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**People and the Place: Social Dominance Orientation is Reciprocally
Associated with Hierarchy-Enhancing Occupations Over Time**

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Author note: The syntax for the analyses reported in this paper are available on the NZAVS website <http://www.nzavs.auckland.ac.nz>. A de-identified dataset containing the variables analysed in this manuscript is available upon request from Chris Sibley or any member of the NZAVS advisory board for the purposes of replicating the analyses reported here.

ABSTRACT

Social dominance orientation (SDO) is a widely researched construct that indexes a preference for hierarchical intergroup relations. However, it remains unclear whether this preference (a) motivates people to seek out occupations that enhance hierarchical relations between groups (i.e., occupational assortment), (b) develops as a result of working within hierarchy-enhancing occupations (i.e., occupational socialization), or (c) both. One reason for this gap is that the large-scale longitudinal data required to simultaneously model assortment and socialization processes is scarce. In this study, we analyzed data from two waves of longitudinal data (spaced either 1, 3, or 5 years apart) from a nationwide sample of adults ($N_s = 3,452 - 4,412$), who were already working in either hierarchy-enhancing occupations (e.g., law enforcement) or hierarchy-attenuating occupations (e.g., social work). Results showed that SDO predicted an increased probability of working in a hierarchy-enhancing occupation 3 and 5 years later. Working in a hierarchy-enhancing occupation was also positively associated with SDO after 1 and 5 years. This pattern generally suggests that occupations are both shaped, and shaped by, intergroup beliefs.

Keywords: social dominance orientation, intergroup relations, person-occupation fit, socialization, longitudinal analysis

**PEOPLE AND THE PLACE: SOCIAL DOMINANCE ORIENTATION
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The last decade has seen numerous social movements highlight how institutional norms reinforce hierarchies between groups of people. For example, Occupy Wall Street underscored practices in the financial sector that inflated the wealth of the “One Percent”, Black Lives Matter drew attention to racial discrimination in the criminal justice system, and the Me Too movement raised awareness of gendered exploitation in the workplace (Buckley, 2018; Cobb, 2016; DeLuca, Lawson, & Sun, 2012). Research substantiates their concerns: police are 3.5 times more likely to use physical force against Black Americans than White Americans (Goff, Lloyd, Geller, Raphael, & Glasser, 2016), and 1 in 4 women report workplace sexual harassment (Equal Employment Opportunity Commission, 2016). Moreover, while millions worldwide face economic hardship due to the ongoing coronavirus pandemic, a recent report found that billionaires had increased their wealth by more than 25 percent during this same period (UBS/PwC, 2020). In light of these trends, management scholars have called for empirical examination of the institutional factors that may contribute to inequities between social groups (Amis, Munir, Lawrence, Hirsch, & McGahan, 2018; Bapuji, Ertug, & Shaw, 2019; Bapuji, Patel, Ertug, & Allen, 2020).

An extensive line of research shows there is often a match between people’s psychological dispositions and the characteristics of their occupation (Holland, 1959; for review, see van Vianen, 2018). In recent years, scholars have expanded our understanding of such congruence to incorporate sociopolitical beliefs, including employees’ preference for—and their occupation’s general impact on—societal hierarchies (Haley & Sidanius, 2005). However, such findings raise an intriguing conundrum with respect to whether this alignment

occurs because people are sorted into occupations based on their sociopolitical beliefs (Schneider, 1987), whether occupational norms socialize people's sociopolitical preferences (Cooper-Thomas, van Vianen, & Anderson, 2004), or through a combination of both processes (e.g., De Cooman et al., 2009).

Researchers using a social dominance theory framework (Sidanius & Pratto 1999) have examined these questions for almost three decades, but the evidence remains equivocal (Haley & Sidanius, 2005). This literature assesses the degree to which social dominance orientation (SDO; Pratto, Sidanius, Stallworth, & Malle, 1994)—a measure of one's preference for hierarchical arrangements in society—predicts people's membership in occupations that foster (i.e., hierarchy-enhancing [HE]) or mitigate (i.e., hierarchy-attenuating [HA]) intergroup hierarchies. Whereas some studies suggest that people seek out, and are selected into, occupations that match their (dis)inclination for intergroup inequality (Pratto & Espinoza, 2001; Pratto, Stallworth, Sidanius, & Siers, 1997; Sidanius, van Laar, Levin, & Sinclair, 2003), others indicate that the occupational environment may be more critical in shaping the attitudes of its members (Dambrun, Kamiejski, Haddadi, & Duarte, 2009; Muheljc & Drace, 2018; Nicol, Charbonneau, & Boies, 2007).

However, these contradictory findings may be due to the disproportionate use of student samples to test these important associations. Aside from their usual limitations (see Bergman & Jean, 2016), student samples are particularly problematic for studying preferences for intergroup hierarchies because universities are generally viewed as HA environments (Sidanius et al., 2003; Sinclair, Sidanius, & Levin, 1998). Exposure to higher education tends to increase egalitarian beliefs, sometimes irrespective of whether students are in HE or HA micro-environments such as their academic major (e.g., Pascarella, Edison, Nora, Hagedorn, & Terenzini, 1996; Peterson & Lane, 2001). Because the salience of the macro-environment may neutralize some of the HE tendencies of specific academic majors,

there is a clear need to test these associations beyond a university setting (Bergman & Jean, 2016; Weston, Ritchie, Rohrer, & Przybylski, 2019).

A second limitation is a paucity of large-scale longitudinal data, outside of student samples, required to simultaneously model the effects of (a) occupations on individuals and (b) individuals on occupational choice (e.g., Nicol et al., 2007; Sidanius et al., 2003).

Although experimental designs are the only way to establish causality definitively, random assignment of occupation type and/or SDO is impossible without proxy manipulations that lack external validity (Rohrer, 2018). Moreover, small-scale studies are often underpowered; yielding parameter estimates that obscure the true effect size (Götz, Gosling, & Rentfrow, in press; van Assen, van Aert, & Wicherts, 2015). Therefore, we test the reciprocal associations between SDO and occupation type using longitudinal data from a large, nationwide random sample of adults employed in a range of HE and HA occupations to understand whether SDO is a precursor to, or product of, the type of occupation people work in. But first, we briefly outline social dominance theory and the critical distinctions between HE and HA occupations.

Social Dominance Theory

Social dominance theory argues that people tend to form intergroup hierarchies in which dominant groups (e.g., the wealthy) exert social and economic power over other groups (e.g., those in poverty; Sidanius & Pratto, 1999). These hierarchies produce disparities in the distribution of power and resources between social groups, whereby dominant groups accumulate disproportionate advantages (e.g., prestige, wealth, housing) relative to other groups (Sidanius, Sheehy-Skeffington, Ktiely, & Carvacho, 2017). As allocators of such resources, institutions, such as occupations, play an integral role in preserving intergroup hierarchies because the aggregate effect of their norms has a greater and more persistent impact on social inequality than does any one person in isolation (Haley & Sidanius, 2005).

However, institutions can have differential impacts on intergroup hierarchy. Social dominance theory defines hierarchy-enhancing (HE) occupations as those that promote dominant groups' interests by disproportionately allocating them positive status and resources. Although dependent on the cultural milieu, examples of HE occupations include those related to big business, finance, the military, and the criminal justice system (Sidanius, Liu, Shaw, & Pratto, 1994). Conversely, hierarchy-attenuating (HA) occupations aim to redress intergroup hierarchy by providing disadvantaged social groups access to valuable resources. Some examples of HA occupations include social workers, educators, and those who care for people with illness and disability (Haley & Sidanius, 2005). Although these examples reflect general trends, individual members of HE and HA occupations are diverse and can have high, moderate, or low preferences for intergroup inequality. Specifically, individuals can strengthen (e.g., voting against universal healthcare) or mitigate (e.g., voting for wealth redistribution) social hierarchies *irrespective* of their membership to an occupational subgroup. Rather, the distinction between HE and HA occupations reflects their net effects on social inequality, which can be both pervasive and persistent in the aggregate (Pratto et al., 2006).

In conjunction with institutions, social dominance theory proffers an individual-level factor involved in maintaining social inequality. Specifically, social dominance orientation (SDO), which captures one's preference for different groups in society to be organized hierarchically (Pratto et al., 1994). Accordingly, research shows that SDO consistently predicts generalized prejudice (Osborne, Satherley, Little, & Sibley, in press), including sexism (Sibley, Wilson, & Duckitt, 2007), xenophobia (Thomsen et al., 2010), and low empathy for outgroups (Hudson, Cikara, & Sidanius, 2019). Crucially, SDO is also linked to adverse *workplace* outcomes, including discrimination in hiring and evaluations (Simmons, Watkins, & Umphress, 2015; Umphress, Simmons, Boswell, & Triana, 2008), unethical

decision-making (Son Hing, Bobocel, Zanna, & McBride, 2007), and a desire for workplace homogeneity based on race and gender (Umpress, Smith-Crowe, Brief, Dietz, & Watkins, 2007), as well as abusive supervision (Khan, Moss, Quratulain, & Hameed, 2018). Put simply, SDO is a powerful predictor of both negative societal and workplace outcomes.

While social dominance theory provides a multilevel account of inequality, it acknowledges that the relationship between institutions and people is reciprocal. As such, people's sociopolitical beliefs should partly reflect the type of occupation to which they belong. Consistent with this thesis, the hierarchy-relevant nature of various types of institutions (such as occupations) correlates with its members' SDO (see Pratto, Sidanius, & Levin, 2006). For example, Sidanius and colleagues (1994) demonstrated that police officers (a HE occupation) in Los Angeles had higher SDO than did public defenders (a HA occupation). Likewise, research conducted in France has shown that psychology students (a HA major) have comparatively lower SDO than those in law (a HE major; Dambrun, Guimond, & Duarte, 2002). Accordingly, social dominance theory outlines five non-mutually exclusive mechanisms to explain the emergence and maintenance of these instances of sociopolitical fit (van Laar, Sidanius, Rabinowitz, & Sinclair, 1999). Because these mechanisms relate to two broad theoretical domains, we collapse them into the following two processes: occupational assortment and occupational socialization.

Occupational Assortment

One way for sociopolitical fit to develop over time is through a recurrent process in which people gravitate towards, and are selected into, occupations that share their characteristics and beliefs, and ultimately leave those with values that are incompatible with their own (Schneider, 1987; van Laar et al., 1999). We refer to these three mechanisms as *occupational assortment* because they reflect processes whereby people end up in occupations that mirror their beliefs rather than occupations shaping their beliefs. Thus,

according to social dominance theory, a person's SDO should reflect their assortment into HE versus HA occupations.

Prior research shows that SDO positively predicts preference for, and selection into, HE occupations, including law enforcement and business, whilst negatively predicting attraction to HA occupations such as human rights advocacy (Pratto et al., 1997; Pratto & Espinoza, 2001; Sidanius et al., 1996; cf. Gatto, Dambrun, Kerbrat, & De Oliveira, 2010). The strongest evidence for assortment came from a five-wave longitudinal study amongst university students, which found that participants with anti-egalitarian beliefs were more likely to select HE academic majors and future professions than those with more egalitarian beliefs (Sidanius et al., 2003). However, this study found no evidence that students' SDO changed as a function of their academic major. These findings suggest that SDO should predict assortment into HE occupations over time.

Occupational Socialization

Although SDO reflects a relatively stable preference for intergroup hierarchy, it is also malleable to environmental input (Pratto et al., 2006). However, much of the literature has examined how SDO predicts outcomes, without nearly as much research devoted to how situational factors predict SDO. This asymmetry is regrettable, as SDO is theorized as both "cause and effect" (Sidanius et al., 2017, p. 167)—a variable that influences social inequality through its impact on intergroup hierarchies, yet is also affected by context (Duckitt, 2001; Guimond, Dambrun, Michinov, & Duarte, 2003; Kteily, Sidanius, & Levin, 2011).

One of the key situational factors that may influence SDO over time is the institutional norms of an occupation. *Occupational socialization* refers to the process in which people adopt the norms and values that govern their occupation (Gray & Kish-Gephart, 2013; van Maanen & Schein, 1977). Although occupations remain an under-examined institution, their affiliations are increasingly overtaking organizational membership

as one of the more stable aspects in people's working lives (see Anteby, Chan, & DiBenigno 2016; Bechky, 2011). In the contemporary labor market, people are becoming more likely to work in multiple organizations within the same occupation. As such, some research shows that workers identify more strongly with their occupation than with their industry (Carnevale, Rose, & Cheah, 2011). Thus, occupations can foster strong norms that guide their members' behavior. For example, Cohn, Fehr, and Maréchal (2014) have shown that the salience of occupational identity amongst bank workers increased their dishonesty, which they attributed to the prevailing norms of the participants' profession within the banking industry.

Similarly, social dominance theory posits that the norms of HE occupations can socialize more anti-egalitarian beliefs amongst their members. Indeed, prior research shows that anti-egalitarian beliefs tend to be higher for those in HE majors (law) than for those in HA majors (psychology) and that these differences are mediated by perceived social norms (Dambrun et al., 2002; Muheljcic & Drace, 2018). Further work by Dambrun et al. (2009) comparing first and third-year undergraduates showed that exposure to HA academic majors lowered participants' SDO by decreasing their belief in genetic determinism. Finally, Nicol et al. (2007) observed that applicants to the military were unexpectedly *lower* on SDO than civilians, but that military students' SDO increased over the course of their four-year training program. Together, these findings suggest that working in a HE occupation is associated with an increase in SDO over time.

The Present Study

In this study, we test the reciprocal associations between SDO and the types of occupations people work in (i.e., HE or HA occupations). Although prior research provides evidence for both occupational assortment and occupational socialization, results have been inconsistent. Specifically, studies typically use student samples and find evidence for one process, but not the other (Nicol et al., 2007; Sidanius et al., 2003). It bears highlighting that

social dominance theory does not conceptualize assortment and socialization as competing processes (van Laar et al., 1999). Nevertheless, the mixed findings pose interesting theoretical and practical implications about the directionality of the relationship between SDO and occupation type. This is particularly important given that (i) SDO predicts a host of detrimental societal and workplace outcomes, and (ii) occupational members have the ability to allocate valuable resources within their communities (Cohn et al., 2014; Khan et al., 2018; Sibley et al., 2007; Unzueta et al., 2012). Therefore, these associations should be examined beyond lab designs and student samples and tested amongst a broader range of HE and HA occupations as they occur in the population (Bergman & Jean, 2016).

Another consideration is the timing of occupational assortment and occupational socialization, given they may not have temporal symmetry (e.g., Dormann & Griffin, 2015). Indeed, occupational assortment may be a slower process, occurring for reasons that include—but extend beyond—considerations of sociopolitical fit with any given occupation (e.g., Carnevale & Hatak, 2020; Cooper-Thomas & Wright, 2013). For example, people sometimes remain in a job despite value incongruence with their occupation because quitting can be costly, especially if individuals have economic and familial responsibilities to consider (Vogel et al., 2016). In contrast, occupational socialization may occur fairly soon after exposure to a work environment, with some research showing this can happen within months (Cooper-Thomas et al., 2004). In sum, occupational assortment may take longer intervals, whereas occupational socialization may occur more rapidly.

Using repeated measurements that are too close or too far apart may yield evidence of one process but not the other—a problem evident in prior research. To address, this, we test the reciprocal associations between SDO and occupation type using variable time lags of 1, 3, and 5 years. Because changing occupations can incur costs for individuals, we expect SDO to be associated with an increased probability of switching to a HE occupation after longer time

lags. In contrast, because socialization occurs more quickly than assortment, working in a HE occupation should positively associate with SDO irrespective of the time lag. To test these hypotheses, we examine data from participants already working in a broad range of HE and HA occupations from a nationwide longitudinal study testing three different temporal intervals. We also control for several demographics and personality traits, which allow us to model the effects of individual differences and intergroup attitudes separately. Our hypotheses for these varying time lags are as follows:

Hypothesis 1. Higher SDO is associated with an increased probability of working in a HE occupation after (H1a) three years and (H1b) five years.

Hypothesis 2. Working in a HE occupation will associate with higher SDO than working in a HA occupation after (H2a) one year, (H2b) three years, and (H2c) five years.

METHOD

Sampling Procedure

This study uses data from Times 5, 6, 8, and 10 of the New Zealand Attitudes and Values Study (NZAVS), a longitudinal panel study that surveys respondents annually on a range of sociopolitical attitudes, personality, and health outcomes. In 2009 (Time 1), invitations to participate in a 20-year panel study were sent to a random sample of adults registered to vote, which is compulsory in New Zealand. This resulted in 6,518 participants with a response rate of 16.6%. One non-random booster sample was recruited in 2011 (Time 3) to address sample attrition, and four subsequent random booster samples (in 2012, 2013, 2016, and 2018) have since been conducted to increase and diversify the sample (response rates ranging from 9.2% – 10.6%).

We chose Time 5 as the initial point for our analyses because this measurement occasion yielded a sample large enough to examine HE and HA occupational subgroups afforded by the larger sample frame. We chose Time 6 as the second point of analysis because it is the shortest lag available in the data set to examine socialization processes, as this can occur fairly rapidly (e.g., Cooper-Thomas et al., 2004). Given that people's occupations are highly stable (Statistics New Zealand, 2018), Times 8 and 10 were included because they provide longer time lags needed to identify the potential reciprocal associations between occupational socialization and occupational assortment. More detailed sampling procedures and attrition rates for the NZAVS are documented elsewhere (Satherley et al., 2015; Sibley, 2020), and a complete dictionary of all variables included in the NZAVS is available at <http://www.nzavs.auckland.ac.nz>.

Participants

We extracted data from the 5,301 participants ($M_{\text{age}} = 47.70$; $SD = 11.91$) who were working in either a HE or HA occupation (see Measures) at our initial point of analysis (i.e., Time 5), which excludes all booster samples from subsequent years. We restricted our analyses to those who responded to the waves in each analysis when testing different temporal lags. This resulted in final sample sizes of 4,412 (Times 5 & 6), 3,849 (Times 5 & 8), and 3,452 (Times 5 & 10). In terms of sample demographics, participants identified as New Zealand European/Pākehā (80.2%), Māori (12.9%), Asian (4.1%), and Pasifika (2.8%), comprising the four largest ethnic groups in New Zealand.

With respect to employment, the majority worked in HA occupations (62.8%). Of the women in the sample (i.e., 72.1% of the total sample), most worked in HA occupations (73.1%), whereas the majority of men in the sample worked in HE occupations (63.8%). However, the gender asymmetry in occupational type was more pronounced amongst ethnic majority men (of the NZ Europeans/Pākehā men in the sample, 66.2% worked in HE

occupations) compared to ethnic minority men (of the Māori, Asian and Pasifika men in the sample, 51.6% worked in HE occupations). Unsurprisingly, the median income for people in HE occupations was markedly higher (\$71,000) than for those in HA occupations (\$50,000). Finally, there was a very low base rate of movement in occupation type. Specifically, of those working in HA occupations at Time 5, 20 moved into HE occupations by Time 6, 25 by Time 8, and 45 by Time 10, whereas only 19 of those working in HE occupations at Time 5 moved into HA occupations by Time 6, 22 by Time 8, and 25 by Time 10.

Measures

Details for the measures included in this study are provided below. In addition to our focal variables, we included a number of control variables that were theoretically relevant to SDO and occupation type. These included right-wing authoritarianism (RWA), age, gender, ethnic majority status, income, and Big Five personality traits. Although these covariates are not the focus of these analyses, we provide a brief theoretical justification for their inclusion below and also re-ran the analyses without them as recommended in the literature (Bernierth & Aguinis, 2016). As shown in Table S1 in the Supplementary File, our focal pattern of results replicated when excluding all control variables.

Social dominance orientation was measured using six items from Sidanius and Pratto's (2001) 16-item SDO₆ scale, including "It is OK if some groups have more of a chance in life than others" and "We should have increased social equality" (reverse-coded). We randomly selected three pro-trait and three con-trait items from the original scale in order to avoid acquiescence bias (1 = *strongly disagree*; 7 = *strongly agree*; SDO_{T5} α = .70; SDO_{T6} α = .73; SDO_{T8} α = .79; SDO_{T10} α = .78).

Occupation type was determined by asking participants to report their current occupation. These open-ended responses were then classified according to minor group categories (~100 codes) from the Australian and New Zealand Standard Classification of

Occupations (ANZSCO). The ANZSCO classification system excludes those who are unemployed and does not distinguish between full-time or part-time workers. Two independent coders (average agreement = 91.5%) then further categorized occupations as either HE or HA based on definitions provided by social dominance theory and consistent with prior research in this area (e.g., Pratto et al., 1997; Sidanius et al., 2003; van Laar et al., 1999). A third independent coder resolved any discrepancies. Consistent with previous studies, we excluded any occupation that could not be disambiguated into HE and HA categories (Sidanius et al., 2003).

Occupations were classified as HE when they served the interests of dominant social groups (e.g., high socioeconomic status, socially powerful, ethnic majorities), and included business executives/managers, sales/marketing professionals, financial/insurance workers, real estate agents, legal professionals, defense force/police personnel, and prison/security officers. Conversely, HA occupations served the interests of socially oppressed groups (e.g., socially vulnerable, ethnic minorities, women, children, and people with illnesses/disabilities) and included nurses, health professionals, social/welfare workers, child care workers, education professionals, and volunteers (see Supplementary file Table S2). Occupation type was dummy coded with HE occupations reflecting our focal outcome (0 = HA, 1 = HE). To validate the distinction between occupational categories, an independent samples *t*-test demonstrated that people in HE occupations ($M = 2.47$, $SD = 0.88$) had significantly higher levels of SDO than those in HA occupations ($M = 2.12$, $SD = 0.81$), $p < .001$.

Right-wing authoritarianism was measured with six items from Altemeyer's (1996) 30-item scale, including "Our country will be destroyed someday if we do not smash the perversions eating away at our moral fibre and traditional beliefs" and "People should pay less attention to The Bible and other old traditional forms of religious guidance, and instead develop their own personal standards of what is moral and immoral" (reverse-scored). We

randomly selected three pro-trait and three con-trait items from the original scale to avoid acquiescence bias (1 = *strongly disagree*; 7 = *strongly agree*; $\alpha = .70$). RWA was included as a control variable because of its consistent associations with SDO (Duckitt & Sibley, 2017) and because research suggests the relationship between assortment and SDO can be explained by RWA (Gatto et al., 2010).

Big Five Personality was assessed using the Mini International Personality Item Pool (IPIP6; Sibley et al., 2011), which is a short-form adaptation of the Mini-PIP (Donnellan, Oswald, Baird, & Lewis, 2006). Because of the complexity of our analyses, we modeled all Big Five personality traits as latent variables with single indicators using the mean of four items rated on a scale from 1 (*very inaccurate*) to 7 (*very accurate*). To account for measurement error, each indicator's residual variance was fixed to $(1 - \text{Cronbach's } \alpha)$ times the variance of the observed scale score (Bollen, 1989; Hayduk, 1987). Extraversion was assessed with items including "I am the life of the party" and "I keep in the background" (reverse-scored; $\alpha = .75$). Agreeableness was assessed by items such as "I sympathize with others' feelings" and "I am not really interested in others" (reverse-scored; $\alpha = .67$). Conscientiousness was assessed using items such as "I like order" and "I often forget to put things back in their proper place" (reverse-scored; $\alpha = .67$). Neuroticism was assessed with items including "I get upset easily" and "I am relaxed most of the time" (reverse-scored; $\alpha = .70$). Finally, openness to experience was assessed with items such as "I have a vivid imagination" and "I have difficulty understanding abstract ideas" (reverse-scored; $\alpha = .70$).

We controlled for Big Five personality traits because of their associations with SDO and occupational interests. Specifically, Duckitt (2001) argued that SDO develops in part from personality traits such as low agreeableness. Indeed, meta-analytic data show that SDO is predicted by low agreeableness, and to a lesser extent, openness to experience (Sibley & Duckitt, 2008). These findings are generally echoed in our study, with the correlation matrix

in Table 1 showing that SDO is negatively correlated with agreeableness and openness but is also positively associated with conscientiousness. Likewise, Holland (1959) argues that vocational preferences are an expression of personality. For example, a meta-analysis on demonstrates that social vocational interests are correlated with agreeableness and extraversion, with the latter associated with enterprising vocational interests (Larson et al., 2002). Therefore, personality traits may be linked with HE and HA occupations, given the latter largely consist of enterprising and conventional types of work (i.e., HE) and caring professions (i.e., HA). Indeed, Table 1 shows that HE occupations are positively correlated with extraversion, but negatively correlated with agreeableness and neuroticism. Accordingly, we include Big Five personality traits to partition out individual traits from intergroup beliefs in our analyses.

Demographic control variables. Social dominance theory posits that certain groups (e.g., those who are older, ethnic majorities, and men) will be higher on SDO, holding *all else equal* (Sidanius & Pratto, 2003). As such, we included gender (0 = Women, 1 = Men), ethnicity (0 = Ethnic minority, 1 = NZ Europeans/Pākehā), and age as control variables in our analyses. Given that personal income is markedly higher for HE occupations in our sample (see Participants), it may also foster switches in occupation (i.e., the desire to work in an occupation that allows more opportunity for material resources). Conversely, higher income (and therefore being in a higher socioeconomic group) may be a unique predictor of SDO in the same way that other demographics such as gender, age, and ethnicity are theorized to be (Sidanius & Pratto, 1999). As such, we also included personal income as a control variable in our analyses.

Insert Table 1 around here

RESULTS

Preliminary Analyses

Table 1 shows descriptive statistics and bivariate correlations for all studied variables. All preliminary analyses described below were conducted in Mplus version 8.3 (Múthen & Múthen, 1998-2017) using full information maximum likelihood with robust estimation (MLR). Given one of our focal variables, SDO, was composed of both positively and negatively worded items, we first ran a series of eight confirmatory factor analyses (CFA) outlined by Marsh et al. (2010) on SDO at Times 5, 6, 8, and 10, which accounted for the possibility of bias introduced from wording effects (DiStefano & Motl, 2006; Marsh, Scalas, & Nagengast, 2010). This set of analyses considered a range of models testing either (a) correlated uniqueness, or (b) latent methods factors for positively and negatively worded items separately or simultaneously. We restricted these initial measurement models to those who responded at each wave (i.e., Times 5, 6, 8, and 10). We evaluated the fit of each model by comparing their relative parsimony, as well as a number of fit indices, including the comparative fit index ($CFI \geq .95$; Hu & Bentler, 1999), the root mean square error of approximation ($RMSEA \leq .08$; McDonald & Ho, 2002), and the standardized root mean square residual ($SRMR; \leq .08$; Hu & Bentler, 1999). We also report the overall chi-square (χ^2) test statistic, although the large samples used in these analyses render it uninformative due to its sensitivity to trivial deviations in model misspecification (Wang & Wang, 2012).

In Model 1, SDO was treated as a unidimensional construct (i.e., no methods factors), whereas Model 2 treated SDO as two different trait factors, as there is evidence for distinct dominance and egalitarian facets in recent scales (e.g., SDO₇; Ho et al., 2015) that were developed *after* the NZAVS began measuring SDO. Models 3-5 treated SDO as one trait factor, but correlated the residuals among both positive and negative items, respectively (Model 3), only positive items (Model 4), or only negative items (Model 5). Models 6-8

treated SDO as one trait factor, but included both positive and negative latent methods factors, respectively (Model 6), only a positive latent method factor (Model 7), or only a negative latent method factor (Model 8). In Models 6-8, congeneric methods factors were allowed to covary (i.e., positive method factor at Time 5 with positive method factor at Time 6, and so forth), but covariances *between* methods and trait factors were fixed at zero, as were the covariances between positive and negative methods factors. In all the models, we allowed the residuals for congeneric items to correlate across time. Model 6 produced non-positive definite results, which yielded unreliable parameter estimates. As such, we conducted two neighboring models: one which constrained the covariances between the negative latent methods factors to equality (Model 6a), and one that fixed the covariances between positive and negative methods factors respectively to zero (Model 6b).

As shown in Table 2, the fit indices indicated that Model 8—which is commensurate with the correlated trait-correlated methods minus 1 (CT-C(M-1); Eid, 2000) model—provided the most parsimonious and best-fitting model to these data. In this model, the positively worded items are used as the referent trait, with the negatively-worded method factor partialled out. A benefit of the CT-C(M-1) model is that the trait, method, and measurement errors are uncorrelated, which allows the separation of the non-reference method variances and covariances (Geiser et al., 2008). Therefore, we used Model 8 for the remainder of our analyses.

 Insert Table 2 around here

Measurement Invariance

To investigate the consistency of our assessments over time, we tested for two types of measurement invariance: configural invariance, which indicates that items map onto traits

in a similar pattern over time, and metric invariance, which refers to a similar relationship between the latent factor and items across time (Vandenberg & Lance, 2000). Although there are other types of invariance (i.e., scalar) that are important for examining latent mean difference, only configural and metric invariance are needed to test cross-lagged effects (Hu & Cheung, 2008; Little, Preacher, Selig, & Card, 2007). Nevertheless, we include results from testing scalar invariance (i.e., constraining item intercepts to equality over time) in Table S3 in the Supplementary File. When testing configural invariance, we estimated a measurement model in which the same items loaded onto the same latent trait factor at each of the time points used in our analyses. In the metric invariance model, we constrained the factor loadings for congeneric items across time to equality. In both models, we allowed the residuals for the same item across time to covary (Little et al., 2007).

Our results show that the configural invariance model fit these data well ($\chi^2(df) = 321.55(192)$, $p < .001$, CFI = .994, RMSEA = .015 [.012, .018], SRMR = .021). Given our large sample size (Wang & Wang, 2012), we evaluated each model using Cheung and Rensvold's (2002) criterion that differences smaller than $-.01$ in the CFI across sequential models reflect that model fit has not depreciated significantly. Crucially, constraining the factor loadings to equality in the metric invariance model ($\chi^2(df) = 390.39(207)$, $p < .001$, CFI = .992, RMSEA = .017 [.015, .020], SRMR = .027) did not lead to an appreciable decrement in model fit ($\Delta\chi^2_{(\Delta df)} = 68.84_{(15)}$, $\Delta CFI = -.002$, $\Delta RMSEA = .002$, $\Delta SRMR = .006$). Together, these tests show evidence of configural and metric invariance for SDO over time.

Insert Figure 1 around here

Hypotheses Testing

To examine the associations between HE occupations and SDO, we ran a cross-lagged panel analysis—a statistical technique commonly used to investigate directional influences between variables from longitudinal data (see Selig & Little, 2012). Specifically, at different temporal intervals, two waves of data were used to test a cross-lagged panel model with both autoregressive and cross-lagged paths. The autoregressive paths were included to examine and account for the stability of each construct over time, whereas the cross-lagged paths were included to examine the bidirectional effects of occupation type and SDO over the same period. To examine the unique effects of occupation type on SDO (and, conversely, SDO on occupation type), we also controlled for the effects of several variables in our analyses. These included RWA, which was modeled as a latent variable, partialling out the negative method factor given the pro-trait and con-trait items (as we did with SDO). However, given the complexity of modeling reciprocal effects between non-commensurate variables (i.e., occupation type and SDO), the Big Five personality traits were modeled as latent variables with reliability-corrected single indicators. The rest of our control variables, including gender, age, ethnic majority status, and income, were treated as observed variables.

As previously mentioned, we tested our hypotheses using three different time lags (1-year, 3-year, and 5-year), as shown in Figure 1. This is because temporal intervals are likely to play an important factor in predicting occupation type over time (Dormann & Griffin, 2015). Given socialization occurs quickly, we used the shortest interval available in the NZAVS (i.e., 1-year), whereas we used 3-year and 5-year lags to test potential reciprocal effects between occupational socialization and occupational assortment. Thus, we chose the most appropriate time lags based on data availability and the temporal evidence of socialization and assortment effects in the literature.

We tested our hypotheses using a series of Bayesian Structural Equation Models (BSEM) and the Gibbs sampler (Casella & George, 1992) using default settings in Mplus version 8.3, which includes non-informative (i.e., diffuse) priors (Múthen & Múthen, 1998-2017). We used BSEM given its computational advantages over other estimators such as maximum likelihood (ML) and weighted least squares adjusting for means and variances (WLSMV) when modeling categorical outcomes with latent continuous variables (Asparouhov & Múthen, 2010; Múthen, 2010; Múthen, Múthen, & Asparouhov, 2015). Notably, the estimates from BSEM are similar to—but more robust than—those from frequentist approaches that use null-hypothesis testing (i.e., ML; Yuan & MacKinnon, 2009). However, Bayes differs from ML by using probits instead of logits to estimate binary outcomes. Similar to ML, Bayes draws from all available data to generate its estimates (Múthen et al., 2015), which is a more optimal way of handling missing data than WLSMV which only uses pairs of variables to address missing data (Asparouhov & Múthen, 2010). Nevertheless, in large samples, the estimates obtained by Bayes when using diffuse priors should be comparable to ML-based estimates (see Múthen, 2010).

The Bayesian approach produces 95% credible intervals (95% CI), which reflect the upper and lower 2.5 percentiles in a posterior distribution (Múthen, 2010). In addition to 95% credible intervals, these analyses use one-sided *p*-values based on the posterior distribution to test the *direction* of an effect; whereby the *p*-value of a positive estimate reflects the proportion of the posterior distribution below zero, and the *p*-value of a negative estimate reflects the proportion of the posterior distribution above zero (Marsman & Wagenmakers, 2017, Múthen, 2010). For statistical inferences, we inspected whether the 95% CIs included zero, in conjunction with one-sided *p*-values to understand the probability of the direction of the effects observed (see Zyphur & Oswald, 2015). Finally, BSEMs produce posterior predictive *p*-values (PPP) to indicate overall model fit, with excellent fit indicated by values

close to 0.50 (Asparouhov & Muthen, 2012). However, recent evidence suggests that these estimates may be negatively affected by large sample sizes (Hoofs, van de Schoot, Jansen, & Kant, 2018). Therefore, although we report these values (see notes underneath Table 3), we focus on the parameter estimates for the path analyses reported below.

 Insert Table 3 around here

One-year interval (Time 5 - 6)

We first tested our hypothesis that working in a HE occupation would be associated with higher SDO over a one-year interval. Table 3 shows that occupation type was highly stable after one year ($b = 4.69$, posterior $SD = 0.16$, $\beta = 0.88$, 95% CI [4.37, 4.98], $p < .001$). Adjusting for the stability of occupation type, men had a higher probability of working in a HE occupation at Time 6 than did women ($b = 0.40$, posterior $SD = 0.17$, $\beta = 0.07$, 95% CI [0.06, 0.73], $p = .009$). However, neither age, ethnicity, RWA, extraversion, agreeableness, openness to experience, conscientiousness, neuroticism, income, nor SDO ($b = 0.20$, posterior $SD = 0.12$, $\beta = 0.06$, 95% CI [-0.08, 0.41], $p = .078$) had statistically significant associations with working in a HE occupation at Time 6 (i.e., one year later).

We also tested whether occupation type predicted SDO after one year. Our model demonstrated that SDO was highly stable over one year ($b = 0.88$, posterior $SD = 0.03$, $\beta = 0.84$, 95% CI [0.82, 0.93], $p < .001$). After controlling for this autoregressive pathway, RWA ($b = 0.14$, posterior $SD = 0.03$, $\beta = 0.12$, 95% CI [0.09, 0.20], $p < .001$) and conscientiousness ($b = 0.05$, posterior $SD = 0.02$, $\beta = 0.05$, 95% CI [0.01, 0.08], $p = .007$) were significantly positively associated with SDO one year later. However, neither age, gender, ethnicity, extraversion, agreeableness, openness to experience, neuroticism, nor income had statistically significant associations with SDO one year later. Crucially, our results showed that, after

adjusting for the control variables and the stability of SDO, working in a HE occupation had a small, albeit statistically significant, positive cross-lagged effect on SDO ($b = 0.05$, posterior $SD = 0.03$, $\beta = 0.03$, 95% CI [0.01, 0.11], $p = .018$). Thus, consistent with Hypothesis 2a, these results reveal an occupational socialization effect whereby working in a HE occupation is associated with higher SDO after one year.

Three-year interval (Times 5 - 8)

We next tested our hypotheses using a wider time interval (i.e., 3 years), and predicted that SDO would predict a greater probability of working in a HE occupation after three years and that working in a HE occupation would be associated with higher SDO over the same time period. As in the previous model, occupation type was highly stable over three years ($b = 4.31$, posterior $SD = 0.15$, $\beta = 0.82$, 95% CI [4.02, 4.63], $p < .001$). In terms of the control variables, income ($b = 0.39$, posterior $SD = 0.16$, $\beta = 0.09$, 95% CI [0.04, 0.66], $p = .015$), being a man ($b = 0.46$, posterior $SD = 0.17$, $\beta = 0.08$, 95% CI [0.16, 0.81], $p < .001$), and agreeableness ($b = 0.34$, posterior $SD = 0.16$, $\beta = 0.10$, 95% CI [0.05, 0.71], $p = .010$) were significantly associated with a higher probability of working in a HE occupation at Time 8. After adjusting for our control variables and the stability of occupation type, SDO at Time 5 had a significant positive cross-lagged effect on the probability of working in a HE occupation at Time 8 ($b = 0.32$, posterior $SD = 0.14$, $\beta = 0.10$, 95% CI [0.05, 0.63], $p = .010$). Hence, consistent with Hypothesis 1a, these results indicate that SDO is associated with a higher probability of working in a HE occupation after three years.

We also tested the reverse pathway. Once again, SDO was highly stable after three years ($b = 0.92$, posterior $SD = 0.03$, $\beta = 0.78$, 95% CI [0.86, 0.99], $p < .001$). However, only RWA ($b = 0.20$, posterior $SD = 0.03$, $\beta = 0.16$, 95% CI [0.14, 0.26], $p < .001$), being a man ($b = 0.07$, posterior $SD = 0.04$, $\beta = 0.04$, 95% CI [0.00, 0.14], $p = .024$), and conscientiousness ($b = 0.06$, posterior $SD = 0.02$, $\beta = 0.06$, 95% CI [0.02, 0.10], $p = .004$), were positively

associated with SDO at Time 8. Thus, contrary to Hypothesis 2b, our results showed that working in a HE occupation did *not* have a statistical significant cross-lagged effect on SDO after three years ($b = 0.05$, posterior $SD = 0.03$, $\beta = 0.03$, 95% CI $[-0.01, 0.11]$, $p = .061$).

Five-year interval (Time 5 - 10)

Finally, we tested our hypotheses using a five-year interval, again predicting reciprocal effects between occupation type and SDO. Consistent with the previous results, occupation type was stable after five years ($b = 3.81$, posterior $SD = 0.15$, $\beta = 0.82$, 95% CI $[3.55, 4.11]$, $p < .001$). Both age ($b = -0.01$, posterior $SD = 0.01$, $\beta = -0.04$, 95% CI $[-0.02, -0.00]$, $p = .014$) and RWA ($b = -0.31$, posterior $SD = 0.14$, $\beta = -0.10$, 95% CI $[-0.59, -0.08]$, $p = .007$) were significantly associated with a *decreased* probability of working in a HE occupation at Time 10, whereas none of the other control variables were significantly associated with occupation type in the same period. Most importantly, SDO at Time 5 had a significant positive cross-lagged effect on occupation type at Time 10 ($b = 0.34$, posterior $SD = 0.13$, $\beta = 0.11$, 95% CI $[0.10, 0.63]$, $p = .001$). Hence, consistent with Hypothesis 1b, these results indicate that SDO is associated with a higher probability of working in a HE occupation after five years.

We also tested whether occupation type predicted SDO after five years. Once again, SDO was highly stable over this period ($b = 0.83$, posterior $SD = 0.03$, $\beta = 0.74$, 95% CI $[0.76, 0.89]$, $p < .001$). RWA ($b = 0.19$, posterior $SD = 0.03$, $\beta = 0.16$, 95% CI $[0.13, 0.25]$, $p < .001$), being a man ($b = 0.19$, posterior $SD = 0.04$, $\beta = 0.10$, 95% CI $[0.12, 0.26]$, $p < .001$), age ($b = 0.00$, posterior $SD = 0.00$, $\beta = 0.03$, 95% CI $[0.00, 0.01]$, $p = .011$), agreeableness ($b = -0.10$, posterior $SD = 0.04$, $\beta = -0.09$, 95% CI $[-0.17, -0.03]$, $p = .003$), conscientiousness ($b = 0.04$, posterior $SD = 0.02$, $\beta = 0.04$, 95% CI $[0.00, 0.08]$, $p = .024$) and income ($b = -0.09$, posterior $SD = 0.03$, $\beta = -0.06$, 95% CI $[-0.14, -0.03]$, $p = .002$) were significantly associated with SDO five years later. None of the other control variables were

significantly associated with SDO at Time 10. After adjusting for these control variables and the stability of SDO, our results showed that working in a HE occupation had a significant positive cross-lagged effect on SDO five years later, which was consistent with Hypothesis 2c ($b = 0.07$, posterior $SD = 0.03$, $\beta = 0.04$, 95% CI [0.01, 0.13], $p = .016$).

Taken together, our results show that (a) working in a HE occupation was associated with higher SDO after one year, (b) SDO was associated with a higher probability of working in a HE occupation after three years (although we did not find evidence for the reverse pathway as expected), and (c) there were reciprocal associations between SDO and HE occupations over a five-year period.

DISCUSSION

In this study, we examined the longitudinal associations between SDO and occupation type using data from a nationwide sample of adults who were members of HE or HA occupations in New Zealand. Consistent with social dominance theory, our results suggest that sociopolitical fit occurs through reciprocal relationships between occupational assortment and occupational socialization. However, these two processes depend on specific time intervals. As expected, our findings indicate that occupational socialization may develop faster than occupational assortment, as working in a HE occupation was associated with higher SDO after only one year compared with working in a HA occupation. As expected, we found no support for higher SDO resulting in an increased chance of working in a HE occupation after one year. On the other hand, although we anticipated bidirectional associations after a three-year interval, we only found evidence for occupational assortment during this period. That is, SDO predicted a higher probability of working in a HE occupation, but working in a HE occupation was not associated with higher SDO after three years. Finally, we found evidence of a reciprocal association between SDO and occupation type over a longer period of five years. Table S4 in the Supplementary File shows the

predicted probability of switching occupation types. More specifically, irrespective of gender, the probability of switching from a HA occupation to a HE occupation three or five years later roughly doubled with each standard deviation increase in SDO, and these effects were approximately twice as strong for the men in our sample after three years. Likewise, higher SDO was associated with a decreased probability of switching from a HE to a HA occupation after three and five years. Further, working in a HE occupation was also associated with higher SDO one and five years later, with effect sizes (Cohen's *d*) of 0.06 and 0.08, respectively (Table S4). Although one of our sub-hypotheses was not supported, the broader pattern of these findings indicates that (a) people are sorted into occupations that match their preferences for intergroup hierarchies over longer periods and (b) the norms of a HE occupation may socialize anti-egalitarian beliefs amongst its members over both shorter and longer periods.

Theoretical and Practical Implications

This study adds to the literature by providing the first empirical test of the longitudinal associations between SDO and occupation type using a nationwide sample of adults working in a wide range of HE and HA occupations. Although the pioneering work by Holland (1959) argues that occupations may be an expression of people's personality or values, the present findings demonstrate that fit may also be a product of people's sociopolitical attitudes, including their intergroup beliefs (Haley & Sidanius, 2005). These findings extend our understanding of how sociopolitical fit occurs between people and their occupations by demonstrating both occupational assortment and occupational socialization among adults already in the course of their careers. Given that occupations are aggregates of individuals, these associations may be largely recursive (Holland, 1959; Schneider, 1987). That is, people are attracted to, and selected into, HE occupations partly based on their SDO. However, occupational directives and norms are usually pre-existing structures. As such,

people may also be socialized by institutional norms, experiencing a gradual drift toward higher anti-egalitarianism throughout their tenure. Irrespective of which process comes first, this cycle may become self-perpetuating over time (e.g., Schneider, 1987).

The present findings also have important practical implications. The bidirectional nature of the relationships between SDO and HE occupations should concern practitioners who seek to create workplaces that redress social inequality, which is becoming increasingly important in public discourse and amongst institutions seeking to mitigate reputational harm (Bapuji et al., 2020). Notably, management scholars have long recognized that SDO is linked to a number of detrimental work outcomes, including unethical decision-making (Son Hing et al., 2007), hiring discrimination (Umphress et al., 2008), and abusive supervision (Khan et al., 2018). Moreover, occupational entities not only have the potential to influence social hierarchies *within* their ranks (e.g., hiring discrimination that creates occupational segregation [Pratto et al., 1997]), but also for the customer bases they serve (King, Shapiro, Hebl, Singletary, & Turner, 2006). Some examples of these include racial, ethnic, and gender biases in mortgage lending (e.g., Houkamau & Sibley, 2015; Robinson, 2002), insurance criteria and claims (e.g., Bradford, Reisner, Honnold, & Xavier, 2013), and rental leases (e.g., Carpusor & Loges, 2006). Put simply, occupations provide a platform to enact, or challenge, anti-egalitarian beliefs and actions.

In light of our findings, practitioners should endeavor to tackle anti-egalitarian norms and behavior within their workplaces. Although we found that SDO was significantly associated with increases in the probability of working in a HE occupation after three and five years (i.e., an occupational assortment effect), only a small number of people switched occupation type over time. However, a small number of individuals can, and do, have an outsized negative (or positive) effect on occupational norms (e.g., “bad apples” versus “bad barrels”; Dunlop & Lee, 2004; Kish-Gephart, Harrison, Treviño, 2010), especially if they are

in positions of leadership (Cialdini, Li, Samper, & Wellman, 2019). Indeed, recent research shows that most instances of discrimination on university campuses originate from only a small number of students, even though this has a corrosive effect (Campbell & Brauer, 2020). Thus, when making hiring decisions, practitioners may want to consider individuals lower on SDO, particularly if they apply for positions where they wield influence over others in the work environment.

The low base rate at which people changed their occupation type also means that occupational environments have more opportunities to socialize (anti)egalitarian beliefs amongst their members. This may become more pronounced as the ongoing coronavirus pandemic limits people's occupational choices and, as a result, may not be able to choose work environments that resonate with their sociopolitical beliefs (Carnevale & Hatak, 2020). Given our findings of occupational socialization at both shorter and longer intervals (1 and 5 years, respectively), tackling the aggregate effects of occupational socialization is more likely to make a substantive difference than would screening out individuals who are high on SDO (Haley & Sidanius, 2005). Evidence for viable solutions shows that simple directives to stick to fair decision criteria may lessen the impact of SDO on, for example, selection discrimination (Umphress et al., 2008). Extrapolating from this point, occupations should develop processes and structures to ensure they treat both colleagues and wider society in a fair manner. This is particularly important for institutions that rely on public and consumer trust to achieve their mission effectively (Tyler, 2006). However, more research investigating ways to combat anti-egalitarian norms and behaviors in the workplace is needed to develop targeted interventions to this problem.

Finally, the nature of these occupational distinctions is not static and can change over time (albeit incrementally) with concerted efforts. An example of this is the education sector: in Western societies just over a century ago, education was arguably an institution that

enhanced (rather than mitigated) disparities between social groups, as those who were lower socio-economic status, ethnic minorities, and women were generally excluded from institutions of higher learning (Lucas, 2016). Although there are still issues of accessibility in the this sector today, higher education is more open to different groups, especially in societies where it is financially subsidized (e.g., in New Zealand where the current study is situated) or free under certain citizenship conditions (e.g., Denmark). The good news is that the occupational socialization effect found in this study implies that incumbents will also be responsive to more *egalitarian* occupational norms (i.e., decrease in SDO over time). Therefore, with practitioners' efforts, the norms of an occupation can transform it from one that enhances inequities between social groups to one that actively mitigates these differences.

Limitations and Future Research

The use of a large, national sample that examines both HE and HA occupations lends high external validity to our study. That the associations between SDO and occupation type emerged with both the inclusion of crucial covariates (age, gender, ethnicity, income, RWA, and Big Five personality traits) and their exclusion suggests our results are not affected by systematic variability (e.g., Weston et al., 2019). Despite these strengths, there are some notable limitations to our study. First, our measures only capture broad occupational assortment and occupational socialization processes. Specifically, we could not extract the unique occurrences of self-selection, occupational selection, or differential attrition in these data (van Laar et al., 1999). Nor could we identify the particular factors that contribute to occupational socialization, including the SDO of peers or supervisors, incentive structures, or different levels of abstraction such as the organizational structure (e.g., Bauer & Green, 1998; Kim, Cable, & Kim, 2005). However, our study provides the foundations upon which future research can build to assess the intra-institutional factors that facilitate the sociopolitical fit.

Second, though unsurprising given the labor market in New Zealand (Statistics New Zealand, 2018), occupation type was highly stable amongst participants as evidenced by the low base rate of switching between HE and HA occupations. This may have made it difficult to detect occupational assortment. Indeed, meta-analytic data showing weak to modest correlations between misfit and turnover suggests that people will often stay with their institutions even when mismatched (Verquer, Beehr, & Wagner, 2003), as there are myriad reasons for why people remain in an occupation (e.g., Cooper-Thomas & Wright, 2013). That we still found evidence of occupational assortment in our sample is compelling, given that a mismatch between people and their occupation is likely a relatively common phenomenon that does not necessarily result in turnover (Vogel et al., 2016). Indeed, our data suggest that SDO is a key intergroup belief that predicts working in occupations more congruent with people's orientations toward hierarchy between groups of people. However, as the effect of misfit is relatively under-researched (Sidanius et al., 2017), these are important questions that should be addressed in future studies.

Third, it should be noted that we extracted a sample of participants who were *already* working in either HE or HA occupations. As such, this study cannot generalize its findings to initial occupational assortment or occupational socialization, for example, amongst students graduating from university and moving into their first career occupation. This may be important, as it is possible that sociopolitical beliefs such as SDO may not be a mechanism for occupational fit in initial vocation choice, although prior research amongst university students' professional preferences provides some evidence that it does play a role (e.g., Sidanius et al., 2003). Nevertheless, age may be an important moderator of the associations between SDO and occupation type. According to the impressionable years hypothesis (e.g., Osborne, Sears, & Valentino, 2011), people's sociopolitical attitudes are most malleable in late adolescence and early adulthood. This suggests that the occupational socialization effects

we identify here may be *stronger* for younger participants. Further, as people age and their economic and familial responsibilities increase, other factors of an occupation, such as flexibility, remuneration, location, may become more integral to occupational assortment than a general preference for social hierarchy. However, because sociopolitical attitudes crystallize as people age (e.g., Henry & Sears, 2009), socialization effects may conversely be stronger amongst older workers who have stayed in their occupations. Given these conflicting possibilities, future research will need to examine the potential moderating effects of age on the associations reported in the current study.

Fourth, the effect sizes for our focal relationships of interest are modest. Yet, methodologists have argued that small effect sizes derived from large samples—especially when controlling for other variables—should be normalized, given that complex phenomena are usually multidetermined (Adachi & Willoughby, 2015; Götz et al., in press). Moreover, small margins can ultimately yield large differences in outcomes. For example, even a handful of individuals higher in SDO within an occupational environment may be disruptive to colleagues (e.g., Khan et al., 2018). Further, given that occupations are governed by their own norms (Cohn et al., 2014), they have the potential not only to impact social disparities within their ranks, but also the way they deploy resources to wider society (Vallas & Cummins, 2014). If SDO becomes gradually elevated over the tenure of working in an HE occupation, incumbents may begin making resourcing decisions that differentially discriminate against groups of people (e.g., Umphress et al., 2007). As such, small effect sizes can be socially meaningful when aggregated over large populations, particularly if they also accumulate over time (Greenwald, Banaji, & Nosek, 2015; Ofori, Chambers, Chen, & Hehman, 2019). Although subtle, the cumulative effects of even small acts can perpetuate intergroup inequality in profound ways.

Finally, although longitudinal data are critical for establishing the temporal order of variables that are difficult to manipulate, causal inferences from a single study based on survey data should be made with caution. However, we believe that using survey data outside of student samples and artificial lab environments is a notable strength of the study because it is unfeasible to pursue randomized experiments based on SDO and occupation type without using proxy manipulations with low external validity (Rohrer, 2018). Nevertheless, consensus on these questions will be best served by evidence accrued through diverse research methods and over long periods (Weston et al., 2019). By testing the bidirectional relationships between SDO and occupation type using these data, we view our study as one integral piece of a larger literature.

Conclusion

Social dominance theory argues that people's SDO should correspond to the hierarchy-relevant nature of their occupations, and that this sociopolitical fit occurs through both occupational assortment and occupational socialization. To date, no study has examined these associations amongst a range of occupations that use longitudinal data from a nationwide sample of adults already in the course of their careers. We addressed these gaps by using data from a longitudinal nationwide random sample of adults to test whether SDO predicted increases in the probability of working in a HE occupation over one, three, and five years, and, conversely, whether working in a HE occupation resulted in higher SDO over these same periods. We found support for a reciprocal relationship between occupational assortment and occupational socialization. Collectively, our results demonstrate the power of occupations to shape—and be shaped by—intergroup beliefs such as SDO.

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Table 1.
Descriptive Statistics and Bivariate Correlations for the Studied Variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Age _{T5}	47.70	11.91																		
2. Gender _{T5}	0.28	0.45	.09**																	
3. NZ European/Pākehā _{T5}	0.80	0.40	.11**	.03																
4. Income _{T5}	\$65,908	\$55,876	.11**	.32**	.09**															
5. RWA _{T5}	3.33	1.11	.10**	-.07**	-.18**	-.10**														
6. Extraversion _{T5}	4.11	1.15	-.08**	-.01	-.02	.06**	-.05**													
7. Agreeableness _{T5}	5.48	0.90	.01	-.25**	.07**	-.11**	-.02	.16**												
8. Conscientiousness _{T5}	5.14	1.01	.05**	-.05**	-.05**	.04*	.12**	.03*	.09**											
9. Neuroticism _{T5}	3.42	1.08	-.16**	-.15**	-.00	-.12**	.00	-.14**	-.03**	-.14**										
10. Openness _{T5}	4.96	1.09	-.07**	.06**	.01	.05**	-.24**	.24**	.24**	-.04**	-.07**									
11. HE Occupation _{T5}	0.37	0.48	-.04**	.34**	.06**	.33**	-.06**	.07**	-.18**	.01	-.07**	.00								
12. HE Occupation _{T6}	0.34	0.47	-.05**	.35**	.04*	.35**	-.05**	.06**	-.20**	.01	-.06**	-.02	.98**							
13. HE Occupation _{T8}	0.33	0.47	-.03	.36**	.07**	.36**	-.06**	.07**	-.19**	.00	-.05**	-.03	.97**	.97**						
14. HE Occupation _{T10}	.033	0.47	-.03	.36**	.07**	.35**	-.06**	.04*	-.18**	-.01	-.03	-.02	.94**	.95**	.98**					
15. SDO _{T5}	2.25	0.85	.07**	.16**	-.04*	.11**	.18**	-.00	-.28**	.00	-.01	-.17**	.20**	.21**	.23**	.23**				
16. SDO _{T6}	2.25	0.86	.10**	.18**	-.04*	.12**	.23**	-.01	-.27**	.04*	-.01	-.18**	.19**	.20**	.22**	.19**	.70**			
17. SDO _{T8}	2.28	0.93	.12**	.19**	-.06**	.10**	.26**	-.03	-.27**	.06**	-.01	-.18**	.20**	.21**	.21**	.21**	.67**	.74**		
18. SDO _{T10}	2.23	0.92	.12**	.23**	-.07**	.09**	.23**	-.05**	-.29**	.03	-.02	-.17**	.22**	.21**	.22**	.21**	.64**	.71**	.78**	
<i>n</i>			5298	5298	5077	4645	5299	5200	5199	5199	5198	5199	5301	3685	2992	2522	5299	4411	3848	3452
<i>α</i>							.70	.75	.67	.67	.70	.70					.70	.73	.79	.78

** $p < .001$, * $p < .05$. Gender = (0 = Women; 1 = Men), NZ European/Pākehā = (0 = Ethnic minority; 1 = NZ European/Pākehā), HE Occupation = (0 = Hierarchy-attenuating; 1 = Hierarchy-enhancing), SDO = Social dominance orientation; RWA = Right-wing authoritarianism.

Table 2.
Measurement Models for Social Dominance Orientation Times 5, 6, 8, and 10

Model	χ^2	<i>df</i>	<i>p</i>	CFI	RMSEA	95%RMSEA	SRMR
Model 1	1347.37	210	< .001	.949	.043	[.041, .045]	.078
Model 2	327.98	188	< .001	.994	.016	[.013, .019]	.021
Model 3	948.66	186	< .001	.966	.037	[.035, .040]	.055
Model 4	1078.21	198	< .001	.960	.039	[.037, .041]	.058
Model 5	1193.26	198	< .001	.955	.041	[.039, .044]	.076
Model 6a	287.02	175	< .001	.995	.015	[.012, .018]	.015
Model 6b	948.61	186	< .001	.966	.037	[.035, .040]	.055
Model 7	423.74	192	< .001	.990	.020	[.018, .023]	.040
Model 8	321.55	192	< .001	.994	.015	[.012, .018]	.021

N = 2,926. All measurement models were conducted using full information maximum likelihood with robust estimation.

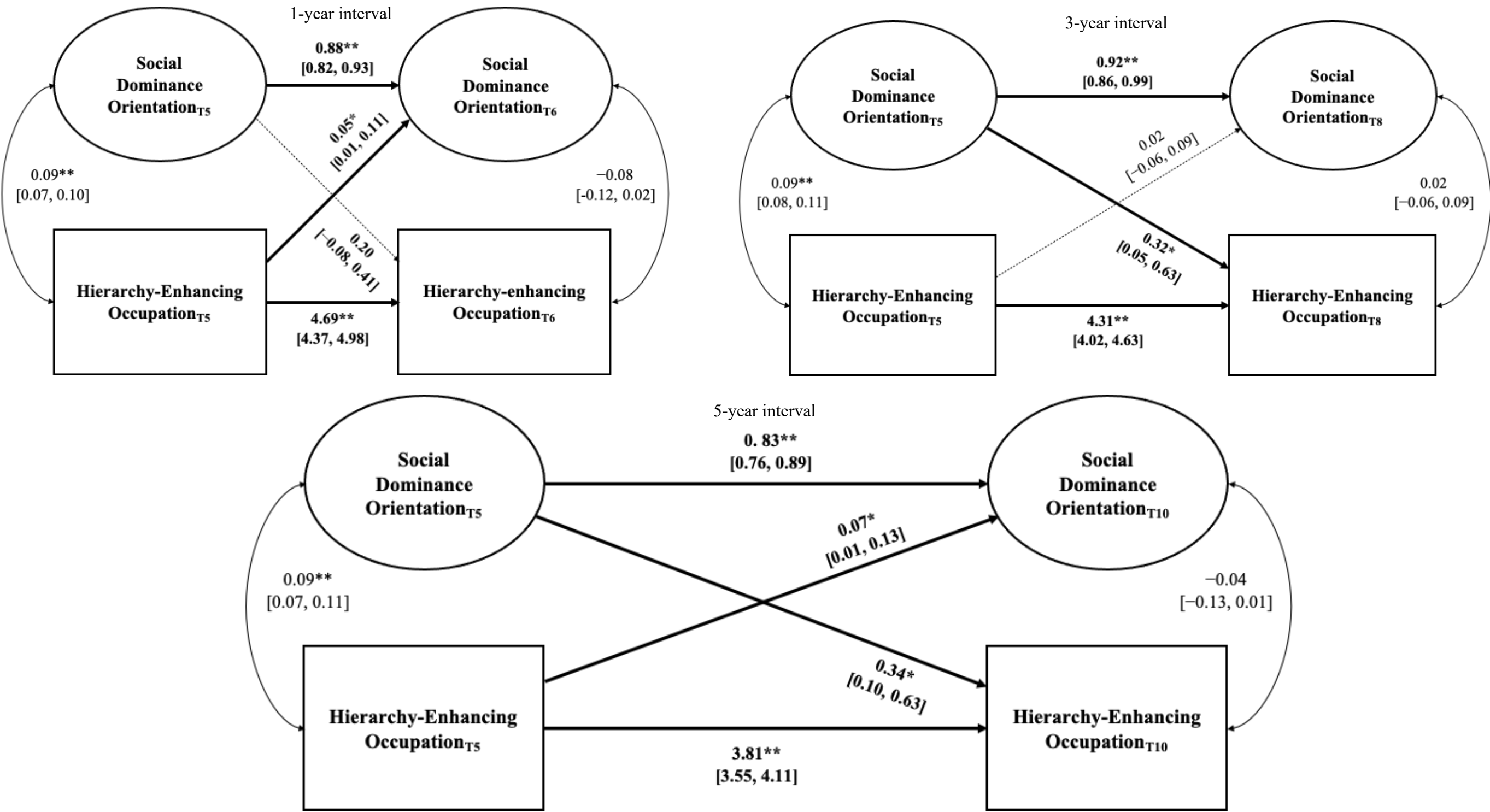
Model 1 = SDO as a unidimensional construct; Model 2 = SDO as two trait factors; Model 3 = SDO as one trait factor with correlated residuals for positive and negative items; Model 4 = SDO as one trait factor with correlated residuals for positive items only; Model 5 = SDO as one trait factor with correlated residuals for negative items only; Model 6a = SDO as one trait factor with positive and negative latent methods factors but constraining the covariances between the negative latent methods factors to equality (due to non-convergence); Model 6b = one trait factor with positive and negative latent methods factors but fixing the covariances between positive/negative latent methods factors to zero (due to nonconvergence); Model 7 = SDO as one trait factor with positive methods factor only; Model 8 = SDO as one trait factor with negative methods factor only. Besides Model 6b, we allowed congeneric methods factors to covary. In all models, we allowed the residuals for congeneric items across time to correlate.

Table 3.
Structural Equation Models for Different Time Lags

	Hierarchy-Enhancing Occupation					Social Dominance Orientation				
	B	Post. SD	β	95% CI	p	B	Post. SD	β	95% CI	p
One-year interval (Time 5 - 6) <i>N</i> = 4,412										
HE Occupation _{T5}	4.69	0.16	0.88	[4.37, 4.98]	< .001	0.05	0.03	0.03	[0.01, 0.11]	.018
SDO _{T5}	0.20	0.12	0.06	[−0.08, 0.41]	.078	0.88	0.03	0.84	[0.82, 0.93]	<.001
Age _{T5}	−0.01	0.01	−0.04	[−0.02, 0.00]	.043	0.00	0.00	0.02	[0.00, 0.00]	.043
Gender _{T5}	0.40	0.17	0.07	[0.06, 0.73]	.009	0.07	0.03	0.04	[0.00, 0.13]	.025
NZ European/Pākehā _{T5}	−0.21	0.18	−0.03	[−0.54, 0.11]	.113	0.04	0.03	0.02	[−0.03, 0.10]	.145
RWA _{T5}	−0.18	0.13	−0.05	[−0.44, 0.05]	.063	0.14	0.03	0.12	[0.09, 0.20]	<.001
Extraversion _{T5}	0.11	0.09	0.04	[−0.08, 0.28]	.114	0.00	0.02	0.00	[−0.03, 0.03]	.435
Conscientiousness _{T5}	0.11	0.12	0.03	[−0.11, 0.34]	.189	0.05	0.02	0.05	[0.01, 0.08]	.007
Agreeableness _{T5}	0.16	0.18	0.04	[−0.17, 0.52]	.176	−0.03	0.03	−0.03	[−0.09, 0.02]	.119
Neuroticism _{T5}	0.08	0.10	0.03	[−0.10, 0.27]	.191	0.03	0.02	0.03	[−0.01, 0.06]	.091
Openness _{T5}	−0.16	0.13	−0.06	[−0.39, 0.17]	.133	−0.01	0.02	−0.01	[−0.05, 0.03]	.294
Income _{T5}	0.03	0.14	0.01	[−0.25, 0.32]	.424	0.02	0.03	0.02	[−0.03, 0.08]	.027
Three-year interval (Time 5 - 8) <i>N</i> = 3,849										
HE Occupation _{T5}	4.31	0.15	0.82	[4.02, 4.63]	< .001	0.05	0.03	0.03	[−0.01, 0.11]	.061
SDO _{T5}	0.32	0.14	0.10	[0.05, 0.63]	.010	0.92	0.03	0.78	[0.86, 0.99]	< .001
Age _{T5}	−0.01	0.01	−0.02	[−0.02, 0.01]	.141	0.00	0.00	0.02	[−0.02, 0.00]	.087
Gender	0.46	0.17	0.08	[0.16, 0.81]	< .001	0.07	0.04	0.04	[0.00, 0.15]	.024
NZ European/Pākehā _{T5}	0.06	0.17	0.01	[−0.28, 0.40]	.368	−0.03	0.04	−0.01	[−0.11, 0.04]	.196
RWA _{T5}	−0.23	0.12	−0.07	[−0.47, 0.01]	.033	0.20	0.03	0.16	[0.14, 0.26]	< .001
Extraversion _{T5}	0.16	0.09	0.06	[−0.01, 0.35]	.029	−0.00	0.02	−0.00	[−0.04, 0.03]	.477
Agreeableness _{T5}	0.34	0.16	0.10	[0.05, 0.71]	.010	−0.05	0.04	−0.04	[−0.12, 0.02]	.076
Openness _{T5}	−0.21	0.13	−0.07	[−0.43, 0.09]	.073	0.02	0.02	0.02	[−0.03, 0.06]	.217
Conscientiousness _{T5}	−0.04	0.10	−0.01	[−0.26, 0.16]	.339	0.06	0.02	0.06	[0.02, 0.10]	.004
Neuroticism _{T5}	0.04	0.09	0.01	[−0.13, 0.22]	.352	0.03	0.02	0.03	[−0.01, 0.07]	.059
Income _{T5}	0.39	0.16	0.09	[0.04, 0.66]	.015	0.00	0.03	0.00	[−0.05, 0.06]	.435
Five-year interval (Time 5 - 10) <i>N</i> = 3,452										
HE Occupation _{T5}	3.81	0.15	0.82	[3.55, 4.11]	< .001	0.07	0.03	0.04	[0.01, 0.13]	.016
SDO _{T5}	0.34	0.13	0.11	[0.10, 0.63]	.001	0.83	0.03	0.74	[0.76, 0.89]	< .001
Age _{T5}	−0.01	0.01	−0.04	[−0.02, −0.00]	.014	0.00	0.00	0.03	[0.00, 0.01]	.011
Gender _{T5}	0.19	0.15	0.04	[−0.09, 0.47]	.094	0.19	0.04	0.10	[0.12, 0.26]	< .001
NZ European/Pākehā _{T5}	0.08	0.16	0.01	[−0.23, 0.38]	.315	−0.04	0.04	−0.02	[−0.12, 0.04]	.140
RWA _{T5}	−0.31	0.14	−0.10	[−0.59, −0.08]	.007	0.19	0.03	0.16	[0.13, 0.25]	< .001
Extraversion _{T5}	0.01	0.08	0.00	[−0.13, 0.17]	.450	−0.01	0.02	−0.01	[−0.05, 0.03]	.309
Agreeableness _{T5}	0.15	0.16	0.05	[−0.15, 0.48]	.155	−0.10	0.04	−0.09	[−0.17, −0.03]	.003
Openness _{T5}	0.04	0.10	0.02	[−0.16, 0.24]	.333	0.03	0.02	0.04	[−0.01, 0.08]	.084
Conscientiousness _{T5}	−0.01	0.09	−0.00	[−0.19, 0.17]	.453	0.04	0.02	0.04	[0.00, 0.08]	.024
Neuroticism _{T5}	−0.02	0.08	−0.01	[−0.17, 0.14]	.404	0.01	0.02	0.01	[−0.03, 0.04]	.399
Income _{T5}	0.18	0.15	0.04	[−0.10, 0.49]	.104	−0.09	0.03	−0.06	[−0.14, −0.03]	.002

Estimated using Bayesian Structural Equation. Significant effects shown in bold. *B* = unstandardized coefficients, *Post. SD* = posterior standard deviation, β = standardized coefficient, *95% CI* = unstandardized 95% credible interval, *p* = one-sided *p*-value. 1-year interval model: posterior predictive *p*-values (*ppp*) < .001; 95% CI for observed and replicated χ^2 = [3874.37, 4024.04], 3-year interval model: *ppp* < .001; 95% CI for observed and replicated χ^2 = [3402.22, 3560.60], 5-year interval model: *ppp* < .001; 95% CI for observed and replicated χ^2 = [2927.81, 3104.06]. HE = Hierarchy-enhancing, SDO = social dominance orientation, RWA = right-wing authoritarianism.

Figure 1.
Cross-Lagged Panel Analysis of the Associations Between Social Dominance Orientation and Hierarchy-Enhancing Occupations at Different Time Lags



Estimated using Bayesian Structural Equation. Unstandardized Regression Coefficients shown. Significant paths shown in bold. Non-significant paths denoted by the dashed line. These results also account for age, gender, ethnic majority status, RWA, Big Five personality traits, and income at Time 5. Sample sizes: $N = 4,412$ (Times 5 & 6), $N = 3,849$ (Times 5 & 8), and $N = 3,452$ (Times 5 & 10). ** $p < .001$, * $p < .05$