

The Mutual Constitution of Culture and Psyche: The Bidirectional Relationship Between Individuals' Perceived Control and Cultural Tightness–Looseness

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According to the theory of mutual constitution of culture and psyche, just as culture shapes people, individuals' psychological states can influence culture. We build on compensatory control theory, which suggests that low personal control can lead people to prefer societal systems that impose order, to examine the mutual constitution of personal control and cultural tightness. Specifically, we tested whether individuals' lack of personal control increases their preference for tighter cultures as a means of restoring order and predictability, and whether tighter cultures in turn reduce people's feelings of personal control. Seven studies (five preregistered) with participants from the United States, Singapore, and China examine this cycle of mutual constitution. Specifically, documenting the correlational link between person and culture, we found that Americans lower on personal control preferred to live in tighter states (Study 1). Chinese employees lower on personal control also desired more structure and preferred a tighter organizational culture (Study 2). Employing an experimental causal chain design, Studies 3–5 provided causal evidence for our claim that lack of control increases desire for tighter cultures via the need for structure. Finally, tracing the link back from culture to person, Studies 6a and 6b found that whereas tighter cultures decreased perceptions of individual personal control, they increased people's sense of collective control. Overall, the findings document the process of mutual constitution of culture and psyche: lack of personal control leads people to seek more structured, tighter cultures, and that tighter cultures, in turn, decrease people's sense of personal control but increase their sense of collective control.

Keywords: perceived control, tightness–looseness, need for structure, mutual constitution, culture

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The theory of mutual constitution of culture and psychology argues that whereas culture shapes individuals' cognition, emotion, motivation, and behavior, individuals' psychological states can also shape cultural patterns and characteristics (Adams & Markus, 2004; Fiske et al., 1998). Although extensive research has examined the

first half of this proposition (Cohen & Kitayama, 2007), less research has empirically investigated the influence of individuals' psychological states on broader cultural patterns (for notable exceptions, see Kashima, 2000; Kitayama et al., 1997; Morling & Lamoreaux, 2008; Salter et al., 2018). More importantly, virtually

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no research to our knowledge has examined the full cycle of the mutual constitution of culture and psyche in the same article.

The first phase of research in cross-cultural psychology focused on a key dimension across which cultures vary—*independent versus interdependent self-construal* (Markus & Kitayama, 1991) and *individualism versus collectivism* (Triandis, 1989). Another dimension that has attracted much recent attention is *tightness–looseness* (Gelfand et al., 2011; Triandis, 1996). Whereas tight societies (e.g., Pakistan, Singapore) have strong norms and a low tolerance for deviance from the norm, loose societies (e.g., Ukraine, USA) have weak norms and are more likely to tolerate norm-violating behaviors (Gelfand et al., 2011). An extensive program of research by Gelfand et al. has demonstrated that cross-cultural tightness predicts a range of psychological outcomes, such as prevention focus, self-regulation strength, self-monitoring (Gelfand et al., 2011), preferences for autonomous leadership (Aktas et al., 2016), propensity to engage in convergent thinking (Chua et al., 2015), religious beliefs and practices (Caluori et al., 2020; Jackson, Caluori, Abrams, et al., 2021, Jackson, Caluori, Gray, et al., 2021), and strength of electroencephalography (EEG) reactions to norm violations (Mu et al., 2015).

Differences in cultural tightness–looseness are theorized to be caused by the presence of external threats (e.g., war, natural disasters, pathogen load, or “top-down” processes) and reinforced by variation in psychological tendencies within cultures (i.e., “bottom-up,” processes; Gelfand et al., 2011; Triandis, 1972). However, although the role of such “bottom-up” processes in which individual-level characteristics shape cultural differences has been theorized, they have not yet been examined empirically.

To address this gap, we draw on compensatory control theory (Kay et al., 2008; Landau et al., 2015) to investigate a novel antecedent of tight cultures: individuals’ perceptions of personal control. Specifically, we seek to uncover the bidirectional relationship between the psyche and culture in the domain of personal control and cultural tightness. We test whether individuals’ lack of personal control can increase their preference for tighter cultures as a means of restoring order and predictability, and whether being in a tight culture can then further constrain an individual’s personal control. We also test if this bidirectional relationship also comes with some psychological benefits, as people in tighter cultures may experience an increased sense of collective control. Interdependent collective action can often help groups achieve goals that individuals may not otherwise be capable of attaining alone, and due to the increased social coordination afforded by tight cultural groups, we test whether tight cultures can bolster people’s sense of collective control (Bandura, 2000; Fritsche et al., 2008, 2013; Greenaway et al., 2015).

Taken together, these relationships suggest a mutually reinforcing relationship between personal control and cultural tightness, such that people experience less personal control and more collective control as cultures become tighter over time. Our model can thus provide a theoretical account for the persistence of cultural differences in personal and collective control and tightness–looseness over time.

The Cycle of Mutual Constitution and Cultural Tightness–Looseness

Thus far, one view of culture is that it is a relatively independent, stable system of shared meanings that structures human experience (for a review, see Kashima, 2000). In contrast, influenced by

sociologists and anthropologists such as Bourdieu (1977) and Giddens (1979), another school of thought argues that macrolevel cultural characteristics and structure influence people’s cognitive, emotional, motivational, and behavioral functioning, which in turn produce and reproduce these sociocultural environments (Adams & Markus, 2001; Fiske et al., 1998; Kashima, 2000). This idea is described in Shweder’s (1991, p. 24) memorable phrase: “culture and psyche make each other up.”

Several lines of research have demonstrated this mutual constitution process by documenting the interrelationship between psychological tendencies and cultural products (Morling & Lamoreaux, 2008), interpersonal situations (Kitayama et al., 1997; Morling et al., 2002; Savani et al., 2011), and shared narratives (Kashima, 2000, 2001; Kashima et al., 2018, 2019; Kashima & Kashima, 1998). Recent research has documented the role of mutual constitution processes in perpetuating racial disparities (Salter et al., 2018). For example, White Americans prefer relatively less critical representations of Black history from majority White schools over more critical representations of Black history from predominantly Black schools. This suggests that White Americans select certain historical narratives over others, thereby perpetuating racial inequality (Salter & Adams, 2016).

Despite the above exceptions, most research in cultural psychology separates the mutual constitution process. Researchers tend to focus either on how psychological tendencies vary across cultures, thereby examining the influence of culture on the psyche (e.g., Nisbett et al., 2001), or on how products vary by culture, thereby examining the influence of the psyche on culture (Morling & Lamoreaux, 2008), but rarely examining both processes simultaneously.

Cultural Tightness

In the current research, we sought to investigate the bidirectional relationship between culture and psyche in a new domain—perceived control and cultural tightness. The concept of tight cultures was first developed in the 60s in a study of traditional societies (Pelto, 1968). Some societies (e.g., the Azande of Central Africa) possessed strong norms and imposed severe punishments on those who deviated from norms. In contrast, other societies (e.g., the Kung Bushman of South Africa) had weak norms and allowed people to violate norms without punishment. Since then, this construct has also been applied to modern societies (Gelfand et al., 2006, 2011; Triandis, 1989).

Researchers have suggested that tighter cultures evolved to allow people to effectively overcome societal threats. For example, Pelto (1968) argued that tightness–looseness originated as an ecological adaptation to the environment, such as population density and dependency on uncertain harvests. Triandis (1989) suggested that geographically isolated cultures (e.g., Japan) tend to be homogenous and tight; in contrast, cultures that are centrally located (e.g., Thailand) are more likely to be exposed to different practices and behaviors from neighboring locales, and thus tend to be loose so that they can mitigate the threat of social conflict and instability arising from cultural diversity. The notion that tighter cultures developed as an adaptive response toward mitigating ecological and historical threats received empirical support—tighter nations tended to have higher population density, scarce natural resources, and suffer more natural disasters (Gelfand et al., 2011).

Scholars have also argued that tightness might also be reinforced by bottom-up processes through which individuals in a culture can

shape cultural patterns and practices at the societal level (Gelfand et al., 2006, 2011). For example, people who chronically experience a sense of uncertainty might prefer cultures with strong norms so that they can reduce their sense of uncertainty (Aktas et al., 2016). However, limited research has tested for the existence of such bottom-up processes. We sought to address this gap by providing evidence for a bidirectional relationship between personal control at the individual level and tightness–looseness at the societal level.

Personal Control Shapes Cultural Tightness–Looseness

We first consider how the personal control dimension of the psyche influences the tightness dimension of culture. To do so, we draw on compensatory control theory, which was conceived partly to explain the existence of variations in personal control both within as well as between cultures, even though control has been posited as a fundamental human need (Kay et al., 2008; Presson & Benassi, 1996; Seligman, 1975). Recent theoretical innovations in compensatory control theory suggest that the search for nonepistemic structure, or “interpretations of one’s social and physical environments as simple (vs. complex), clear (discernable; not hidden or obscure, vague or ambiguous), and consistent (stable as opposed to erratic; marked by a coherent relation of parts vs. disordered)” (Landau et al., 2015, p. 694) might be appealing when people lack control. A lack of personal control increases people’s preference for various forms of nonspecific epistemic structure, including social hierarchy (Friesen et al., 2014), and leads them to perceive connections between unrelated events (Ma et al., 2017; Whitson & Galinsky, 2008; for other examples, see Landau et al., 2015, for a review). Thus, consistent with compensatory control theory, we predict that those with lower personal control would desire greater structure.

Although most research on compensatory control theory has been conducted in North American cultural settings, there is reason to believe that key tenets of the theory generalize across cultures. For instance, predictions of compensatory control theory have been validated in the context of the 2008 Malaysian general election (Kay et al., 2010). Similarly, across countries, lower personal control was associated with greater confidence in the government (Kay et al., 2008, Study 3), as well as a greater tendency to seek structure and endorse simple characterizations of various social groups (i.e., to stereotype; Ma et al., 2019, Study 1).

Thus far, the theory of cultural tightness–looseness and compensatory control theory have been studied in separate literature. However, we propose that the two theories are related in that the strength of social norms—a core feature of tight cultures—gives people a simple and coherent interpretation of the world and thus could be considered a form of epistemic structure. As strong norms both guide people’s own behaviors and allow them to predict others’ behaviors, they can provide a significant source of order and predictability in everyday social life (Gelfand et al., 2011). Thus, we predict that to the degree tight cultures are seen as conferring order and predictability, when people lack control and desire structure, they may come to prefer tighter cultures.

Indeed, consistent with our idea, past research has found a positive association between the need for structure and tightness at the country level (Gelfand et al., 2011). However, this evidence is largely correlational in nature, and thus cannot speak to the causal directionality between need for structure and preference for tight

cultures. We propose that the need for structure is a mediator that captures the compensatory control process linking low perceived control to the preference for tighter cultures. Put formally, we predict that:

Hypothesis 1: People who perceive low personal control prefer tighter cultures.

Hypothesis 2: People who perceive low personal control have a higher need for structure.

Hypothesis 3: People who have a higher need for structure prefer tighter cultures.

Hypothesis 4: The relationship between perceived personal control and preference for tighter cultures is mediated by a higher need for structure.

Tightness–Looseness Shapes Personal and Collective Control

We next consider how tighter cultures might influence people’s sense of control. Control theorists have long noted that there are multiple ways of attaining a sense of control (Rothbaum et al., 1982). One notable distinction is between personal control and collective control (Morling & Evered, 2006). Whereas personal control is defined as whether individuals perceive that they have control over the means needed to achieve valued goals, collective control is defined as whether people believe that they can achieve shared goals via collective action (also referred to as *communal mastery* or *collective efficacy*; Bandura, 1997; Morling & Evered, 2006; Yamaguchi, 2001). We theorize that tight cultures have divergent influences on people’s perceptions of personal and collective control.

We first consider how tight cultures influence personal control. By definition, tight cultures limit how individuals can act in various social situations—individuals’ behaviors are circumscribed by prevalent norms, and deviations from norms are punished. For example, Gelfand et al. (2011) found that, in tighter cultures, a narrower range of behaviors is deemed appropriate in a wide range of social situations. The constraints on individual behavior associated with tight cultures can reduce people’s sense of personal control, which would suggest a cyclical bidirectional relationship—lower personal control increases people’s preference for tighter cultures, and tighter cultures reduce people’s sense of personal control. Therefore, we predict that:

Hypothesis 5: People in tighter cultures perceive lower personal control.

Further, we predict that, despite impeding personal control, tight cultures will increase individuals’ sense of collective control. Greater compliance with norms in tight cultures can help groups achieve goals that individuals may not otherwise be capable of attaining alone (Greenaway et al., 2015). Given the increased social coordination afforded by tight cultures (Gelfand et al., 2011), we test if people in tight cultures might feel that they are capable of achieving collective goals. Indeed, according to the group-based control model, groups are an important source of control as they can “pursue the goals and uphold the values they share with their members” (Fritzsche et al., 2008, p. 598; Triandis, 1989). Consistent

with this idea, tighter cultures were better able to control the COVID-19 pandemic as they could more easily regulate individuals' actions to achieve the collective goal of containing the virus (Gelfand et al., 2021). This positive relationship between tight cultures and collective control can perhaps balance the negative bidirectional relationship between tighter cultures and low personal control.¹

Hypothesis 6: People in tighter cultures perceive higher collective control.

In sum, we propose a full cycle of mutual constitution of the psyche and culture in the current research. We suggest that societal-level differences in tightness–looseness and individual-level perceptions of personal control and collective control can be mutually reinforced. Our model suggests an unstable equilibrium in which people in tighter cultures perceive less individual personal control and greater collective control over time. An instigating instance of lowered personal control (e.g., COVID-19 pandemic) can increase people's desire for structure and, consequently, their preference for a tighter culture. Being in a tighter culture then reduces people's sense of personal control but increases their sense of collective control over time (Figure 1).

Overview of Studies

To test our hypotheses, we conducted an archival study and five correlational and experimental studies across multiple cultures. Studies 1–3 examine the correlational (Studies 1 and 2) and causal (Study 3) relation between personal control on preferences for tight cultures. Study 1 investigated whether individuals with lower levels of perceived control prefer to live in tighter U.S. states (Hypothesis 1). Employing a two-wave longitudinal survey design with employees in China, Study 2 examined whether employees who experience lower levels of perceived control have a greater need for structure and, consequently, prefer tighter cultures (Hypotheses 1–4). Study 3 tested whether experimentally induced feelings of low personal controlled Singaporeans to punish norm

violators in an economic game (Hypothesis 1). Together with Study 3, Studies 4 and 5 employed an experimental chain design and tested the causal relationships between personal control, need for structure, and preference for a tighter culture. Specifically, Study 4 tested whether experimentally manipulated feelings of low perceived control increase people's need for structure (Hypothesis 2); Study 5 examined whether experimentally induced need for structure increases people's preference for tighter organizational cultures (Hypothesis 3). Finally, Studies 6a and 6b manipulated cultural tightness and examined whether being in a tighter culture reduces people's perceptions of personal control but increases their feelings of collective control (Hypotheses 5 & 6).

Across all studies, we report all participants, measures, and conditions. The present research was approved by the institutional review board at the authors' universities. All scale items used in the present research can be found in the [Supplemental Materials](#). All survey materials, data, and analysis code are available at <https://osf.io/f8wzh>. This study was approved by Tulane University's institutional review board protocol IRB-2020-1432, titled "Attitudes and Beliefs in the Workplace," and Nanyang Technological University's institutional review board protocol IRB-2015-07-018-06, titled "The Role of Implicit Processes in Cultural Learning."

Study 1: Preferences to Live in Tighter or Looser U.S. States

Study 1 tested Hypothesis 1, whether people who perceive low personal control prefer tighter cultures. We assessed preference for tighter cultures indirectly based on which U.S. state participants wanted to move to. Specifically, we predicted that people with lower perceived control would prefer to live in culturally tighter states.

Method

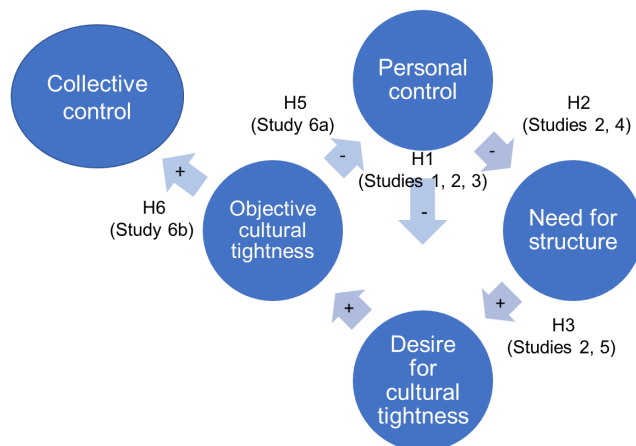
Participants

We analyzed individuals who completed Wave 2 ($N = 3,422$; 1,863 women, 1,559 men, $M_{\text{age}} = 55.66$, $SD = 12.26$) and Wave 3 ($N = 2,295$; 1,244 women, 1,051 men; $M_{\text{age}} = 63.96$, $SD = 11.02$) of a three-wave Midlife in the United States (MIDUS) longitudinal survey (Brim et al., 2004). We did not use the Wave 1 data because it did not contain the dependent variable of interest.

Procedure

Perceived personal control was assessed using an established 12-item scale (Ettner & Grzywacz, 2001; Lachman & Weaver, 1998a, 1998b, e.g., "There is little I can do to change the important things in my life," $\alpha_{\text{Wave 2}} = .87$, $\alpha_{\text{Wave 3}} = .87$). These items were measured on a 7-point scale (1 = *agree strongly*, 7 = *disagree strongly*). We coded participants' responses so that higher

Figure 1
Theorized Model and Overview of Studies



Note. See the online article for the color version of this figure.

¹ Our prediction that tighter cultures would decrease personal control but increase collective control is consistent with the literature on secondary control, which has found that people accept a loss of personal control if they can gain a sense of secondary control through third parties (Rothbaum et al., 1982). For example, although people forfeit their sense of personal control when they submit to powerful others, doing so can also increase their sense of vicarious secondary control through the powerful agent (Rothbaum et al., 1982).

scores indicated greater personal control ($M_{\text{wave } 2} = 5.56$, 95% CI [5.52, 5.59], $SD_{\text{wave } 2} = .98$, $M_{\text{wave } 3} = 5.48$, 95% CI [5.44, 5.53], $SD_{\text{wave } 3} = 1.00$).

Although the survey did not collect information about which state each participant was currently living in, participants in both waves were asked, “Thinking back over all the places you’ve lived during your lifetime, including where you live now, which state would you most like to live in for the next 10 years if you could easily move there now?” We computed the tightness–looseness score of participants’ preferred state based on Harrington and Gelfand’s (2014) work. Harrington and Gelfand (2014) developed a measure of state-level tightness–looseness using a wide variety of indicators of tightness–looseness. These indicators included strength of punishment (e.g., the legality of corporal punishment, punitiveness of laws), latitude/permissiveness (access to alcohol), diversity (as measured by the percentage of total population that is foreign), and prevalence and strength of institutions (e.g., state-level religiosity). Higher scores on this measure indicated greater preference for tighter states ($M_{\text{wave } 2} = 48.26$, 95% CI [47.84, 48.67], $SD_{\text{wave } 2} = 12.42$, $M_{\text{wave } 3} = 48.47$, 95% CI [47.95, 48.99], $SD_{\text{wave } 3} = 12.71$).

We included participants’ gender, age, income, and education as covariates.² We also included state-level variables that were correlated with tightness–looseness, including political orientation of the state (Jones, 2005; Saad, 2014), individualism–collectivism (Vandello & Cohen, 1999), and gross product of the state (Bureau of Economic Analysis, 2006, 2014).

Results

See Table 1 for means, standard deviations, and correlations between variables. As this was a longitudinal study, most participants completed both Wave 2 and Wave 3, which led to nonindependence of observations. Therefore, we conducted a multilevel linear regression model with random intercepts. Responses at Wave 2 and Wave 3 nested within participants. We regressed participants’ preferred state’s tightness–looseness score (the dependent variable) on perceived control (the independent variable). Consistent with Hypothesis 1, lower perceived personal control was associated with a greater preference for tighter states (Table 2, Model 1). This persisted and even strengthened after controlling for participants’ gender, age, income, education, state-level political party affiliation, state-level individualism–collectivism, and state-level gross national product (Table 2, Model 2).

Discussion

Study 1 found that people with lower personal control preferred to move to tighter U.S. states. As people may desire to move to various states for reasons other than personal control, we ensured that this relationship was robust after controlling for potential confounds, such as the collectivism, political orientation, and per capita gross domestic product (GDP) of the state.

An important limitation of this study is that it did not assess the state participants were currently living in. As it is possible that participants may have reported the state in which they currently reside as their preferred state, an alternative explanation is that this study merely shows that people from tighter states experience lower personal control. To remedy this limitation, Study 3 tests

the causal effect of personal control on preference for tighter cultures.

Study 2: Evidence From a Longitudinal Two-Wave Study in China

Study 2 employed a longitudinal study design to provide further evidence for the relationships between perceived control, need for structure, and preference for tighter cultures (Hypotheses 1–4). With the assistance of the company’s human resource management department, we invited all employees of an apparel retailer located in China to participate in our study. We tested whether lower personal control measured at Time 1 will be associated with a greater preference for a tighter organizational culture (Hypothesis 1), as well as a greater need for structure (Hypothesis 2) measured at both Time 1 and Time 2. We also tested whether a greater need for structure measured at Time 1 will be associated with a greater preference for a tighter organizational culture measured at both Time 1 and Time 2 (Hypothesis 3). We then tested whether the need for structure measured at Time 2 will mediate the predictive effect of personal control assessed at Time 1 on preference for tighter cultures measured at Time 2 (Hypothesis 4). Finally, to provide converging mediation evidence, we also examined if the effect of personal control (Time 1) on preference for a tighter organization (Time 2) was mediated by a greater need for structure (Time 1).

Method

The hypotheses, power analysis, method, sample size, and pre-selection criteria for this study were preregistered at <http://aspredicted.org/blind.php?x=vf27gn>.

Participants

As part of a larger study, participants completed measures of perceived personal control, need for structure, and preference for a tighter organizational culture. We sought to recruit as many participants as possible from an apparel retailer in southern China. To ensure confidentiality, identification codes were used to match subordinate–supervisor dyads across different times. All employees were assured that their responses were completely confidential to alleviate evaluation apprehension and increase the candidness of responses. A total of 323 employees were invited to participate in the present survey, and 225 participants provided complete responses (response rate of 70%). No participants were excluded from this study. Our sample included 225 employees (148 women, 77 men; $M_{\text{age}} = 31.18$, $SD = 2.34$).

Procedure

Perceived control was assessed using a 10-item scale (taken from Ma & Kay, 2017, “I am in control of my life,” $M_{\text{wave } 1} = 4.59$, 95% CI [4.48, 4.71], $SD_{\text{wave } 1} = .86$, $M_{\text{wave } 2} = 4.51$, 95% CI [4.40, 4.61], $SD_{\text{wave } 2} = .81$). We measured need for structure using a 12-item scale (taken from Neuberg & Newsom, 1993, “I hate to change my plans at the last minute,” $M_{\text{wave } 1} = 4.33$, 95% CI [4.24, 4.42],

² Individuals’ political orientation was not measured in the MIDUS survey. We also sought to include the race/ethnicity of the participant as a covariate, but this information was not available.

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Table 1
Variable Intercorrelations, Means, and Standard Deviations Among Variables (Study 1)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Perceived control (Wave 2)	5.56	0.98	(0.87)															
2. Perceived control (Wave 3)	5.48	1.00	0.64***	(0.87)														
3. Gender (1 = male, 2 = female)	1.54	0.50	-0.07***	-0.06*	—													
4. Age (Wave 2)	55.66	12.26	-0.04*	-0.06**	-0.03	—												
5. Age (Wave 3)	63.96	11.01	0.06**	-0.09**	-0.03	1.00***	—											
6. Education (Wave 2)	7.37	2.52	0.16***	0.17***	-0.11***	-0.14***	0.90***	—										
7. Education (Wave 3)	7.63	2.49	0.13***	0.18***	-0.12***	-0.13***	0.90***	0.35***	—									
8. Income (Wave 2)	42458.94	40543.80	0.18***	0.18***	-0.31***	-0.18***	-0.12***	0.35***	0.36***	—								
9. Income (Wave 3)	57078.54	58991.30	0.15***	0.19***	-0.31***	-0.14***	-0.15***	0.36***	0.36***	0.62***	—							
10. % of republicans (Wave 2)	45.62	6.46	-0.01	-0.03	0.01	-0.02	-0.01	-0.07**	-0.06**	-0.04*	-0.02	—						
11. % of republicans (Wave 3)	40.13	6.22	-0.04	-0.03	-0.01	-0.01	-0.02	-0.14***	-0.12***	-0.07**	-0.07***	0.55***	—					
12. Collectivism (Wave 2)	50.36	8.94	0.01	0.01	0.01	-0.03	-0.03	0.01	0.04	0.03	0.06**	0.08***	-0.18***	—				
13. Collectivism (Wave 3)	50.17	9.11	0.02	-0.01	0.01	-0.02	-0.02	-0.01	-0.01	0.03	0.04	0.04	-0.20***	0.74***	—			
14. Tightness-looseness (Wave 2)	48.26	12.42	-0.05**	-0.04	0.03	-0.02	-0.02	-0.11***	-0.08***	-0.09***	-0.06**	0.48***	0.44***	0.24***	0.19***	—		
15. Tightness-looseness (Wave 3)	48.47	12.71	-0.04	-0.03	0.03	-0.01	-0.02	-0.11***	-0.10***	-0.06**	-0.08***	0.36***	0.60***	0.19***	0.27***	0.77***	—	
16. Gross state product (logged, Wave 2)	12.57	0.99	0.01	0.02	0.01	0.02	-0.02	0.08***	0.09***	0.04**	0.05*	-0.32***	-0.43***	0.50***	0.39***	-0.23***	-0.15***	—
17. Gross state product (logged, Wave 3)	12.94	0.99	0.02	0.03	0.02	0.01	0.01	0.08***	0.08***	0.06*	0.06**	-0.20***	-0.59***	0.41***	0.50***	-0.14***	-0.20***	0.70***

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2
Preference for Tight (vs. Loose) States as a Function of Perceived Personal Control (Study 1)

Variable	Model 1				Model 2			
	<i>b</i>	95% CI	<i>SE</i>	<i>z</i>	<i>b</i>	<i>SE</i>	95% CI	<i>z</i>
Intercept	49.87**	[48.25, 51.48]	0.82	60.48	32.55***	2.80	[27.06, 38.05]	11.61
Perceived control	-0.29*	[-0.57, -0.01]	0.15	-1.97	-0.28*	0.13	[-0.55, -0.02]	-2.08
Gender (1 = male, 2 = female)					0.83*	0.34	[0.15, 1.50]	2.41
Age					0.16***	0.01	[0.13, 0.18]	13.10
Income					0.01	0.01	[-0.01, 0.01]	1.57
Education					-0.21***	0.06	[-0.34, -0.09]	-3.30
Gross product of state that <i>P</i> wants to live (log)					-2.92***	0.17	[-3.26, -2.59]	-16.93
Political conservatism of state that <i>P</i> wants to live					0.46***	0.02	[0.42, 0.50]	22.75
Collectivism of state that <i>P</i> wants to live					0.50***	0.02	[0.47, 0.54]	28.22
N (Level 1)		6,320					5,717	
N (Level 2)		4,036					3,750	

Note. *N* for Model 2 is smaller due to missing demographic information. CI = confidence interval; *SE* = standard error.

* $p < .05$. ** $p < .01$. *** $p < .001$.

$SD_{wave 1} = .66$, $M_{wave 2} = 4.49$, 95% CI [4.39, 4.59], $SD_{wave 2} = .74$). Finally, we adapted Gelfand et al.'s (2011) measure of cultural tightness and developed a five-item³ scale assessing preference for a tighter organization (e.g., "My company should have more social norms that people should abide by," $M_{wave 1} = 4.64$, $SD_{wave 1} = .84$, 95% CI [4.53, 4.75], $M_{wave 2} = 4.72$, 95% CI [4.61, 4.84], $SD_{wave 2} = .86$). All items were measured on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). Higher values on these three scales indicated greater perceived personal control, need for structure, and preference for a tighter organization. All scale items used can be found in the Supplemental Materials.

Results

Variable means, standard deviations, and intercorrelations are provided in Table 3. Confirmatory factor analyses with personal control, need for structure, and tightness–looseness measures at Time 1 indicated a well-fitting correlated three-factor structure, $\chi^2(321) = 495.47$, $p < .001$, comparative fit index (CFI) = .95, Tucker–Lewis index (TLI) = .94, root-mean-square error of approximation (RMSEA) = .049.

Supporting Hypothesis 1, lower perceived personal control measured at Time 1 was associated with a preference for a tighter organization at both Time 1, $b = -.17$, 95% CI [-0.298, -0.045], $\beta = -.18$, $SE = .06$, $t(223) = -2.68$, $p = .008$, $\eta^2 = .03$, and Time 2, $b = -.25$, 95% CI [-0.378, -0.120], $\beta = -.25$, $SE = .07$, $t(223) = -3.81$, $p < .001$, $\eta^2 = .06$. Consistent with Hypothesis 2, lower perceived personal control measured at Time 1 was also associated with a greater need for structure measured at both Time 1, $b = -.12$, 95% CI [-0.223, -0.022], $\beta = -.16$, $SE = .05$, $t(223) = -2.39$, $p = .018$, $\eta^2 = .03$, and at Time 2, $b = -.29$, 95% CI [-0.401, -0.186], $\beta = -.34$, $SE = .05$, $t(223) = -5.37$, $p < .001$, $\eta^2 = .11$. Supporting Hypothesis 3, greater need for structure measured at Time 1 was associated with a preference for a tighter organization measured at both Time 1, $b = .21$, 95% CI [0.042, .371], $\beta = .16$, $SE = .08$, $t(223) = 2.48$, $p = .014$, $\eta^2 = .03$, and Time 2, $b = .27$, $\beta = .21$, 95% CI [0.105, .442], $SE = .09$, $t(223) = 3.20$, $p = .002$, $\eta^2 = .04$.

We tested a two-wave longitudinal mediation model recommended by Little et al. (2007). We bootstrapped the product term of the perceived personal control (Time 1) to need for structure

(Time 2) and the need for structure (Time 1) to preference for a tighter organization (Time 2) paths. Supporting Hypothesis 4, we found that the 95% confidence intervals of bootstrapped indirect effect did not include zero, suggesting significant mediation, Coeff = $-.02$, $SE = .01$, 95% CI [-0.057, -0.003] (Figure 2). The indirect effect was significant after controlling for individuals' gender, age, and education level, Coeff = $-.02$, $SE = .01$, 95% CI [-0.059, -0.003]. Finally, we tested reverse mediation and bootstrapped the product term of the preference for a tighter organization (Time 1) to need for structure (Time 2) and the need for structure (Time 1) and personal control (Time 2) paths. We found that the 95% confidence intervals of bootstrapped indirect effect included zero, ruling out reverse mediation, Coeff = $.03$, $SE = .03$, 95% CI [-0.017, .091].

As an additional test of mediation, we also examined if the effect of personal control (Time 1) on preference for a tighter organization (Time 2) was mediated by a greater need for structure (Time 1). Again, we found that the 95% confidence intervals of bootstrapped indirect effect did not include zero, suggesting significant mediation, Coeff = $-.03$, $SE = .02$, 95% CI [-0.065, -0.002]. The indirect effect was significant after controlling for individuals' gender, age, and education level, Coeff = $-.03$, $SE = .02$, 95% CI [-0.064, -0.003]. The reverse mediation with the preference for a tighter organization (Time 2) as the independent variable, need for structure (Time 1) as the mediator, and perceived personal control (Time 1) as the dependent variable did not yield a significant indirect effect, Coeff = $-.02$, $SE = .02$, 95% CI [-0.06, .004].

Discussion

Employing a longitudinal design, Study 2 provided further evidence for the hypothesized relationships in a field setting. We found that employees with lower personal control had a greater need for structure and, therefore, preferred their organization to have a tighter culture. Further, consistent with our hypothesized model, need for

³ We did not include an adapted version of the item "In this country, if someone acts in an inappropriate way, others will strongly disapprove" because we received feedback from the company representative that the adapted version of this item, "In this company, if someone acts in an inappropriate way, others should more strongly disapprove" was unclear in Chinese and might be difficult for employees to respond to.

Table 3
Variable Intercorrelations, Means, and Standard Deviations Among Variables (Study 3)

Variable	M	SD	1	2	3	4	5	6
1. Perceived control (Wave 1)	4.59	0.86	(.93)					
2. Perceived control (Wave 2)	4.51	0.81	0.38***	(.90)				
3. Need for structure (Wave 1)	4.33	0.66	-0.16*	0.02	(.90)			
4. Need for structure (Wave 2)	4.49	0.74	-0.34***	-0.21**	0.28***	(.88)		
5. Desire for organization greater tightness-looseness (Wave 1)	4.64	0.84	-0.18**	-0.09	0.16*	0.41***	(.90)	
6. Desire for organization greater tightness-looseness (Wave 2)	4.72	0.86	-0.25***	-0.10	0.21**	0.46***	0.89***	(.85)

Note. N = 225.

* p < .05. ** p < .01. *** p < .001.

structure mediated the link between perceived control and preference for tighter cultures (as hypothesized), but not the reverse link between preference for tighter cultures and perceived control.

**Study 3: Perceived Personal Control
→ Cultivating a Culture of Tightness**

Employing an experimental chain design (Spencer et al., 2005), Studies 3–6 aimed to provide causal evidence for our model. Specifically, Study 3 tested whether experimentally induced lack of personal control increases people’s likelihood of enforcing norms (a key component of tightness) in an economic game. Participants had to decide whether to punish or reward a person who acted in either a self-interested or a prosocial manner. We framed cooperation as the more socially desirable behavior and posttested the game instructions to ensure that participants perceived that this was the case. We predicted that participants with low personal control would be more likely to uphold this norm of cooperation by rewarding prosocial behavior and punishing self-interested behavior even at a monetary cost to themselves (Fehr & Gächter, 2000).

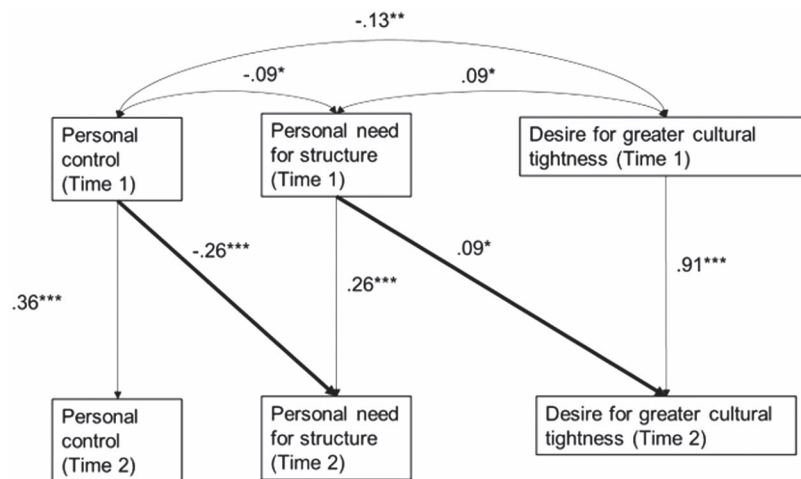
Further, we sought to address the role of perceived power as an alternative explanation. Control and power are conceptually linked (Inesi et al., 2011), and people with higher power (who also tend to have higher personal control) prefer situations with fewer situational constraints (Fiske, 1993; Galinsky et al., 2008; Whitson et al., 2013). Therefore, we assessed whether personal control drives preference for tighter cultures above and beyond the sense of power.

Method

Participants

As this was the first study that employed this manipulation and assessed this dependent variable, we assumed a moderate effect size of $d = .50$ (Richard et al., 2003). A power analysis with an effect size of $d = .50$, $p = .05$ (two-tailed), and power = 80% indicated that we needed to recruit 128 participants. We posted a study seeking 128 participants in the lab at a university in Singapore, but only 126 participants showed up (84 women, 40 men; 2 unreported, mean age of 22.76 years, $SD = 2.06$).

Figure 2
Need for Structure Mediates the Relationship Between Personal Control and Desire for a Tighter Organizational Culture



Note. Bolded paths were used in the computation of the indirect effect. Unstandardized coefficients. Study 3.

* p < .05. ** p < .01. *** p < .001.

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Procedure

All participants were asked to complete a concept identification task (Whitson & Galinsky, 2008). Participants were randomly assigned to either the high or the low-control condition. All participants were informed that they would complete a concept identification task, in which they would be presented with pairs of symbols, and in each pair, one symbol represents the concept while the other does not. They were told that they would be given feedback about whether they had chosen the correct symbol whenever they selected a symbol.

Participants first completed a practice session and then four sessions with four different concepts. Each session had 10 rounds. Participants in the control condition did not receive any feedback for each round. In contrast, participants in the low-control condition received random feedback not contingent on their responses. Past research has found that feedback that is unrelated to performance reduces people's sense of control (Pittman & D'Agostino, 1989; Pittman & Pittman, 1979; Whitson & Galinsky, 2008).

After the personal control manipulation, participants were informed that they would be playing a point's allocation game and that they would receive a final bonus depending on the decisions that they and two other participants made. They were told that the identity of the other participants was anonymous, but the bonus payments that they would receive were real. Participants were then asked to complete a three-person strategic game with three different roles: the Decider, the Receiver, and the Judge (adapted from Ding & Savani, 2020, Study 4; see also Peysakhovich et al., 2014; Strang et al., 2017). The game comprised 20 rounds. For each round, the Decider received 10 points whereas the Receiver received 0 points. The Decider would have to decide whether to keep all 10 points for themselves and give 0 points to the Receiver (i.e., to act in a self-serving manner), or to give 5 points to the Receiver and keep 5 points for themselves (i.e., to act in an altruistic manner). The Receiver had no choice but to accept what the Decider gave them.

The Judge received 20 points in each round and was informed about the Decider's decision in each round. If the Decider acted in a self-serving manner, the Judge could choose to give up 5 of their points to punish the Decider, who would receive a deduction of 10 points and thus end up with nothing. If the Decider acted altruistically, the Judge could choose to give up 5 of their points to reward the Decider, who would receive 10 additional points (to receive a total of 15 points). Because Judges were asked if they wanted to "reward" Deciders when Deciders chose to split their points evenly or to "punish" Deciders when Deciders chose to split their points unevenly, the wording of the instructions implied that acting prosocially was the socially desirable behavior. A posttest confirmed our assumption (see Supplemental Materials). Participants were also informed that they would receive their cumulative points in the form of a monetary bonus, with 1,000 points equaling one Singapore dollar.

Unbeknownst to participants, all of them were assigned to the role of a Judge. All participants played 10 rounds in which they were told that the Decider acted self-servingly, and 10 rounds in which they were told that the Decider acted altruistically. We randomized the order of these 20 rounds to address the possibility that the effects are explained by a particular sequence of choices on the part of the Decider.⁴

After completing the 20 trials, participants were asked to complete an eight-item scale that assessed their subjective feelings of

power when they played the role of the Judge in the game (e.g., "During the experimental game, I can get the other participants to listen to what I say"; "During the experimental game, my wishes did not carry much weight"; "During the experimental game, I could get the other participants to do what I wanted"; adapted from Anderson et al., 2012; $\alpha = .79$; see Supplemental Materials, for the full scale).

Results

Across the 20 rounds, we summed the number of times that participants chose to uphold the norm of cooperation by rewarding Deciders when they acted altruistically and punishing Deciders when they acted self-servingly. As the dependent variable was a count variable, we analyzed it using a Poisson regression. As predicted, participants in the low-control condition ($M = 8.83$, 95% CI [7.08, 10.57], $SD = 6.93$) chose to uphold the norm of cooperation more so than participants in the high-control condition ($M = 6.73$, 95% CI [5.07, 8.39], $SD = 6.58$), $b = -.27$, 95% CI [-.40, -.14], $SE = .06$, incidence rate ratio = .76, $z = -4.20$, $p < .001$. Another Poisson regression found that this finding held even after controlling for perceived power,⁵ $b = -.32$, 95% CI [-.45, -.19], $SE = .07$, incidence rate ratio = .73, $z = -4.87$, $p < .001$.

We also examined the effect of manipulated control on participants' tendency to punish selfish behaviors separately from the tendency to reward cooperative behaviors. We found that participants in the low-control condition ($M = 4.27$, 95% CI [3.27, 5.27], $SD = 3.96$) chose to reward cooperative behaviors more so than participants in the high-control condition ($M = 2.89$, 95% CI [2.00, 3.77], $SD = 3.52$), $b = -.39$, 95% CI [-.58, -.20], $SE = .10$, incidence rate ratio = .68, $z = -4.07$, $p < .001$. Participants in the low-control condition ($M = 4.56$, 95% CI [3.54, 5.57], $SD = 4.03$) chose to punish selfish behaviors more so than participants in the high-control condition ($M = 3.84$, 95% CI [2.85, 4.84], $SD = 3.95$), $b = -.17$, 95% CI [-.34, .01], $SE = .09$, incidence rate ratio = .84, $z = -1.95$, $p = .051$. Finally, the effect of control on rewarding and punishing behaviors held after controlling for participants' sense of power. A Poisson regression found that compared to those in the high-control condition, participants in the low-control condition were more likely to punish deciders who acted selfishly, $b = -.20$, 95% CI [-.37, -.02], $SE = .09$, incidence rate ratio = .82, $z = -2.24$,

⁴ It is possible that different sequences of altruistic versus self-serving decisions by the Decider might have influenced participants' decision to reward or punish the Decider. For example, Judges in the low-control condition might be more likely to punish Deciders when Deciders' self-serving choices were clustered mostly in the first 10 decisions instead of evenly distributed across the 20 trials. To address this concern, we randomized the order of the 20 trials independent of the experimental manipulation.

⁵ We further examined whether a higher sense of power can explain the effect of the experimental manipulation in the high-control condition. We found power varied in an opposite direction as expected—participants in the high-control condition felt a lower sense of power ($M = 4.41$, 95% CI [4.14, 4.67], $SD = 1.06$) than those in the low-control condition ($M = 4.79$, 95% CI [4.52, 5.05], $SD = 1.05$), $t(124) = 2.02$, $p = .046$, $d = 0.36$. Importantly, participants' sense of power was also not significantly correlated with the number of times participants chose to uphold social norms by punishing self-serving deciders and rewarding altruistic deciders ($r = -.12$, $p = .19$). Breaking down the two types of trials, we found that perceived power was uncorrelated with the number of times participants rewarded altruistic behaviors ($r = -.14$, $p = .11$) or punished self-serving behaviors ($r = -.06$, $p = .48$). These findings suggest that power cannot serve as an alternative explanation of the present findings.

$p = .025$; they were also more likely to reward deciders who acted cooperatively, $b = -.46$, 95% CI $[-.65, -.27]$, $SE = .10$, incidence rate ratio = .63, $z = -4.74$, $p < .001$.

Discussion

In sum, Study 3 demonstrated that participants experiencing low personal control were more willing to uphold the norm of cooperation even at a financial cost to themselves. Importantly, this effect was robust even after controlling for participants' sense of power.

Study 4: Perceived Personal Control → Need for Structure

In this study, we manipulated perceived personal control and tested whether it influenced participants' need for structure (Hypothesis 2). Further, as in Study 3, we addressed feelings of power as an alternative explanation. In addition, because participants might feel more negative affect and less positive affect in the low personal control condition than in the high personal control condition, we also controlled for positive and negative affect in our analyses.

Method

The hypotheses, power analysis, method, sample size, and pre-selection criteria for this study were preregistered at <https://osf.io/bzeq9>.

Participants

Landau et al. (2015) estimated that the average effect of the recall control manipulation that we sought to employ in this study on structure was $r = .23$ or $d = .47$. Given an effect size of Cohen $d = .47$, $a = .05$ (two-tailed), and power = .90, we need to recruit 194 participants. We rounded up this number to 200 participants and posted a survey seeking 200 U.S. residents on Amazon Mechanical Turk. In response, 201 participants completed the survey. Consistent with our preregistration, we excluded eight participants with duplicate IP addresses or geolocations. The final sample included 193 participants (98 women, 95 men; $M_{\text{age}} = 44.75$, $SD = 12.38$).

Procedure

Participants were randomly assigned to either the high-control or the low-control condition. Participants who were assigned to the low personal control condition were asked:

Please recall a time in the past when you had low control. For the next 2 minutes, please write about the experience in which you felt a complete lack of control over the situation. In other words, write about a time when you experienced very low or no feelings of control. Describe the situation, what exactly happened, and how you felt at that moment in detail. Please use at least 60 words to describe the situation.

Participants assigned to the high-control condition were asked:

Please recall a time in the past when you had high control. For the next 2 minutes, please write about the experience in which you felt complete control over the situation. In other words, write about a time when you experienced a great sense of control. Describe the situation, what exactly happened, and how you felt at that moment in detail. Please use at least 60 words to describe the situation.

All participants then responded to a four-item state need for structure scale adapted from Neuberg and Newsom (1993): "Right now, I would not like to be in situations where the rules are not clear," "Right now, I would hate to be in unpredictable situations," "Right now, I would not like to work with people who are unpredictable," and "Right now, I would feel upset if I go into a situation without knowing what I can expect from it" ($\alpha = .82$). Finally, we assessed participants' positive and negative affect using the 20-item Positive and Negative Affect Schedule (PANAS) scale ($\alpha_{\text{positive}} = .93$; $\alpha_{\text{negative}} = .94$, Watson et al., 1988) and sense of power using an eight-item scale ($\alpha = .94$, Anderson et al., 2012).

Results

As preregistered, we excluded three participants who provided gibberish responses (e.g., "good," "yes") to the open-ended prompt after the experimental manipulation. Consistent with Hypothesis 2, we found that participants in the low personal control condition ($M = 5.43$, 95% CI $[5.22, 5.65]$, $SD = 1.07$) reported a significantly higher need for structure than those in the high personal control condition ($M = 4.64$, 95% CI $[4.36, 4.92]$, $SD = 1.37$), $t(188) = 4.49$, $p < .001$, $d = .64$. A regression with need for structure as the dependent variable and personal control (0 = low control, 1 = high control), sense of power, and positive and negative affect as predictors indicated a significant effect of condition, $b = -.79$, 95% CI $[-1.13, -.44]$, $\beta = -.31$, $SE = .18$, $t(185) = -4.50$, $p < .001$, $\eta^2 = .10$. Perceived power, $b = .16$, 95% CI $[-.03, .34]$, $\beta = .14$, $SE = .09$, $t(185) = 1.70$, $p = .091$, $\eta^2 = .02$, and positive affect, $b = .05$, 95% CI $[-.10, .19]$, $\beta = .05$, $SE = .07$, $t(185) = .66$, $p = .511$, $\eta^2 = .01$, were not significantly associated with greater need for structure. Greater negative affect was associated with greater need for structure, $b = .43$, 95% CI $[.09, .76]$, $\beta = .18$, $SE = .17$, $t(185) = 2.50$, $p = .013$, $\eta^2 = .03$.

Discussion

Study 4 provided support for the causal effect of personal control on the need for structure. Specifically, we found that participants who recalled a time when they had low personal control wanted more structure than those who recalled a time when they had high personal control. Importantly, the causal effect of personal control on the need for structure remained significant after controlling for participants' sense of power, positive affect, and negative affect.

Study 5: Need for Structure → Tightness–Looseness

Study 5 tested whether a high need for structure increases people's desire for tighter cultures (Hypothesis 3). Once again, we measured perceived power and positive and negative affect measures as potential confounds.

Further, in this study, we employed a different measure of tight cultures to provide converging evidence for our predictions. As we recruited respondents from a variety of different organizations in this study. To facilitate comparability, we opted to use a measure of tightness–looseness that assessed the appropriateness of various concrete behaviors in the workplace (e.g., swearing, arguing).

Method

Participants

As this was the first experiment in which we manipulated the need for structure, we could not use a prior effect size to conduct a power analysis. Nevertheless, we conducted a power analysis assuming a medium effect size, $d = .40$, $p = .05$ (two-tailed), and power = 80%, indicating that we needed 200 participants. We posted a survey seeking 200 U.S. residents employed full-time and working from their office (as opposed to from their homes or commercial locations) from Prolific Academic. We received responses from 202 participants. Consistent with the other online studies, we excluded two participants with duplicate IP addresses/geolocations. The final sample included data from 200 participants (174 women, 25 men, and 1 other gender; $M_{\text{age}} = 27.20$, $SD = 7.66$).

Procedure

Participants were randomly assigned to either a high or a low need for structure condition. In the low need for structure condition, participants were told:

Extensive research has found that to be happy and successful at work, employees need to be spontaneous, to avoid being creatures of habits and routines. Successful workers are those who don't have a single, fixed work schedule.

Participants were then given three open-ended boxes and asked to indicate three reasons why "it is important to work in a free, spontaneous manner at your current workplace."

In the high need for structure condition, participants were told:

Extensive research has found that to be happy and successful at work, employees need to be organized, and to have regular habits and routines. Successful workers are those who have a clear and structured work schedule.

They were then given three open-ended textboxes and asked to indicate three reasons why "it is important to work in a structured, organized manner at your current workplace."

After completing this task, all participants were informed:

From everyday experiences interacting with our coworkers, we have all developed a subjective "impression" or "feeling" for the appropriateness of any given behavior in the workplace. We are interested in your judgment of the appropriateness of a number of behaviors at your current workplace. Please rate the extent to which you think each of the following behaviors should be appropriate at your current workplace.

To assess the desire for a tighter culture, we presented all participants with 12 behaviors (e.g., arguing, laughing, kissing; taken from Gelfand et al., 2011) and asked them to rate whether each behavior was appropriate at their current workplace (1 = *extremely inappropriate*, 7 = *extremely appropriate*; $\alpha = .74$). We recoded these items such that higher values indicated greater inappropriateness, indicating tighter cultures, and averaged them to form a composite score. Finally, as in Study 4, we assessed participants' positive and negative affect using the PANAS scale ($\alpha_{\text{positive}} = .93$, $\alpha_{\text{negative}} = .90$), and their sense of power ($\alpha = .87$).

Results

No participants provided gibberish or nonsensical answers in the open-ended prompts in the experimental manipulation. An independent samples t test found that participants in the high need for structure condition indicated that the various behaviors were less appropriate in their workplace ($M = 4.38$, 95% CI [4.22, 4.54], $SD = 0.80$) than those in the low need for structure condition ($M = 4.14$, 95% CI [4.02, 4.26], $SD = 0.62$), $t(198) = 2.43$, $p = .016$, $d = 0.34$, consistent with Hypothesis 3.

Next, we regressed participants' desire for a tight organization on experimental conditions (0 = *low need for structure*, 1 = *high need for structure*), perceived power, and positive and negative affect. The effect of the experimental manipulation was significant, $b = .22$, 95% CI [.03, .42], $\beta = .15$, $SE = .10$, $t(195) = 2.23$, $p = .027$, $\eta^2 = .02$. Perceived power, $b = -.08$, 95% CI [-.19, .04], $\beta = -.10$, $SE = .06$, $t(195) = -1.32$, $p = .187$, $\eta^2 = .01$, and positive affect, $b = .03$, 95% CI [-.05, .10], $\beta = .05$, $SE = .04$, $t(195) = .71$, $p = .479$, $\eta^2 = .01$, were not significantly associated with a desire for a tight organization. Greater negative affect was associated with greater need for structure, $b = -.15$, 95% CI [-.26, -.05], $\beta = -.21$, $SE = .05$, $t(195) = -2.82$, $p = .005$, $\eta^2 = .04$.

Discussion

Study 5 offered causal support for the relationship between the need for structure and desire for organizational tightness. Participants who thought about the benefits of having more structure and order in the workplace perceived those various behaviors as less appropriate in their workplace than those who thought about the benefits of having more flexibility. Although we did not directly measure desire or preference for a tighter culture in this study, our dependent measure is a direct measure of tightness as fewer behaviors are appropriate in each situation in tight cultures. Given that the objective tightness of participants' organization was likely randomly distributed across conditions, the findings are consistent with our hypothesis that a high need for structure increases people's preference for a tighter culture.

Study 6a: Tightness–Looseness → Personal Control

Study 6a tested whether being in a tight culture reduces people's perceptions of personal control (Hypothesis 5).

Method

The hypotheses, power analysis, method, and preselection criteria for this study were preregistered at <https://osf.io/upv3q>.

Participants

A previous study employing a similar design yielded an effect size of $d = 1.89$ for personal control. A power analysis using Cohen's $d = 1.89$, $\alpha = .05$ (two-tailed), and power = 95%, indicated that we need to recruit 18 participants. However, to keep up with conventional sample size levels, we decided to recruit 100 participants. We posted a survey seeking 100 U.S. residents on Amazon Mechanical Turk and received 100 responses. We sought to exclude participants with duplicate IP addresses/geolocations. Data from

two participants were excluded. The final sample thus included 98 participants (44 women, 54 men, $M_{\text{age}} = 40.89$, $SD = 11.68$).

Procedure

Participants were randomly assigned to read about a company that either had a tight culture or a loose culture (see [Supplemental Materials](#)). After they read the description, participants were asked to summarize the company's beliefs and to provide one or two examples from their lives that were consistent with the company's beliefs. Next, as a manipulation check, participants indicated the extent to which they shared the company's belief that it is important (vs. not important) to have many social rules and norms in the workplace (1 = *not at all*, 100 = *a great deal*). We reverse-coded the manipulation check item in the culturally loose company so that higher numbers indicated greater perceived importance of social rules and norms in both conditions.

Thereafter, participants were asked to imagine that they accepted a job in the company and were asked to complete a three-item measure of personal control (e.g., "I would feel in control of my life," $\alpha = .91$; adapted from [Greenaway et al., 2015](#)). All items were measured on 7-point scales (1 = *strongly disagree*, 7 = *strongly agree*).

Results

As preregistered, we excluded one participant who provided gibberish responses to the open-ended prompts used after the manipulation. The manipulation check was successful—participants in the culturally loose condition believed that social rules and norms were less important ($M = 45.25$, 95% CI [36.13, 54.38], $SD = 32.46$) than those in the culturally tight condition ($M = 75.11$, 95% CI [68.96, 81.26], $SD = 20.70$), $t(95) = -5.33$, $p < .001$, $d = -1.10$.

Consistent with Hypothesis 5, participants who were asked to imagine working for a company with a tight culture perceived significantly lower personal control ($M = 4.43$, 95% CI [4.02, 4.85], $SD = 1.41$) than those asked to imagine working for a company with a loose culture ($M = 5.83$, 95% CI [5.58, 6.08], $SD = .90$), $t(95) = 5.87$, $p < .001$, $d = 1.19$.

Consistent with our hypothesis, Study 6a provided causal evidence for the idea that tight cultures lower people's sense of personal control.

Study 6b: Tightness–Looseness → Collective Control

Finally, Study 6b tested the last link in the cycle of mutual constitution: whether tighter cultures would increase people's perceptions of collective control (Hypothesis 6).

Method

The hypotheses, power analysis, method, and preselection criteria for this study were preregistered at <https://osf.io/q7ncb>.

Participants

A previous study employing a similar design yielded an effect size of $d = .98$ for a slightly different dependent measure (perceived predictability of social interactions). A power analysis with Cohen's $d = .98$, $\alpha = .05$ (two-tailed), and power = 95% indicated that we

needed to recruit 36 participants. However, we sought to recruit 100 participants to have at least 50 participants per condition. We posted a survey seeking 100 U.S. residents on Mechanical Turk and received 100 responses. Per our preregistered exclusion criteria, we excluded four participants with duplicate IP addresses/geolocations. The final sample thus included 96 participants (49 women, 46 men, 1 unreported, $M_{\text{age}} = 43.39$, $SD = 10.66$).

Procedure

As in Study 6a, participants were randomly assigned to read about a company that either had a tight culture or a loose culture (see [Supplemental Materials](#)). After they read the description, participants were asked to summarize the company's beliefs and to provide one or two examples from their lives that were consistent with the company's beliefs. Next, as a manipulation check, participants indicated the extent to which they shared the company's belief that it is important (vs. not important) to have many social rules and norms in the workplace (1 = *not at all*, 100 = *a great deal*). We recoded participants' responses such that higher numbers indicated greater perceived importance of social rules and norms in both conditions.

Thereafter, participants were asked to imagine that they accepted a job in the company, and were asked to complete a three-item measure of collective control (e.g., "I would feel that employees in the company can work together to control the fate of the company," $\alpha = .94$, adapted from [Ding & Savani, 2020](#)). All items were measured on 7-point scales (1 = *strongly disagree*, 7 = *strongly agree*).

Results

No participants provided gibberish responses to the open-ended prompts used in the manipulation. The manipulation check was successful—participants in the culturally loose condition believed that social rules and norms were less important ($M = 46.00$, 95% CI [37.32, 54.68], $SD = 31.20$) than those in the culturally tight condition ($M = 74.77$, 95% CI [67.17, 82.36], $SD = 24.67$), $t(93) = -4.91$, $p < .001$, $d = 1.02$.

Consistent with Hypothesis 6, participants asked to imagine working for the tight company perceived significantly higher collective control ($M = 5.84$, 95% CI [5.61, 6.08], $SD = .78$) than those asked to imagine working for a loose company ($M = 4.99$, 95% CI [4.64, 5.35], $SD = 1.29$), $t(94) = -3.80$, $p < .001$, $d = .878$.

Consistent with our hypothesis, Study 6b provided causal evidence for the idea that tight cultures lower people's feelings of personal control but increase their sense of collective control.

General Discussion

Six studies documented the cycle of mutual constitution between individuals' sense of control and need for structure and cultural tightness–looseness. American adults experiencing low personal control preferred to live in tighter states (Study 1). Chinese employees perceiving a low sense of control had a higher need for structure, and thus preferred a tighter organizational culture (Study 2). Singaporean students led to experience low personal control were more willing to uphold the norm of cooperation in an economic game at a personal cost (Study 3), and American adults led to experience low

personal control had a higher need for structure (Study 4). Additionally, American adults who considered the benefits of high structure preferred a tighter culture (Study 5). Finally, when asked to imagine themselves working in a tight culture, American adults had a lower sense of personal control (Study 6a) but a higher sense of collective control (Study 6b). Overall, the findings illustrate the bidirectional relationship between tight cultures and personal control.

Theoretical Implications

The present research contributes to the field of cultural psychology by demonstrating the mutual constitution of psyche and culture. An important tenet of cultural psychology is that cultural patterns and individual psychological states mutually shape each other (Fiske et al., 1998; Markus & Kitayama, 1994). However, limited research has documented the bidirectional relationship between the culture and psyche within the same article (although see Kashima, 2000; Kitayama et al., 1997; Morling & Lamoreaux, 2008; Salter et al., 2018, for exceptions). By examining how the desire for personal control, a fundamental human motivation, influences preference for tight cultures (and vice versa), our research contributes to the theory of mutual constitution by documenting a motivational individual-level pathway that could lead to cultural change.

The present research also represents an important theoretical advancement to compensatory control theory. By focusing on cultural tightness as a means of compensatory control, it makes clear a path in which control-motivated structure-seeking might be mutually reinforcing, a possibility that has so far not been considered before (Landau et al., 2015). That is, experiencing low personal control could lead to greater preference for the structure prevalent in tight cultures, and possessing structure can then reduce individual personal control. Further, by showing that the desire for control can also be satisfied by the increased collective control afforded by tight cultures, we offer a path in which the gradual decrease in personal control in tight cultures can unfold in an adaptive way. Through these mutually reinforcing relationships over time, people in tighter cultures lean less on personal agency and more on collective control as a means of perceiving an orderly and controllable world. Thus these pathways might help explain cultural differences in the relative emphasis on personal and collective control (Morling & Evered, 2006).

Our work also contributes to cultural tightness–looseness research by providing evidence for key assumptions of the theory. A core prediction of tightness–looseness theory is that psychological affordances, such as people’s feelings of personal control, “reflect and support” tightness–looseness (Gelfand et al., 2011, p. 1101). In other words, tightness–looseness theory predicts that personal control and tightness–looseness possess a causal bidirectional relationship. However, due to their correlational nature, research that has tested the relation between personal control and tightness–looseness is unable to reveal the causality between these two constructs. For example, personal control was found to be correlated with tightness at the state level in the United States (Harrington & Gelfand, 2014; Uz, 2015). By providing causal evidence for a bottom-up pathway in which psychological states (i.e., people’s personal control) influence preference for tight cultures, and a top-down pathway in which being in tight cultures influences people’s personal control, we extend existing work on tightness–looseness.

In addition, scholars have argued that tight cultures evolved as a way for people to collectively mitigate societal threats (Gelfand et al., 2011; Pelto, 1968; Triandis, 1989). We support this idea by showing that being in a tight culture increases people’s perceptions of collective control, which makes them feel more confident in overcoming external threats as a group. The increased collective control afforded by tight cultures might be especially important in the current COVID-19 pandemic, in which a coordinated collective response is vital for survival. Indeed, in support of the idea that tightness can help cultural groups respond to collective threats, Gelfand et al. (2021) recently found fewer COVID-19-related deaths in tighter cultures.

Strengths, Limitations, and Future Directions

Notable strengths of our work include a test of our hypotheses in culturally diverse contexts that also vary in tightness–looseness, including America, China, and Singapore. We also provide converging tests of our hypotheses using multiple methods, including experiments as well as longitudinal designs. Despite these strengths, our research also has limitations which we discuss below.

One reason there has been limited research examining the mutual constitution of the psyche and culture is that the process itself unfolds over a long interval of time, rendering it difficult to capture empirically. Although we have obtained support for some aspects of this process using different manipulations of control while employing field, experimental, and archival study designs, our studies are limited in that they examine these processes in a static and piecemeal fashion, which may risk oversimplifying the dynamic and interwoven nature of the mutual constitution process.

Further, when demonstrating the effect of personal control on cultural tightness, we have largely assessed people’s preference for tighter cultures or their tendency to punish/reward others to uphold norms, not actual changes in cultural tightness. Indeed, an important assumption of our cyclical model is that preference for tighter organizations would lead to objective changes in cultural tightness, which would then reduce personal control but bolster collective control, and so forth. One way of addressing this limitation could be to conduct field experiments in which some groups could be randomly assigned to have high personal control and others to have low personal control. Researchers can then track differences in preferences for tightness and actual tightness of these groups, as well as psychological and behavioral indicators of need for structure, personal control, and collective control over time.

Although we sought to address the role of power as an alternative explanation in Study 3 by showing that the effect of perceived control held after controlling for power as a covariate, our measurement of power in Study 3 may not capture all the ways in which power is manifested in everyday life. Indeed, the measure of power that we used (Anderson et al., 2012) taps people’s subjective sense of power, as opposed to objective power that stems from structural factors such as socioeconomic status, occupation, income, gender, ethnicity, and so on. It is possible, for instance, that people with a lower chronic sense of power (e.g., women) may prefer stronger norms (e.g., against sexual harassment). Those with higher levels of power may prefer looser cultures as they would prefer not to be shackled by rules and norms (Fiske, 1993). Future research can investigate the relationship between structural power and tightness.

Finally, cultural characteristics are multiply determined, and various forces may countervail and even amplify the effect of personal control on cultural tightness and the effects of tightness on personal agency and collective control (Cohen, 2001). Although we documented that the mutual constitution process generalizes across countries varying in cultural tightness, other dimensions of culture are likely to shape the bidirectional relationship between personal control and tight cultures. For example, individualism–collectivism might influence the degree to which people prefer tight cultures when they feel that they lack personal control (Kay & Sullivan, 2013; Ma et al., 2019). Specifically, whereas people in individualistic cultures are more likely to cope with control threats by directly bolstering their sense of personal control, those in collectivistic cultures may opt to regain their sense of control through compensatory control processes (e.g., preferring tighter cultures). Further, individualism–collectivism might also shape the degree to which being in a tight culture influences people’s feelings of personal and collective control. Specifically, collectivism might strengthen the effect of tight cultures on people’s sense of personal and collective control because people in these cultures are more responsive to social norms (Savani et al., 2015). Future research can examine how other cultural values can strengthen or weaken the observed effects.

Tightness–looseness is a significant dimension along which cultures vary (Gelfand et al., 2011; Triandis, 1972). By documenting a bidirectional relationship between personal control and cultural tightness, the present research documents that culture and psyche can indeed “make each other up” (Shweder, 1991) and that the basic human desire for control can have profound societal implications.

References

- Adams, G., & Markus, H. R. (2001). Culture as patterns: An alternative approach to the problem of reification. *Culture and Psychology, 7*(3), 283–296. <https://doi.org/10.1177/1354067X0173002>
- Adams, G., & Markus, H. R. (2004). Toward a conception of culture suitable for a social psychology of culture. In M. Schaller & C. S. Crandall (Eds.), *The psychological foundations of culture* (pp. 335–360). Lawrence Erlbaum.
- Aktas, M., Gelfand, M. J., & Hanges, P. J. (2016). Cultural tightness–looseness and perceptions of effective leadership. *Journal of Cross-Cultural Psychology, 47*(2), 294–309. <https://doi.org/10.1177/0022022115606802>
- Anderson, C., John, O. P., & Keltner, D. (2012). The personal sense of power. *Journal of Personality, 80*(2), 313–344. <https://doi.org/10.1111/j.1467-6494.2011.00734.x>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. Freeman.
- Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science, 9*(3), 75–78. <https://doi.org/10.1111/1467-8721.00064>
- Bourdieu, P. (1977). *Outline of a theory of practice*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511812507>
- Brim, O. G., Ryff, C. D., & Kessler, R. C. (2004). The MIDUS national survey: An overview. In O. G. Brim, C. D. Ryff, & R. C. Kessler (Eds.), *How healthy are we?: A national study of well-being at midlife* (pp. 1–34). The John D. and Catherine T. MacArthur foundation series on mental health and development. Studies on successful midlife development. The University of Chicago Press.
- Bureau of Economic Analysis. (2006). *Western states led economic growth in 2005*. https://apps.bea.gov/newsreleases/regional/gdp_state/2006/pdf/gsp0606.pdf
- Bureau of Economic Analysis. (2014). *Broad growth across states in 2014*. https://apps.bea.gov/newsreleases/regional/gdp_state/2015/pdf/gsp0615.pdf
- Caluori, N., Jackson, J. C., Gray, K., & Gelfand, M. (2020). Conflict changes how people view God. *Psychological Science, 31*(3), 280–292. <https://doi.org/10.1177/0956797619895286>
- Chua, R. Y., Roth, Y., & Lemoine, J. F. (2015). The impact of culture on creativity: How cultural tightness and cultural distance affect global innovation crowdsourcing work. *Administrative Science Quarterly, 60*(2), 189–227. <https://doi.org/10.1177/0001839214563595>
- Cohen, D. (2001). Cultural variation: Considerations and implications. *Psychological Bulletin, 127*(4), 451–471. <https://doi.org/10.1037/0033-2909.127.4.451>
- Cohen, D., & Kitayama, S. (2007). Cultural psychology: This stanza and the next. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 847–851). Guilford Press.
- Ding, Y., & Savani, K. (2020). From variability to vulnerability: People exposed to greater variability judge wrongdoers more harshly. *Journal of Personality and Social Psychology, 118*(6), 1101–1117. <https://doi.org/10.1037/pspa0000185>
- Ettner, S. L., & Grzywacz, J. G. (2001). Workers’ perceptions of how jobs affect health: A social ecological perspective. *Journal of Occupational Health Psychology, 6*(2), 101–113. <https://doi.org/10.1037/1076-8998.6.2.101>
- Fehr, E., & Gächter, S. (2000). Cooperation and punishment in public goods experiments. *The American Economic Review, 90*(4), 980–994. <https://doi.org/10.1257/aer.90.4.980>
- Fiske, A., Kitayama, S., Markus, H. R., & Nisbett, R. E. (1998). The cultural matrix of social psychology. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 915–981). McGraw-Hill.
- Fiske, S. T. (1993). Controlling other people: The impact of power on stereotyping. *American Psychologist, 48*(6), 621–628. <https://doi.org/10.1037/0003-066X.48.6.621>
- Friesen, J. P., Kay, A. C., Eibach, R. P., & Galinsky, A. D. (2014). Seeking structure in social organization: Compensatory control and the psychological advantages of hierarchy. *Journal of Personality and Social Psychology, 106*(4), 590–609. <https://doi.org/10.1037/a0035620>
- Fritsche, I., Jonas, E., Ablasser, C., Beyer, M., Kuban, J., Manger, A. M., & Schultz, M. (2013). The power of we: Evidence for group-based control. *Journal of Experimental Social Psychology, 49*(1), 19–32. <https://doi.org/10.1016/j.jesp.2012.07.014>
- Fritsche, I., Jonas, E., & Fankhänel, T. (2008). The role of control motivation in mortality salience effects on ingroup support and defense. *Journal of Personality and Social Psychology, 95*(3), 524–541. <https://doi.org/10.1037/a0012666>
- Galinsky, A. D., Magee, J. C., Gruenfeld, D. H., Whitson, J. A., & Liljenquist, K. A. (2008). Power reduces the press of the situation: Implications for creativity, conformity, and dissonance. *Journal of Personality and Social Psychology, 95*(6), 1450–1466. <https://doi.org/10.1037/a0012633>
- Gelfand, M. J., Jackson, J. C., Pan, X., Nau, D., Pieper, D., Denison, E., Dagher, M., Van Lange, P., Chiu, C., & Wang, M. (2021). The relationship between cultural tightness–looseness and COVID-19 cases and deaths: A global analysis. *The Lancet Planetary Health, 5*(3), e135–e144. [https://doi.org/10.1016/S2542-5196\(20\)30301-6](https://doi.org/10.1016/S2542-5196(20)30301-6)
- Gelfand, M. J., Nishii, L. H., & Raver, J. L. (2006). On the nature and importance of cultural tightness–looseness. *Journal of Applied Psychology, 91*(6), 1225–1244. <https://doi.org/10.1037/0021-9010.91.6.1225>
- Gelfand, M. J., Raver, J. L., Nishii, L., Leslie, L. M., Lun, J., Lim, B. C., Duan, L., Almaliach, A., Ang, S., Arnadottir, J., Aycan, Z., Boehnke, K., Boski, P., Cabecinhas, R., Chan, D., Chhokar, J., D’Amato, A., Ferrer, M., Fischlmayr, I. C., ... Yamaguchi, S. (2011). Differences between tight and loose cultures: A 33-nation study. *Science, 332*(6033), 1100–1104. <https://doi.org/10.1126/science.1197754>
- Giddens, A. (1979). *Central problems in social theory: Action, structure, and contradiction in social analysis*. University of California Press. <https://doi.org/10.1007/978-1-349-16161-4>
- Greenaway, K. H., Haslam, S. A., Cruwys, T., Branscombe, N. R., Ysseldyk, R., & Heldreth, C. (2015). From “we” to “me”: Group identification

- enhances perceived personal control with consequences for health and well-being. *Journal of Personality and Social Psychology*, 109(1), 53–74. <https://doi.org/10.1037/pspi0000019>
- Harrington, J. R., & Gelfand, M. J. (2014). Tightness–looseness across the 50 United States. *Proceedings of the National Academy of Sciences of the United States of America*, 111(22), 7990–7995. <https://doi.org/10.1073/pnas.1317937111>
- Inesi, M. E., Botti, S., Dubois, D., Rucker, D. D., & Galinsky, A. D. (2011). Power and choice: Their dynamic interplay in quenching the thirst for personal control. *Psychological Science*, 22(8), 1042–1048. <https://doi.org/10.1177/0956797611413936>
- Jackson, J. C., Caluori, N., Abrams, S., Beckman, E., Gelfand, M., & Gray, K. (2021). Tight cultures and vengeful gods: How culture shapes religious belief. *Journal of Experimental Psychology: General*, 150(10), 2057–2077. <https://doi.org/10.1037/xge0001033>
- Jackson, J. C., Caluori, N., Gray, K., & Gelfand, M. (2021). The new science of religious change. *American Psychologist*, 76(6), 838–850. <https://doi.org/10.1037/amp0000818>
- Jones, J. M. (2005, January 31). *Gallup review: Party support in 2004*. Gallup. <https://news.gallup.com/poll/14746/gallup-review-party-support-2004.aspx>
- Kashima, E. S., & Kashima, Y. (1998). Culture and language: The case of cultural dimensions and personal pronoun use. *Journal of Cross-Cultural Psychology*, 29(3), 461–486. <https://doi.org/10.1177/0022022198293005>
- Kashima, Y. (2000). Maintaining cultural stereotypes in the serial reproduction of narratives. *Personality and Social Psychology Bulletin*, 26(5), 594–604. <https://doi.org/10.1177/0146167200267007>
- Kashima, Y. (2001). Culture and social cognition: Toward a social psychology of cultural dynamics. In D. Matsumoto (Ed.), *The handbook of culture and psychology* (pp. 325–360). Oxford University Press.
- Kashima, Y., Bain, P. G., & Perfors, A. (2019). The psychology of cultural dynamics: What is it, what do we know, and what is yet to be known? *Annual Review of Psychology*, 70(1), 499–529. <https://doi.org/10.1146/annurev-psych-010418-103112>
- Kashima, Y., Bratanova, B., & Peters, K. (2018). Social transmission and shared reality in cultural dynamics. *Current Opinion in Psychology*, 23, 15–19. <https://doi.org/10.1016/j.copsyc.2017.10.004>
- Kay, A. C., Gaucher, D., McGregor, I., & Nash, K. (2010). Religious belief as compensatory control. *Personality and Social Psychology Review*, 14(1), 37–48. <https://doi.org/10.1177/1088868309353750>
- Kay, A. C., Gaucher, D., Napier, J. L., Callan, M. J., & Laurin, K. (2008). God and the government: Testing a compensatory control mechanism for the support of external systems. *Journal of Personality and Social Psychology*, 95(1), 18–35. <https://doi.org/10.1037/0022-3514.95.1.18>
- Kay, A. C., & Sullivan, D. (2013). Cultural unity and diversity in compensatory control processes. In M. Gelfand, C. Chiu, & Y. Hong (Eds.), *Advances in cultural psychology* (Vol. 3, pp. 181–226). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199930449.003.0004>
- Kitayama, S., Markus, H. R., Matsumoto, H., & Norasakkunkit, V. (1997). Individual and collective processes in the construction of the self: Self-enhancement in the United States and self-criticism in Japan. *Journal of Personality and Social Psychology*, 72(6), 1245–1267. <https://doi.org/10.1037/0022-3514.72.6.1245>
- Lachman, M. E., & Weaver, S. L. (1998a). Sociodemographic variations in the sense of control by domain: Findings from the MacArthur studies of midlife. *Psychology and Aging*, 13(4), 553–562. <https://doi.org/10.1037/0882-7974.13.4.553>
- Lachman, M. E., & Weaver, S. L. (1998b). The sense of control as a moderator of social class differences in health and well-being. *Journal of Personality and Social Psychology*, 74(3), 763–773. <https://doi.org/10.1037/0022-3514.74.3.763>
- Landau, M. J., Kay, A. C., & Whitson, J. A. (2015). Compensatory control and the appeal of a structured world. *Psychological Bulletin*, 141(3), 694–722. <https://doi.org/10.1037/a0038703>
- Little, T. D., Preacher, K. J., Selig, J. P., & Card, N. A. (2007). New developments in latent variable panel analyses of longitudinal data. *International Journal of Behavioral Development*, 31(4), 357–365. <https://doi.org/10.1177/0165025407077757>
- Ma, A., Axt, J., & Kay, A. C. (2019). A control-based account of stereotyping. *Journal of Experimental Social Psychology*, 84, Article 103819. <https://doi.org/10.1016/j.jesp.2019.103819>
- Ma, A., & Kay, A. C. (2017). Compensatory control and ambiguity intolerance. *Organizational Behavior and Human Decision Processes*, 140, 46–61. <https://doi.org/10.1016/j.obhdp.2017.04.001>
- Ma, A., Landau, M. J., Narayanan, J., & Kay, A. C. (2017). Thought-control difficulty motivates structure seeking. *Journal of Experimental Psychology: General*, 146(8), 1067–1072. <https://doi.org/10.1037/xge0000282>
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224–253. <https://doi.org/10.1037/0033-295X.98.2.224>
- Markus, H. R., & Kitayama, S. (1994). A collective fear of the collective: Implications for selves and theories of selves. *Personality and Social Psychology Bulletin*, 20(5), 568–579. <https://doi.org/10.1177/0146167294205013>
- Morling, B., & Evered, S. (2006). Secondary control reviewed and defined. *Psychological Bulletin*, 132(2), 269–296. <https://doi.org/10.1037/0033-2909.132.2.269>
- Morling, B., Kitayama, S., & Miyamoto, Y. (2002). Cultural practices emphasize influence in the United States and adjustment in Japan. *Personality and Social Psychology Bulletin*, 28(3), 311–323. <https://doi.org/10.1177/0146167202286003>
- Morling, B., & Lamoreaux, M. (2008). Measuring culture outside the head: A meta-analysis of individualism–collectivism in cultural products. *Personality and Social Psychology Review*, 12(3), 199–221. <https://doi.org/10.1177/1088868308318260>
- Mu, Y., Kitayama, S., Han, S., & Gelfand, M. J. (2015). How culture gets embrained: Cultural differences in event-related potentials of social norm violations. *Proceedings of the National Academy of Sciences of the United States of America*, 112(50), 15348–15353. <https://doi.org/10.1073/pnas.1509839112>
- Neuberg, S. L., & Newsom, J. T. (1993). Personal need for structure: Individual differences in the desire for simpler structure. *Journal of Personality and Social Psychology*, 65(1), 113–131. <https://doi.org/10.1037/0022-3514.65.1.113>
- Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic versus analytic cognition. *Psychological Review*, 108(2), 291–310. <https://doi.org/10.1037/0033-295X.108.2.291>
- Pelto, P. J. (1968). The differences between “tight” and “loose” societies. *Society*, 5(5), 37–40. <https://doi.org/10.1007/BF03180447>
- Peysakhovich, A., Nowak, M. A., & Rand, D. G. (2014). Humans display a ‘cooperative phenotype’ that is domain general and temporally stable. *Nature Communications*, 5(1), Article 4939. <https://doi.org/10.1038/ncomms5939>
- Pittman, N. L., & Pittman, T. S. (1979). Effects of amount of helplessness training and internal–external locus of control on mood and performance. *Journal of Personality and Social Psychology*, 37(1), 39–47. <https://doi.org/10.1037/0022-3514.37.1.39>
- Pittman, T. S., & D’Agostino, P. R. (1989). Motivation and cognition: Control deprivation and the nature of subsequent information processing. *Journal of Experimental Social Psychology*, 25(6), 465–480. [https://doi.org/10.1016/0022-1031\(89\)90001-2](https://doi.org/10.1016/0022-1031(89)90001-2)
- Presson, P. K., & Benassi, V. A. (1996). Illusion of control: A meta-analytic review. *Journal of Social Behavior and Personality*, 11(3), 493–510.
- Richard, F. D., Bond, C. F., Jr., & Stokes-Zoota, J. J. (2003). One hundred years of social psychology quantitatively described. *Review of General Psychology*, 7(4), 331–363. <https://doi.org/10.1037/1089-2680.7.4.331>
- Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of*

- Personality and Social Psychology*, 42(1), 5–37. <https://doi.org/10.1037/0022-3514.42.1.5>
- Saad, L. (2014, January 29). *Not as many U.S. States lean democratic in 2013*. Gallup. <https://news.gallup.com/poll/167030/not-states-lean-democratic-2013.aspx>
- Salter, P. S., & Adams, G. (2016). On the intentionality of cultural products: Representations of Black history as psychological affordances. *Frontiers in Psychology*, 7, Article 1166. <https://doi.org/10.3389/fpsyg.2016.01166>
- Salter, P. S., Adams, G., & Perez, M. J. (2018). Racism in the structure of everyday worlds: A cultural-psychological perspective. *Current Directions in Psychological Science*, 27(3), 150–155. <https://doi.org/10.1177/0963721417724239>
- Savani, K., Morris, M. W., Naidu, N. V. R., Kumar, S., & Berlia, N. V. (2011). Cultural conditioning: Understanding interpersonal accommodation in India and the United States in terms of the modal characteristics of interpersonal influence situations. *Journal of Personality and Social Psychology*, 100(1), 84–102. <https://doi.org/10.1037/a0021083>
- Savani, K., Wadhwa, M., Uchida, Y., Ding, Y., & Naidu, N. V. R. (2015). When norms loom larger than the self: Susceptibility of preference-choice consistency to normative influence across cultures. *Organizational Behavior and Human Decision Processes*, 129, 70–79. <https://doi.org/10.1016/j.obhdp.2014.09.001>
- Seligman, M. E. (1975). *Helplessness: On depression development and death*. A series of books in psychology. WH Freeman.
- Shweder, R. A. (1991). *Thinking through cultures: Expeditions in cultural psychology*. Harvard University Press.
- Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology*, 89(6), 845–851. <https://doi.org/10.1037/0022-3514.89.6.845>
- Strang, S., Hoeber, C., Uhl, O., Koletzko, B., Münte, T. F., Lehnert, H., Dolan, R. J., Schmid, S. M., & Park, S. Q. (2017). Impact of nutrition on social decision making. *Proceedings of the National Academy of Sciences of the United States of America*, 114(25), 6510–6514. <https://doi.org/10.1073/pnas.1620245114>
- Triandis, H. C. (1972). *The analysis of subjective culture*. Wiley.
- Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review*, 96(3), 506–520. <https://doi.org/10.1037/0033-295X.96.3.506>
- Triandis, H. C. (1996). The psychological measurement of cultural syndromes. *American Psychologist*, 51(4), 407–415. <https://doi.org/10.1037/0003-066X.51.4.407>
- Uz, I. (2015). The index of cultural tightness and looseness among 68 countries. *Journal of Cross-Cultural Psychology*, 46(3), 319–335. <https://doi.org/10.1177/0022022114563611>
- Vandello, J. A., & Cohen, D. (1999). Patterns of individualism and collectivism across the United States. *Journal of Personality and Social Psychology*, 77(2), 279–292. <https://doi.org/10.1037/0022-3514.77.2.279>
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063–1070. <https://doi.org/10.1037/0022-3514.54.6.1063>
- Whitson, J. A., & Galinsky, A. D. (2008). Lacking control increases illusory pattern perception. *Science*, 322(5898), 115–117. <https://doi.org/10.1126/science.1159845>
- Whitson, J. A., Liljenquist, K. A., Galinsky, A. D., Magee, J. C., Gruenfeld, D. H., & Cadena, B. (2013). The blind leading: Power reduces awareness of constraints. *Journal of Experimental Social Psychology*, 49(3), 579–582. <https://doi.org/10.1016/j.jesp.2012.10.009>
- Yamaguchi, S. (2001). Culture and control orientations. In D. Matsumoto (Ed.), *The handbook of culture and psychology* (pp. 223–243). Oxford University Press.

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