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The hierarchy enforcement hypothesis of environmental exploitation: A social dominance perspective☆

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HIGHLIGHTS

- Tested a hierarchy enforcement hypothesis of environmental exploitation
- Reports results from two experiments using Bayesian moderated regression
- Showed that Social Dominance Orientation predicts support for unsustainable environmental exploitation
- Identifies a dominance motive for why some people support environmental exploitation more than others

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ABSTRACT

Social Dominance Orientation (SDO) predicts support for unsustainable environmental exploitation, but the mechanism driving this effect remains unclear. Here we propose and test a novel *Hierarchy Enforcement Hypothesis of Environmental Exploitation*. Two experiments analysed using Bayesian moderated regression showed that SDO predicted support for a new mining operation expected to generate further profits to high-status groups in society, but not when profits were expected to equally benefit all members of the community. SDO predicts environmental exploitation to the extent that doing so helps sustain and widen the gap between dominant and disadvantaged groups through the disproportionate allocation of resources. This research identifies a dominance motive that may explain why some people support environmental exploitation more than others.

> There is a time to battle against Nature, and a time to obey her. True wisdom lies in making the right choice.
>
> [Arthur C. Clarke, The Fountains of Paradise (1979)]

Social Dominance Theory is a prominent theory of intergroup relations that proposes measurable differences in the extent to which individuals tend to favour hierarchical social dominance over egalitarian relations (Pratto, Sidanius, Stallworth, & Malle, 1994; Sidanius & Pratto, 1999). Social Dominance Theory also operationalizes a core construct, Social Dominance Orientation (SDO), which is theorized to reflect individual differences in the motivation to maintain and enforce group-based hierarchical relations (Pratto, Sidanius, Stallworth, & Malle, 1994). There is substantial empirical evidence documenting the correlates of SDO and its important role in understanding human sociality (e.g., Kteily, Ho, & Sidanius, 2012; Pratto, Sidanius, & Levin, 2006). Although the focus of SDO is on a generalized orientation towards unequal relations between humans, past research has shown that high SDO is also related to endorsement of environmental exploitation (e.g., Altemeyer, 2003; Milfont & Duckitt, 2010; Pratto, Sidanius, Stallworth, & Malle, 1994; Son Hing, Bobocel, Zanna, & McBride, 2007).

In an earlier publication we have expanded the theoretical scope of Social Dominance Theory by arguing that its dominance focus can also be useful in understanding hierarchical relations between humans and the natural environment (Milfont, Richter, Sibley, Wilson, & Fischer, 2013). We contended that high-SDO individuals tend to be less concerned about environmental issues, and more willing to exploit the environment in unsustainable ways, because SDO expresses a standpoint supporting human hierarchical dominance over nature. Milfont, Richter, Sibley, Wilson, and Fischer (2013) reported that SDO was associated with lower levels of environmental concern in a nationally representative sample (Study 1) and in country-level data across 27 nations (Study 2), and that SDO was positively related to utilization attitudes towards nature (Study 3) and mediated the gender difference in environmentalism (Study 4). These results show that SDO is systematically and reliably linked to anti-environmentalism and a willingness to exploit the environment.

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Support for the perspective that SDO predicts bothideologies promoting hierarchical intergroup relations and also ideologies promoting the exploitation of natural resources and human hierarchical dominance over nature is provided by recent research showing that SDO also predicts dominance views towards non-human animals (Dhont, Hodson, Costello, & MacInnis, in press). Having reliably documented the links between SDO and environmental exploitation, in the current paper we aim to determine the mechanism explaining *why* high-SDO individuals tend to support the exploitation of natural resources.

Why does SDO predict support for environmental exploitation?

A central premise of Social Dominance Theory is that high-SDO individuals should support initiatives and social policies that promote and enforce social hierarchy (Sidanius & Pratto, 1999). We argue that this should include policies related to environmental exploitation to the extent that such exploitation is congruent with the social dominance motive. Previous findings lend support to this general premise, as SDO has been reliably shown to predict a willingness to exploit the environment in unsustainable ways as well as a general lack of environmental concern (Milfont & Duckitt, 2010; Milfont, Richter, Sibley, Wilson, & Fischer, 2013). We argue that high-SDO individuals should be motivated to endorse a broad range of ideologies that help to justify inequality and support a desire for dominance in its many forms, including those pertaining to human hierarchical dominance over nature (Milfont, Richter, Sibley, Wilson, & Fischer, 2013).

Extending our earlier work, we posit a *Hierarchy Enforcement Hypothesis of Environmental Exploitation* to elucidate the mechanism for the effect. This hypothesis states that SDO should predict willingness to exploit the environment *to the extent that resources gained by doing so will help sustain and widen the gap in group-based status through the disproportionate allocation of resources gained from exploiting the environment to the dominant group*. A good example of this should be the differential allocation of resources gained through activities such as mining. High-SDO individuals should support new mining initiatives to the extent that such initiatives are expected to lead to the promotion and maintenance of hierarchy by disproportionality benefiting high-status groups. This might include groups such as mining companies, chief executives, investors, or possibly the dominant ethnic group over the rights of indigenous peoples dispossessed from their land, to name but a few.

According to this perspective, the positive association between SDO and support for the unsustainable exploitation of the environment observed in previous studies presumably occurred because people typically view environmental exploitation as a hierarchy enhancing endeavour in which the profits of such enterprise disproportionately benefit those already high in status. As counter to our hierarchy enforcement hypothesis, we argue that high-SDO individuals should be indifferent to environmental exploitation in (the arguably less likely) conditions where treatment of the environment was entirely unrelated to the maintenance or promotion of social hierarchy. To take a more extreme counter-example, we assert that high-SDO individuals should be among those most opposed to potentially environmentally damaging initiatives such as mining, if the profits from such operations were explicitly tied to reducing hierarchy and disproportionately benefiting poorer and lower status people in society in order to reduce inequality.

The present article reports two studies testing our novel *Hierarchy Enforcement Hypothesis of Environmental Exploitation*. In both experiments, participants first completed a measure of SDO, and then read one of two vignettes describing a potential mining initiative in which the profits would further benefit already high-status groups in society (*hierarchy-enhancing outcome* condition), or would be distributed equally among all members of the community (*hierarchy-attenuating outcome* condition). In the present studies, our hypothesis focuses on the interaction between SDO and experimental condition in predicting mining support.

We hypothesized that individual differences in SDO would be most predictive of support for mining when the expectation was of a hierarchy-enhancing outcome, but not when the expectation was of a hierarchy-attenuating outcome. We also note that a stronger version of this hypothesis would predict that SDO may negatively predict support for mining under strongly hierarchy-attenuating outcome expectations. In other words, a positive association between SDO and mining support will only be observed in the hierarchy-enhancing condition. A negative association between SDO and mining support is also possible in the hierarchy-attenuating condition.

We explicitly predicted that there would be an interaction, but left it an open question as to whether there would also be a main effect of experimental condition. There might be strong normative pressures or social desirability responding at play to influence participants to display stronger mining support in the hierarchy-attenuating condition relative to the hierarchy-attenuating condition. However, even if a main effect of condition is observed our predicted interaction should still be statistically significant and would then qualify the main effect.

Study 1

Study 1 was designed to test our hypothesis that high-SDO individuals would be more supportive of a new mining initiative when resulting profits would further benefit already high-status groups in society.

Method

Participants

The experiment was conducted as part of a larger and unrelated survey project. No conditions, measures or participants were dropped from the experiment. Sample size was determined in advance, aiming at a total of 150 participants equally distributed by experimental condition. In the end, a total of 144 first-year psychology students (102 females, 42 males; mean age = 19 years; 76% New Zealand-born) from Victoria University of Wellington completed the online survey in September 2012 for partial course credit.

Measures and procedure

The participants first completed the SDO scale and were then presented with one of two vignettes describing a situation where rare minerals have been found. The measures are detailed below.

We used the revised SDO scale developed by Ho et al. (2012) which measures the two dimensions of Dominance and Egalitarianism. Items were rated from 1 (*strongly disagree*) to 7 (*strongly agree*). The dimensions were highly correlated ($r = .80$) and only the overall SDO score was considered in this study ($\alpha = .90$; $M = 3.10$, $SD = .91$).

The participants were then randomly assigned to one of the experimental vignettes that manipulated the expected outcomes of mining the resource. Condition A ($n = 69$) manipulated a hierarchy-enhancing outcome, while Condition B ($n = 75$) manipulated a hierarchy-attenuating outcome. The vignettes are presented below.

Hierarchy-enhancing condition. Rare minerals have been found on private land. The land is owned by a wealthy family, who have discovered the resources on their land. They want to set up a mining operation, and expect to make millions of dollars of profits each year. As they own the land, the profits will go directly to them, and will increase the wealth of the family, and the wealth of investors. They plan to set up a company, and other wealthy investors are eager to buy shares in the new mining company. The mining operation will set aside money to repair any environmental damages and return the area to a natural state once the resources have been mined, and the mining operation will have trickle down benefits for the local community as it will employ a large number of people. However, the profits will be exclusively to the mining company and its investors.

Hierarchy-attenuating condition. Rare minerals have been found on public land. The land is owned by the local council, who have discovered the resources on the land. The local community have voted to set up a mining operation, and expect to make millions of dollars of profits each year. As the land is publicly owned, the profits will go directly to the community, and will be invested back into the local community. They plan to set up a trust, and everyone in the community will benefit equally and have an equal number of shares in the mining operation. The mining operation will set aside money to repair any environmental damages and return the area to a natural state once the resources have been mined, and the mining operation will have trickle down benefits for the local community as it will employ a large number of people. The profits will be shared equally by all in the local community and be reinvested to build infrastructure for everyone equally.

In line with our proposed hypothesis, the vignettes vary in the extent to which the mining operation enhances or attenuates social inequality both in terms of the nature of the enterprise (private vs. public) and in terms of resource allocation. At the same time, we kept constant in both vignettes the information that money will be put aside to repair any environmental damages, and that the mining operation will generate jobs. We added these aspects in the vignettes and kept them constant because minimal environmental impact (or the view that any environmental damages would be 'repaired') and the creation of jobs are common discourses around new mining operations (see, e.g., Bebbington, Hinojosa, Bebbington, Burneo, & Warnaars, 2008; Emel & Krueger, 2003; Walton, 2007).

The participants were then asked to indicate their support for mining using three questions: 'How supportive would you be of extracting the rare minerals?', 'How supportive would you be of the mining operation as described above?', and 'How supportive would you be of the way profits will be shared?' Questions were rated from 1 (*very unsupportive*) to 5 (*very supportive*) and averaged to form a measure of mining support ($\alpha = .75$; $M = 3.49$, $SD = .84$).

Socio-demographic and unrelated questions. Finally, the participants proceeded to the unrelated survey, comprising personality measures (e.g., scales measuring delay of gratification, self-control, goal orientation, consideration of future consequences) and self-reported behavioural measures (e.g., healthy eating, physical exercise, electricity conservation). The participants then completed socio-demographic questions and were debriefed.

Bayesian modelling

We tested our predictions in both experiments using moderated regression analyses with Bayesian estimation where the results from Study 1 were used as weakly informative priors in Study 2. Since Bayesian methods may be unfamiliar to some readers, brief comments are warranted (for a detailed review, see Kruschke, Aguinis, & Joo, 2012).

The reported Bayesian regression parameters and simple slope estimates are conceptually similar to more well-known frequentist moderated regression models estimated using Maximum Likelihood. However, the use of Bayesian estimates is arguably more robust and interpretable. Yuan and MacKinnon (2009) put it nicely when discussing the difference between Bayesian Credibility Intervals relative to more well-known Frequentist Confidence Intervals (CIs). They commented that "Bayesian credible intervals have more natural probability interpretations than CIs. A 95% credible interval means that there is a 95% chance that the credible interval contains the true value of the parameter on the basis of the observed data" (p. 304).

Because of this feature, credibility intervals in Bayesian analysis do not have to be symmetric. Rather, intervals use the specific percentile values around the distribution of each parameter—known as the posterior distribution. For example, the 95% Bayesian Credibility Intervals for the posterior distribution of a regression slope, such as those we estimate here, would take the 2.5 and 97.5 percentile values of the posterior distribution, thus allowing for skew. The *p*-values that we report in our analyses thus reflect the proportion posterior distribution for a given parameter (regression slope or simple slope estimate) that is above or below zero.

Another aspect of Bayesian analysis is that it explicitly recognizes model priors, which reflect the distribution of credibility of parameter values based on previous information. In a Bayesian model, these priors are then updated as new data comes in. In many cases, non-informative priors can be set which have a minimal impact on estimates of the distribution of each parameter (i.e., a minimal impact on the posterior distribution). We opted for this approach in Study 1, and set non-informative priors for that analysis. When coming to Study 2, however, we had previous knowledge about the expected results based on the first study. We used the information from Study 1 to set weakly informative priors for the slopes reflecting the association between condition, SDO, and the SDO × condition interaction on support for mining. Following Yuan and MacKinnon (2009), we inflated the variance of these priors by a factor of 4, thus in effect down-weighting the effects of these priors to be as if they were based on 36 participants, rather than the total Study 1 sample of 144 (36 = 144 / 4). We used uninformative priors for all other model parameters in Study 2.

We estimated posterior standard deviations and credibility intervals for simple slopes and point estimates using Bayesian estimation.

Results and discussion

The upper half of Table 1 presents the results from our Bayesian moderated regression model testing associations between SDO and mining support in Study 1. There was a marginally significant main effect for SDO ($b = -.137$, $p < .07$), suggesting a trend for a negative association between SDO and mining support. There was a strong main effect of condition ($b = -.736$, $p < .001$), indicating that overall participants are more likely to support the mining operation in the hierarchy-attenuating condition. Importantly, these main effects were qualified by the predicted interaction. As expected, the SDO × condition interaction was significant ($b = .379$, $p < .001$), and this *p*-value indicates that less than 0.10% of the proportion of the posterior distribution for this parameter was below zero.

Consistent with predictions, simple slope estimates indicated that SDO significantly predicted mining support in the hierarchy-enhancing outcome condition ($b = .243$, *Posterior SD* = .107, $p = .012$; *95% Cred. Int.* = .031, .425). However, SDO did not significantly predict mining support in the hierarchy-attenuating outcome condition ($b = -.137$,

Table 1
Bayesian moderated regression models testing association between SDO and support for mining under hierarchy-enhancing and hierarchy-attenuating conditions.

	b	Posterior std. dev.	*β*	*p*	95% credibility interval	
					Lower 2.5%	Upper 2.5%
Study 1						
Intercept	3.842	.088		.000	3.670	4.014
SDO	−.137	.092	−.144	.068	−.318	.044
Condition	−.736	.126	−.427	.000	−.984	−.488
SDO × condition	.379	.141	.260	.000	.102	.656
Study 2						
Intercept	3.848	.072		.000	3.706	3.987
RWA	−.081	.051	.072	.056	−.180	.019
SDO	−.016	.079	.086	.422	−.191	.139
Condition	−.613	.099	.057	.000	−.804	−.416
SDO × condition	.240	.114	.083	.018	.016	.465

Study 1 fit statistics: $N = 144$; Posterior Predictive *p*-value = .499, 95% C.I. for observed and replicated $\chi^2 = -9.127, 9.417$; $R^2 = .232$, *Posterior SD* = .056, $p < .001$, *95% Cred. Int.* = .124, .342; model used diffuse priors. Study 2 fit statistics: $N = 195$; Posterior Predictive *p*-value = .395, 95% C.I. for observed and replicated $\chi^2 = -9.387, 13.169$; $R^2 = .185$, *Posterior SD* = .046, $p < .001$, *95% Cred. Int.* = .100, .279; model used weakly informative priors (4 × variance of beta coefficients from Study 1) for similar parameters, and a non-informative prior for RWA. *p*-Values for model parameters represent the proportion of the posterior distribution above/below 0.

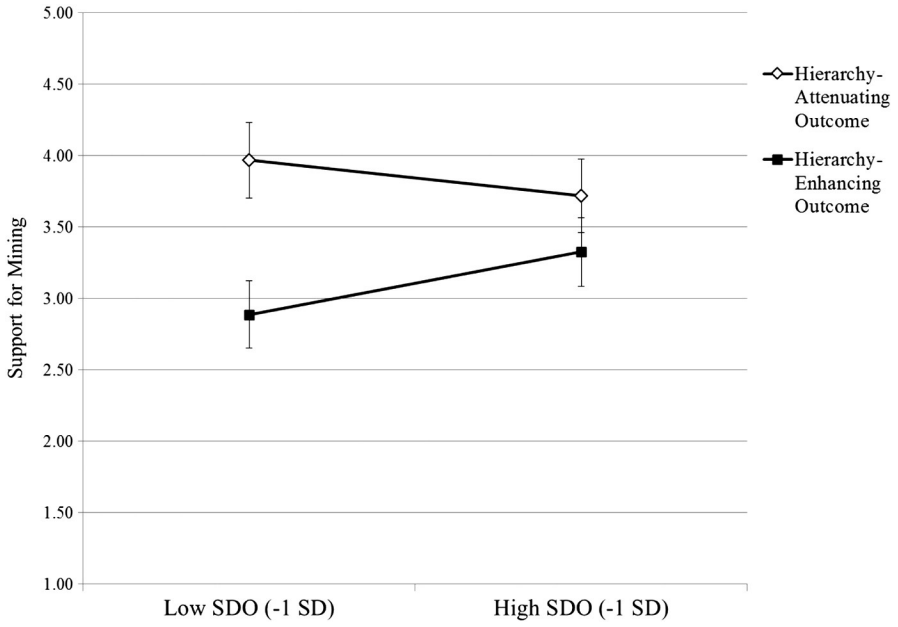

Fig. 1. Bayesian moderated regression interaction showing the association between SDO and support for mining under hierarchy-enhancing and hierarchy-attenuating outcomes (error bars represent 95% credibility intervals around point estimates; Study 1).

Posterior SD = .092, p = .068; *95% Cred. Int.* = −.318, .044). Fig. 1 presents these simple slopes.[1]

Study 2

Supporting our *Hierarchy Enforcement Hypothesis of Environmental Exploitation*, Study 1 showed that individual differences in SDO were most predictive of mining support when the vignette described expectations of a hierarchy-enhancing outcome, but not when the vignette described expectations of a hierarchy-attenuating outcome. Our aim in Study 2 was to replicate Study 1, and also extend it by assessing the main effect of right-wing authoritarianism (RWA).

We included RWA in Study 2 for theoretical and empirical reasons. First, RWA is closely related to SDO in predicting group-based oppression (Altemeyer, 1998; Duckitt, 2001). As a result, the inclusion of both SDO and RWA in regression analysis is standard practice in the broader literature looking at how these constructs predict prejudice (e.g., McFarland, 2010; Wilson & Sibley, 2013). Second, RWA has also been shown to predict support for environmental exploitation (e.g., Iwata, 1977; Milfont & Duckitt, 2010; Peterson, Doty, & Winter, 1993; Sabbagh, 2005; Schultz & Stone, 1994), including dominance over non-human animals (Dhont & Hodson, 2014). However, in our earlier research we showed that SDO predicts environmentalism independently from RWA (Milfont, Richter, Sibley, Wilson, & Fischer, 2013). We expected that the predicted interaction between SDO and mining condition should hold when adjusting for the main effect of RWA.

Method

Participants

The same design was employed in the second experiment as the one described in Study 1, but here the aim was to recruit a total of 200 participants equally distributed by experimental condition. The final sample comprised 195 first-year psychology students from Victoria University of Wellington who completed (151 females, 44 males; mean age = 19 years; 77.4% New Zealand-born) who completed the online survey during March–April 2013 for partial course credit.

Measures and procedure

The revised SDO scale (α = .89; M = 2.93, SD = .89), the vignettes and the three mining support questions (α = .73; M = 3.54, SD = .81) were used as in Study 1. Altemeyer's (1998) 30-item Right-Wing Authoritarianism (RWA) scale was also included. RWA items were rated from −4 (*very strongly disagree*) to 4 (*very strongly agree*; α = .94; M = −1.86, SD = 1.17). The participants first completed the RWA and SDO scales and were then randomly assigned to the same vignettes manipulating either a hierarchy-enhancing outcome (Condition A, n = 97) or a hierarchy-attenuating outcome (Condition B, n = 98).

Results and discussion

The results from our Bayesian moderated regression model testing associations between SDO and mining support in Study 2 are reported in the lower half of Table 1. There was a weak and marginally significant main effect for RWA (b = −.081, p = .072), suggesting a trend for a negative association between RWA and mining support. The marginal main effect of SDO on mining support observed in Study 1 did not emerge in the present study, perhaps as a result of the inclusion of RWA. There was a strong main effect of condition (b = −.613, p < .001), once again indicating that participants are more likely to support the mining operation in the hierarchy-attenuating condition. Importantly, the results from our Bayesian moderated regression model once again showed that the SDO × condition interaction was significant (b = .240, p = .018).

As hypothesized, and updating the effects observed in Study 1, simple slope estimates indicated that SDO significantly predicted mining support in the hierarchy-enhancing condition (b = .225, *Posterior SD* = .092, p = .008; *95% Cred. Int.* = .044, .406), and SDO did not significantly predict mining support in the hierarchy-attenuating condition (b = −.016, *Posterior SD* = .079, p = .422; *95% Cred. Int.* =

[1] Results held when estimating the model using Maximum Likelihood. Under Maximum Likelihood, the interaction term was significant (b = .379, SE = .137, t = 2.76, p = .006; *95% Confidence Int.* = .110, .648). SDO significantly predicted mining support in the hierarchy-enhancing outcome condition (b = .242, SE = .104, t = 2.32, p = .020; *95% Confidence Int.* = .038, .446), but not in the hierarchy-attenuating outcome condition (b = −.137, SE = .090, t = −1.53, p = .126; *95% Confidence Int.* = −.312, .038).

−.171, .139). In addition, these results were not affected by individual differences in RWA. Fig. 2 presents the simple slopes.[2]

General discussion

A sizeable body of empirical evidence has demonstrated the explanatory power of SDO in predicting endorsement of ideologies that promote hierarchical intergroup relations (e.g., Altemeyer, 1998; Duckitt, 2001; Kteily, Ho, & Sidanius, 2012; Pratto, Sidanius, & Levin, 2006; Sidanius & Pratto, 1999). From the perspective of Social Dominance Theory, the exploitation of the environment may be one of many behaviours that high-SDO individuals endorse to maintain and enforce social hierarchy.

In an earlier publication, we have broadened the theoretical scope of Social Dominance Theory by arguing that SDO is also an important variable in understanding hierarchical views towards nature (Milfont, Richter, Sibley, Wilson, & Fischer, 2013). The present research identified and tested a mechanism driving the observed findings that high-SDO individuals tend to support the exploitation of natural resources. We found that the more a new mining initiative was perceived to generate profits that would further benefit already high-status groups in society, the more likely people high in SDO were to support the mining operation. In contrast, SDO was not a predictor of mining support when profits from the mining were perceived to equally benefit all members of the community.

The observed SDO × condition interaction in both experiments supported our hierarchy enforcement hypothesis. SDO only predicted mining support in the hierarchy-enhancing condition which would benefit already high-status groups in society. Besides the predicted interaction finding, it is worth noting two other interesting findings. First, there was a main effect of condition indicating an overall tendency of participants to display stronger mining support in the hierarchy-attenuating condition relative to the hierarchy-attenuating condition. This main effect of condition might have resulted from strong normative pressure or social desirability responding influencing participants to support the mining operation when it was perceived to equally benefit all members of the community.

The second interesting finding refers to variation in mining support for those low and high in SDO. As can be seen in Figs. 1 and 2, opposition to mining is driven by those motivated by group-based equality and egalitarianism (low SDO) when the mining operation in question is seen as promoting and maintaining existing hierarchy and inequality. In contrast, those who are high in the competitive drive for superiority and dominance (high SDO) express more similar levels of support for mining regardless of whether it is seen as supporting hierarchy-enhancing or hierarchy-attenuating outcomes. These results thus indicate that low-SDO individuals express principled support and opposition for mining operations depending on the perceived societal consequences. Their attitudes towards mining, in other words, are contingent on the outcome, rather than being opposed to mining as a concept across the board. To paraphrase our opening epigraph, this suggests that low SDOs may be more likely to make 'contingent choices'. In contrast, high SDOs, it seems, just want to mine.

It is important to highlight that the main effect of condition and the interesting variation in mining support for low-SDO individuals were qualified by the predicted interaction. Individuals with high levels of SDO support environmental exploitation as a strategy to further sustain and widen the gap between high-status and low-status groups in society. This research identifies a dominance motive that may explain why some people may support environmental exploitation more than others. Moreover, our findings also emphasize the generality of Social Dominance Theory as an explanatory construct. SDO predicts support for environmental exploitation in much the same way as previous research has shown it to predict a host of other aspects of social policy and ideology related to in-group relations (Sidanius & Pratto, 1999). For instance, Duckitt and Sibley (2010) reported that people high in SDO were most opposed to a fictitious immigrant groups described as economically competitive relative to a control group. Duckitt and Sibley (2010) argued that this is because those high in SDO should be invested in maintaining and enforcing hierarchy over potential economic competitors, and also over those seen as weak and inferior. In much the same way, we show in the current studies that people high in SDO are more willing to exploit the environment in unsustainable ways because to do so may aid in the production and maintenance of group-based hierarchical social structures.

Is the underlying assumption made in our research that environmental exploitation is generally perceived as a hierarchy-enhancing situation justifiable? New mining operations can also be supported by some left-wing organisations because the operation might provide relatively cheap energy as well as jobs for many people. This argument, alongside the view that the mining operation might have minimal environmental impact, is indeed used in discourses around new mining operations to gather support (see, e.g., Bebbington, Hinojosa, Bebbington, Burneo, & Warnaars, 2008; Emel & Krueger, 2003; Walton, 2007). However, we argue that when the natural environment is destroyed it is more likely that everyone loses out from the potential of sharing that environment. Everyone loses the commons, as do future generations. When the environment is mined or used for industry, we argue that it is more likely that the benefits will disproportionately benefit the few, rather than the many.

This is not to say that something like mining will not create jobs, but it is more likely to disproportionately create more wealth for the privileged few. Moreover, in the context of New Zealand, and also of many other nations, such operations tend to generate the majority of their profits for overseas corporations. This is of course a contentious point, and one on which reliable data such as environmental impact, profit margins and investment back into nations are hard to obtain. In the months following the completion of this experiment, the New Zealand government sold the rights to off-shore gas mining for large sections of the coastline to a multinational company (Laugesen, 2013), and has modified legislation to make it harder for the public to oppose such operations (Vance, 2014). Mining operations are a contested issue, and although it might create benefits we argue that mining operations tend to be hierarchy-enhancing situations both in terms of human dominance over nature as well as in terms of profit distribution, which tend to further benefit already high-status groups in society.

Future studies could advance this argument by including a control condition in which the mining operation is framed in neither an explicitly hierarchy-enhancing nor hierarchy-attenuating manner. This would allow examination of whether the relationship between SDO and support for the mining operation (and consequently environmental exploitation) is weaker in the hierarchy-attenuating frame or stronger in the hierarchy-enhancing frame (relative to the control). It is also possible that the association between SDO and environmental exploitation could be partially explained by their mutual association with tough-mindedness (Duckitt, 2001), without reference to the implicitly hierarchy-enhancing nature of environmental exploitation. Future studies could also advance our research by exploring this possibility. Finally, our analyses were based on an undergraduate and disproportionately female sample. Future research could extend our findings by testing whether they generalize in representative samples of the wider community. We suspect that more representative samples may also detect a difference in support for mining between the hierarchy-enhancing and hierarchy-attenuating conditions among those high in SDO (due to possible restriction in variance at the high end of the SDO scale in our sample).

[2] Results were consistent when estimated using Maximum Likelihood, although the critical interaction term was only marginally significant ($b = .215$, $SE = .115$, $t = 1.86$, $p = .062$; *95% Confidence Int.* $= -.011, .442$). SDO significantly predicted mining support in the hierarchy-enhancing outcome condition ($b = .226$, $SE = .090$, $t = 2.53$, $p = .012$; *95% Confidence Int.* $= .051, .402$), but not in the hierarchy-attenuating outcome condition ($b = .011$, $SE = .084$, $t = .13$, $p = .894$; *95% Confidence Int.* $= -.154, .177$).

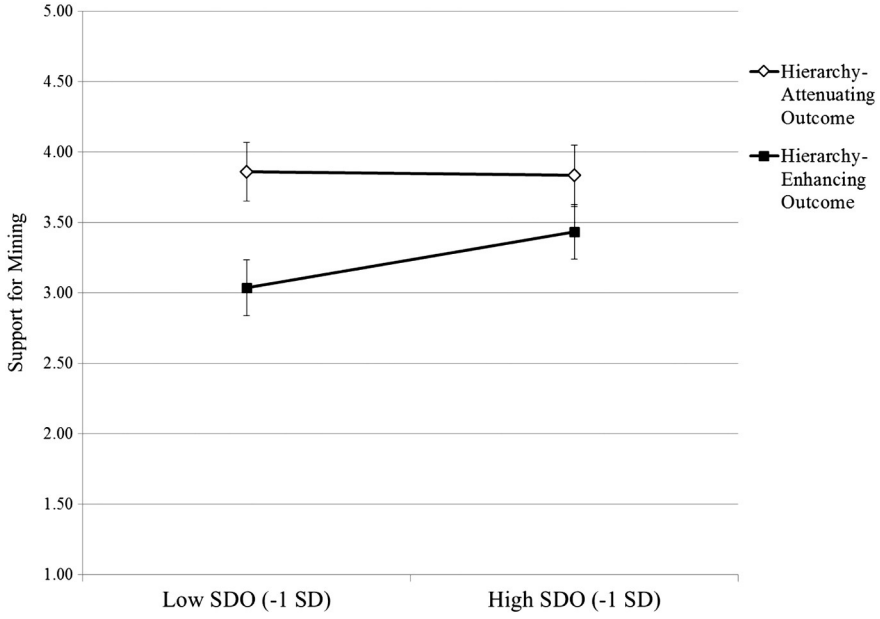

Fig. 2. Bayesian moderated regression interaction showing the association between SDO and support for mining under hierarchy-enhancing and hierarchy-attenuating outcomes (error bars represent 95% credibility intervals around point estimates; Study 2).

To address a social problem like unsustainable environmental exploitation we need to understand the many diverse motives that cause people to support such policies. What our research highlights is that environmental exploitation seems to be supported by those high in SDO to the extent that it helps to enforce social hierarchy, much as opposition to affirmative action helps to enforce racial inequality (Sidanius & Pratto, 1999). In some ways, these findings highlight the huge task ahead in shifting public opinion on such issues—increasing environmental awareness should not necessarily affect the attitudes of those high in SDO as their support for environmental exploitation may not necessarily be related to their appreciation of nature or the natural environment one way or the other. Rather, it seems that for those high in SDO, support for environmental exploitation is linked to their appreciation of the ability of such exploits to help maintain and enforce social inequality. Returning to the epigraph with which we began this paper, for those high in SDO the time to battle against, or to obey nature then, may be linked to the extent to which doing so will help to maintain inequality.

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