nondominance belief would reinforce the culture-based nondominance belief to bring about more pro-environmental benefits. We hypothesize that SDO moderates the relationship between cosmopolitan orientation and pro-environmental intentions, such that when SDO is low (high), the positive association between cosmopolitan orientation and pro-environmental intentions will be stronger (weaker; Hypothesis 2, or H2).

Integrating H1 and H2, we further hypothesize that SDO moderates the relationship between perceived social mobility and pro-environmental intentions as mediated via cosmopolitan orientation (Hypothesis 3, or H3). As such, for individuals with a low (high) SDO, perceived social mobility will promote a cosmopolitan orientation, which in turn leads to a stronger (weaker) positive relationship with pro-environmental intentions. Specifically, we fit the data to a direct effect and second-stage moderation model (Figure 1; see Edwards & Lambert, 2007) because it allows us to test the hypothesized moderation between cosmopolitan orientation and SDO on pro-environmental intentions and to simultaneously examine a potential moderation between perceived social mobility and SDO on pro-environmental intentions. We conducted a survey study to test the hypothesized model in a Singaporean sample.

Methods

Participants and Procedures

As part of a larger study, 225 participants volunteered in exchange for course credits. Data from 5 participants were excluded from further analyses because they answered less than half of the items on either of the two pro-environmental intentions measures (final $N = 220$, 30% male, $M_{\text{age}} = 22.40$, $SD_{\text{age}} = 1.53$; 190 Singaporeans, 10 Chinese, 8 Malaysians, 8 other Asian nationalities, 2 Europeans, and 2 Americans).

Measures

Perceived social mobility. A four-item measure was adapted (Bjørnskov et al., 2013) to measure participants' perceived social mobility, the perception that the societal system permits individuals to move up the social class strata through hard work. Analyses revealed that internal consistency indicated by α increased from $-.32$ to $.64$ after removing two unreliable items. The final two items are "In the long run, hard work usually brings success,"

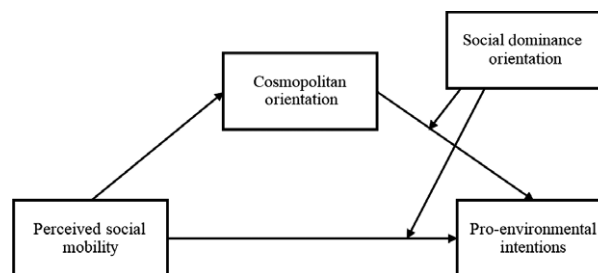


Figure 1 Conceptual diagram of the hypothesized direct effect and second-stage moderation model.

and “People have a chance to escape poverty” answered on a Likert scale of 1 (*Strongly disagree*) to 7 (*Strongly agree*).

Cosmopolitan orientation. A validated 15-item scale was administered to measure three essential dimensions of cosmopolitan orientation (Leung et al., 2015). The *cultural openness* dimension indicates receptiveness to immerse in and learn from other cultures (five items; e.g., “I enjoy learning more about different cultures in the world”). The *global prosociality* dimension denotes a sense of collective moral obligation to universally respect and promote basic human rights (five items; e.g., “I would serve the community by helping human beings”). The *respect for cultural diversity* dimension concerns high tolerance of and appreciation for cultural differences (five items; e.g., “I embrace cultural diversity”). All items were answered on a scale of 1 (*Strongly disagree*) to 7 (*Strongly agree*). As we did not have a priori hypothesis for the different dimensions, we analyzed the global factor of cosmopolitanism orientation by aggregating the mean across the three factors, $\alpha = .93$. Descriptive statistics for each dimension of cosmopolitan orientation are given in Table 1.

Social dominance orientation. The SDO₇ (Ho et al., 2015) is an eight-item scale measuring individuals’ endorsement of group-based hierarchy and inequality. SDO is reflected in two factors: *SDO-Dominance*, the endorsement of higher status groups forcefully oppressing lower status groups (e.g., “An ideal society requires some groups to be on top and others to be on the bottom”), and *SDO-Egalitarianism*, a preference for ideologies and social policies that subtly enhance group-based inequality (e.g., “It is unjust to try to make groups equal;” also see Jost & Thompson, 2000; Stanley, Wilson, Sibley, & Milfont, 2017). Responses were rated on a scale of 1 (*Strongly disagree*) to 7 (*Strongly agree*). The mean of all eight items was computed for an overall index of SDO, $\alpha = .75$. Descriptive statistics for the overall SDO, the SDO-Dominance subscale, and the SDO-Egalitarianism subscale are presented in Table 1.

Pro-environmental intentions. We adapted measures of pro-environmental intentions from past research (Milfont et al., 2017; Stern, Dietz, Abel, Guagnano, & Kalof, 1999). The first 12-item measure captures pro-environmental citizenship intentions through assessing participants’ intent to participate in social movements to protect the environment (e.g., “Sign a petition in support of protecting the environment.” “Join or renew membership of an environmental group.”), $\alpha = .92$. The second 12-item measure captures participants’ intent to engage in private sphere PEB (e.g., “Buy environmentally

Table 1
Descriptive Statistics, Cronbach’s α s, and Correlations Across Key Measures

No.	Variable	M	SD	α	1	2	3	4	5	6	7	8	9	10
1	Perceived social mobility	5.09	1.09	.64										
2	Cosmopolitan orientation	5.77	0.78	.93	.26***									
3	Cultural openness	5.89	0.87	.88	.28***	.87***								
4	Global prosociality	5.63	0.95	.89	.20***	.89***	.61***							
5	Respect for cultural diversity	5.80	0.79	.81	.23***	.91***	.71***	.75***						
6	SDO	3.17	0.82	.75	.01	-.46***	-.33***	-.43***	-.48***					
7	SDO Dominance subscale	3.31	0.94	.53	.02	-.38***	-.27***	-.34***	-.41***	.92***				
8	SDO Egalitarianism subscale	3.02	0.85	.65	-.01	-.46***	-.32***	-.45***	-.46***	.90***	.65***			
9	Pro-environmental citizenship intentions	2.53	0.89	.92	.07	.31***	.21**	.36***	.26***	-.18**	-.12	-.22**		
10	Pro-environmental private sphere behavioral intentions	3.58	0.78	.89	.11	.35***	.24***	.40***	.28***	-.17**	-.08	-.24***	.61***	
11	Pro-environmental intentions	3.07	0.75	.93	.10	.37***	.26***	.42***	.30***	-.20**	-.12	-.25***	.91***	.88***

Note. SDO = social dominance orientation.
** $p < .01$. *** $p < .001$.

friendly products,” “Minimize use of air-conditioning or heating”), $\alpha = .89$. Responses were rated on a scale of 1 (*not at all likely*) to 5 (*very likely*), NA (*not applicable*). As pro-environmental citizenship and private sphere behavioral intentions are correlated highly, $r = .61$, $p < .001$, an overall index of pro-environmental intentions was obtained by averaging the mean of the 24 items after excluding the NA responses, $\alpha = .93$. We also analyzed separately for pro-environmental citizenship and private sphere behavioral intentions (see Tables 2 & 3).

Results

The descriptive statistics, Cronbach’s α s, and correlations across measures are tabulated in Table 1. The hypothesized direct effect and second-stage moderation model (see Figure 1) was tested using the SPSS PROCESS macro (Model 15; Preacher & Hayes, 2004). All predictors were mean-centered. As hypothesized, in the first path, participants who perceived higher social mobility were more likely to adopt a cosmopolitan orientation, $B = .19$, $SE = .05$, $p < .001$. In the second path, cosmopolitan orientation positively predicted participants’ pro-environmental intentions, $B = .36$, $SE = .07$, $p < .001$, which was qualified by an interaction with SDO, $B = -.16$, $SE = .07$, $p = .027$ (see Figure 2). The direct path of social mobility moderated by SDO

predicting pro-environmental intentions was not significant, $B = .09$, $SE = .05$, $p = .096$. The main effects of social mobility and SDO on pro-environmental intentions also were not significant (for full results, see Table 2). We further tested the model controlling for gender, age, and perceived socioeconomic status (see Table 3); the results remained the same.

Although the SDO main effect did not emerge, note that the zero-order correlations between SDO and pro-environmental intentions, $r = -.18$ and $-.17$, $p < .01$, for citizenship and private behavioral intentions, respectively, are largely consistent with the correlations reported in a recent research by Milfont et al. (2017) across 25 countries with student samples (Average random-effects mean weighted correlations for citizenship intentions and private behavioral intentions were $[-.27, -.14]$ and $[-.27, -.17]$, respectively.) Thus, the current findings lent support for the negative association between SDO and pro-environmentalism that has been found in prior research.

Bootstrapped standard errors (SE s) and confidence intervals (CI s) were obtained with 5,000 sampling iterations to evaluate the indirect effects. The hypothesized model is significant, indicated by the index of moderated mediation 95% CI_{Boot} $[-0.07, -0.01]$ not bounding zero. The indirect mediating effect of perceived social mobility on pro-environmental intentions via cosmopolitanism orientation is stronger at lower ($-1 SD$) levels of

Table 2
Regression Analyses for the Hypothesized Direct Effect and Second-Stage Moderation Model

	Model 1	Model 2	Model 3	Model 4
Outcome	Cosmopolitan Orientation	Pro-environmental Intentions	Pro-environmental Citizenship Intentions	Pro-environmental Private Behavioral Intentions
Predictors				
Constant	0.00 (0.05)	3.02*** (0.05)	2.48*** (0.06)	3.54*** (0.05)
SM	0.19*** (0.05)	0.01 (0.05)	0.01 (0.06)	0.02 (0.05)
SM \times SDO		0.09 (0.05)	0.14* (0.07)	0.05 (0.06)
CO		0.36*** (0.07)	0.35*** (0.09)	0.35*** (0.08)
SDO		-0.02 (0.07)	-0.04 (0.08)	0.00 (0.07)
CO \times SDO		-0.16* (0.07)	-0.19* (0.09)	-0.14 [†] (0.08)
R^2	.07	.16	.13	.14
F	16.08***	8.43***	6.55**	6.78***
Conditional indirect effect mediated through CO at				
Low SDO		0.09 (0.03) [0.04, 0.17]	0.09 (0.04) [0.04, 0.18]	0.09 (0.03) [0.04, 0.17]
Mean SDO		0.07 (0.02) [0.03, 0.12]	0.07 (0.02) [0.03, 0.12]	0.07 (0.03) [0.03, 0.13]
High SDO		0.04 (0.02) [0.01, 0.10]	0.04 (0.02) [-0.005, 0.09]	0.04 (0.02) [0.01, 0.10]
Index of moderated mediation		-0.03 (0.02) [-0.07, -0.01]	-0.04 (0.02) [-0.09, -0.01]	-0.03 (0.02) [-0.06, -0.001]

Notes. Unstandardized regression coefficients are reported with SE s in parentheses and 95% CI s in square brackets. All predictors were mean-centered in this analysis. All indirect effect SE s and 95% CI s were computed with 5,000 bootstrapped sampling iterations. SM = perceived social mobility; SDO = social dominance orientation; CO = cosmopolitan orientation.

[†] $p = .07$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3
Regression Analyses for the Hypothesized Direct Effect and Second-Stage Moderation Model Controlling for Gender, Age, and Perceived Socioeconomic Status^a

Outcome	Model 2b Pro-environmental intentions	Model 3b Pro-environmental citizenship intentions	Model 4b Pro-environmental private behavioral intentions
Predictors			
Constant	0.42 (1.85)	0.20 (2.23)	0.72 (1.94)
SM	-0.30 (0.17)	-0.46** (0.21)	-0.16 (0.18)
SM × SDO	0.10 (0.05)	0.15** (0.07)	0.06 (0.06)
CO	0.87*** (0.25)	0.96** (0.30)	0.79** (0.27)
SDO	0.42 (0.47)	0.33 (0.57)	0.52 (0.5)
CO × SDO	-0.16** (0.07)	-0.19** (0.09)	-0.14 [†] (0.08)
Gender	-0.06 (0.12)	-0.04 (0.15)	-0.06 (0.13)
Age	-0.03 (0.04)	-0.03 (0.04)	-0.04 (0.04)
Perceived SES	-0.01 (0.03)	-0.01 (0.04)	0.00 (0.04)
R ²	.17	.14	.15
F	5.54***	4.20***	4.55***
Conditional indirect effect mediated through CO at			
Low SDO	0.09 (0.03) [0.04, 0.17]	0.09 (0.04) [0.04, 0.18]	0.09 (0.03) [0.03, 0.17]
Mean SDO	0.07 (0.02) [0.03, 0.12]	0.06 (0.03) [0.02, 0.13]	0.06 (0.03) [0.02, 0.12]
High SDO	0.04 (0.02) [0.01, 0.09]	0.03 (0.02) [-0.01, 0.09]	0.04 (0.02) [0.01, 0.10]
Index of moderated mediation	-0.03 (0.02) [-0.07, -0.005]	-0.04 (0.02) [-0.09, -0.01]	-0.03 (0.02) [-0.07, -0.001]

Notes. Unstandardized regression coefficients are reported with SEs in parentheses and 95% CIs in square brackets. All predictors were mean-centered in this analysis. All indirect effect SEs and 95% CIs were computed with 5,000 bootstrapped sampling iterations. SES = socioeconomic status; SM = perceived social mobility; SDO = social dominance orientation; CO = cosmopolitan orientation.

^aN = 220.

[†]p = .07. *p < .05. **p < .01. ***p < .001.

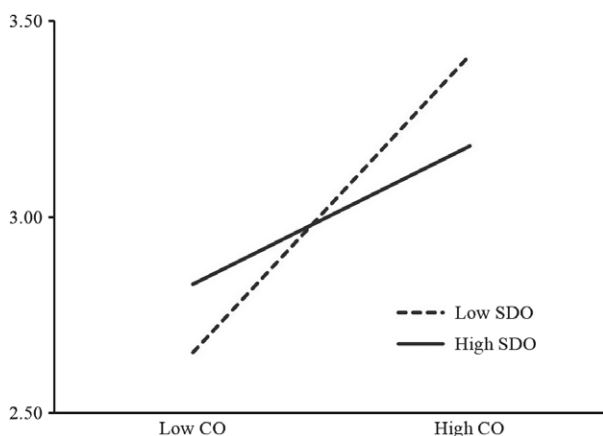


Figure 2 Pro-environmental intentions predicted by cosmopolitan orientation (CO) and social dominance orientation (SDO) as the second-stage moderator.

SDO, $B = .09$, $SE = .03$, 95% CI_{Boot} [0.04, 0.17], than at higher (+1 SD) levels of SDO, $B = .04$, $SE = .02$, 95% CI_{Boot} [0.01, 0.10]. To further probe these results, analyses revealed a similar pattern for both pro-environmental citizenship and pro-environmental private sphere

behavioral intentions (see Tables 2 & 3). Higher cosmopolitan orientation consistently predicted higher intentions for pro-environmental citizenship and private behaviors, and this relationship was stronger under lower (vs. higher) levels of SDO. However, in the case of private sphere pro-environmental behavioral intentions, the second-stage moderation by SDO was only marginally significant, $B = -.14$, $SE = .08$, $p = .073$; index of moderated mediation 95% CI_{Boot} [-0.06, -0.001].

To rule out the alternative first-stage moderation model, we tested whether SDO would moderate the mediation at the first path instead. The interaction between SDO and social mobility on cosmopolitan orientation was not significant, $B = .08$, $SE = .05$, $p = .12$. The index of moderated mediation 95% CI_{Boot} [-0.005, 0.08] also bounds zero, providing evidence that the first-stage moderation model does not fit the data. We also tested another alternative model with cosmopolitan orientation predicting pro-environmental intentions mediated through perceived social mobility.¹ The simple mediation model was not significant, 95% CI_{Boot} [-0.04, 0.04]. Perceived social mobility did not predict pro-environmental intentions, $B = .00$, $SE = .05$, $p = .998$,

Table 4

Regression Analyses Testing the Indirect Effect of Social Dominance Orientation on Pro-Environmental Intentions as Mediated Through Perceived Social Mobility and Cosmopolitan Orientation (for Footnote 1)^a

Outcome	Model 1 Perceived social mobility	Model 2 Cosmopolitan orientation	Model 3 Pro-environmental intentions	Model 4 Pro-environmental citizenship intentions	Model 5 Pro-environmental private behavioral intentions
Predictors					
Constant	5.06*** (0.30)	6.20*** (0.27)	1.18** (0.54)	0.79 (0.65)	1.62** (0.56)
SDO	0.01 (0.09)	0.19*** (0.04)	-0.04 (0.07)	-0.06 (0.08)	-0.02 (0.07)
SM		-0.44*** (0.05)	0.00 (0.05)	0.00 (0.06)	0.02 (0.05)
CO			0.34*** (0.07)	0.34*** (0.09)	0.34*** (0.08)
R ²	.00	.16	.14	.10	.12
F	0.02	8.43***	11.64***	8.05***	10.07***
Indirect effect			0.00 (0.01) [-0.01, 0.01]	0.00 (0.01) [-0.01, 0.01]	0.00 (0.01) [-0.01, 0.01]

Notes. Unstandardized regression coefficients are reported with SEs in parentheses and 95% CIs in square brackets. All indirect effect SEs and 95% CIs were computed with 5,000 bootstrapped sampling iterations.

SM = perceived social mobility; SDO = social dominance orientation; CO = cosmopolitan orientation.

^aN = 220.

** $p < .01$. *** $p < .001$.

when cosmopolitan orientation, $B = .36$, $SE = .06$, $p < .001$, was controlled for. In addition, this indirect effect was not moderated by SDO in both the first-stage, 95% CI_{Boot} [-0.01, 0.01], and the second-stage, 95% CI_{Boot} [-0.01, 0.09], moderation model, as bootstrapped indices of moderated mediation CIs bound zero.

Overall, the results support an indirect effect of perceived social mobility on promoting intentions for pro-environmental citizenship and private sphere behaviors mediated via an increased cosmopolitan orientation. Furthermore, this mediated effect was stronger at lower levels of SDO than at higher levels of SDO, particularly for pro-environmental citizenship intentions.

Discussion

Findings confirmed the second-stage moderation model that cosmopolitan orientation mediates the relationship between perceived social mobility and pro-environmental intentions, with SDO moderating the positive link between cosmopolitan orientation and pro-environmental intentions. As predicted, perceived social mobility positively predicts cosmopolitan orientation. Furthermore, the benefits of cosmopolitan orientation in promoting pro-environmental intentions are strengthened if individuals display lower (vs. higher) levels of SDO. In other words, low SDO reinforces the pro-environmental advantages of endorsing a cosmopolitan orientation.

The current results provide the first direct evidence supporting a positive relationship between perceived social mobility and cosmopolitan orientation. Although our data

could not speak to the causal explanatory mechanisms underlying this positive relationship, prior evidence has shown that higher perceived social mobility is correlated with higher openness and societal fairness that could mitigate intergroup friction and promote tolerance for diversity. This might account for why perception of a greater likelihood of moving up the socioeconomic ladder enhances people's cosmopolitan outlook. However, note that cosmopolitan orientation is a multifaceted concept, so perceived social mobility is likely just one of the many factors that promote cosmopolitan qualities. Future research could investigate the psychological mechanisms of how perceived social mobility contributes to a cosmopolitan identity. In addition, perceived social mobility was measured with two items after two unreliable items were removed. Although the scale's internal consistency is acceptable, $\alpha = .64$, after such removal, future research should consider assessing perceived social mobility with a longer and more reliable scale.

Of both theoretical and practical interest, our findings confirm that an open and respectful stance toward diverse cultures (i.e., high cosmopolitan orientation) is modulated by a nondominating view about social groups (i.e., low SDO) to bring about pro-environmental benefits, presumably because an egalitarian sociocultural structure is extended to an egalitarian human-nature relationship that alleviates humans' desires to dominate and exploit the natural environment (Milfont & Sibley, 2014). These promising results form the basis to motivate future research to provide a more nuanced understanding on the interplay between people's pro-

environmental attitudes and their egalitarian worldview toward cultural and social groups.

As discussed earlier, social dominance theory argues for two types of functional legitimizing myths: the hierarchy-enhancing and hierarchy-attenuating legitimizing myths (Pratto et al., 2006). We contend that the present moderation results between cosmopolitan orientation and SDO could be driven by the hierarchy-enhancing legitimizing myths. Whereas cosmopolitan orientation aligns with the hierarchy-attenuating legitimizing myths given the prevailing belief in nondominance between cultural groups, SDO is related to both the hierarchy-enhancing and hierarchy-attenuating legitimizing myths. When we examine the interaction between cosmopolitan orientation and SDO, regression would partial out the covaried overlaps between the two variables; that is, the shared hierarchy-attenuating aspect. Therefore, the resultant interaction effect would be driven mainly by the hierarchy-enhancing aspect. It is reasonable to argue that the stronger mediation effect of perceived social mobility promoting pro-environmental intentions via increasing cosmopolitan orientation at lower (vs. higher) levels of SDO is driven by individuals endorsing lower levels of the hierarchy-enhancing legitimizing myths. These individuals are less likely to morally and intellectually justify their dominance over others and the environment, thus strengthening the benefits of having a cosmopolitan orientation for motivating higher pro-environmental intentions.

Also note that the subdimension of SDO on egalitarianism (vs. dominance) has stronger correlations with our pro-environmental measures (see Table 1), which is consistent with a recent finding by Stanley et al. (2017). SDO-Egalitarianism entails support for ideologies and policies that enhance group-based inequality through unequal distribution of resources. It would be interesting to examine in future research whether cosmopolitan orientation could buffer the adverse impact of SDO-Egalitarianism on environmentalism through supporting a prosocial tendency to allocate resources equally and not to consume resources in a way that satisfies self-interests while damaging the environment.

Going beyond investigating cosmopolitan orientation and SDO as individual differences, future research should follow up to test whether individuals can learn through training or intervention to develop higher levels of cosmopolitan orientation and/or lower levels of SDO. Existing theorizing conceptualizes cosmopolitan orientation to be malleable, as its development is responsive to the globalizing world; people can acquire cosmopolitan qualities or learn the skills and practices to be a cosmopolitan (Hannerz, 1996; Thompson & Tambyah, 1999; Vertovec & Cohen, 2002; Woodward, Skrbis, & Bean, 2008). Research also has suggested that SDO is

not a fixed ideology but a motivational construct that is susceptible to change in response to the social context or the delivery of interventions that help people become more accepting and empathetic (Huang & Liu, 2005; Liu, Huang, & McFedries, 2008). Interventions that induce a higher cosmopolitan orientation and/or lower SDO might deem beneficial to nurture greater environmental consciousness and encourage more effective pro-environmental actions.

In conclusion, the current research integrates person-level factors across societal, cultural, and group domains to foster understanding of people's likelihood to engage in PEB. It suggests that an egalitarian worldview that characterizes relationships between cultures, between social groups, and between humans and nature might hold the key to address the global challenge of climate change.

Acknowledgement

This research was supported by Singapore Ministry of Education (MOE) Academic Research Fund (AcRF) Tier 1 Grant C242/MSS16S002 awarded to Angela K.-y. Leung.

Footnote

¹ Based on a suggestion that we received during the review process, we also tested alternative models where perceived social mobility and cosmopolitan orientation mediate the negative association between SDO and pro-environmental intentions. Therefore, SDO is hypothesized as the predictor instead of the mediator in these models (i.e., SDO → Perceived social mobility → Cosmopolitan orientation → Pro-environmental intentions). The indirect effect for this alternative model was not significant, 95% CI_{Boot} [-0.01, 0.01]. Notably, SDO does not predict perceived social mobility, $B = .01$, $SE = .09$, $p = .90$. The results are similar regardless of whether the analyses focused on pro-environmental citizenship intentions, private behavioral intentions, or pro-environmental intentions as an overall aggregate (for the full models, see Table 4). We also ruled out the model with the mediators in reverse order (i.e., SDO → Cosmopolitan orientation → Perceived social mobility → Pro-environmental intentions). This model, with cosmopolitan orientation predicting perceived social mobility, is unlikely to be theoretically cogent. As seen in Models 3 to 5 in Table 4, these models are not significant because perceived social mobility does not predict pro-environmental intentions, $ps > .71$. The indirect effect for this model also was not significant, 95% CI_{Boot} [-0.03, 0.01].

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