ABSTRACT

Title of Dissertation: WORLDS UNTO THEMSELVES: TIGHTNESS-LOOSENESS AND SOCIAL CLASS

Jesse R. Harrington, Doctor of Philosophy, 2017

Dissertation Directed by: Professor Michele Gelfand
Department of Psychology

Past research has convincingly demonstrated that social classes are culturally distinct entities with their own identities, values, beliefs, and customs. In short, they are "worlds unto themselves." In this dissertation, I argue that social class cultural differences—particularly between the middle class and the working class—are also expressed in terms of *tightness-looseness*, or the degree to which a cultural entity has strong norms and low tolerance for norm deviance (*tight*) or weak norms and high tolerance for norm deviance (*loose*). Specifically, it is predicted that the working class is comparatively tighter relative to the middle class. In a series of six studies using survey, archival, and behavioral methods, this prediction found support. The working class had tighter perceptions of general life and specific domains (e.g., the workplace), endorsed tighter values, perceived rules more positively, were higher in traits like need for structure, conscientiousness, and conventionalism, perceived moral "transgressions" to be less justifiable, exhibited lower creativity, and were exposed to higher ecological threat. Working class adults were also found to exhibit higher explicit bias toward socially "deviant" individuals and greater xenophobia, and working-class children were quicker

and more likely to protest normatively incorrect actions made by a peer. Finally, it was found that working class students exhibited poorer outcomes in their first year of college due to a greater preference for simplicity—a psychological trait related to working class tightness. Overall, this research suggests that tightness-looseness is an important cultural difference between social class groups.

WORLDS UNTO THEMSELVES:
TIGHTNESS-LOOSENESS AND SOCIAL CLASS

by

Jesse R. Harrington

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Advisory Committee:
Professor Michele Gelfand, Chair
Professor Jonathan Beier
Professor Paul Hanges
Professor Arie Kruglanski
Professor Rebecca Ratner, Dean's Representative
Professor Jennifer Wessel

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Introduction and Overview

Social classes have long been a stable feature throughout the vast majority of both historical and modern societies. More than simply a label of social and economic standing, social classes engender distinct lifestyles, traditions, behaviors, and values among the individuals that comprise them. This has not only resulted in drastic similarities between individuals that constitute a given social class, but also substantial differences between individuals from separate social classes as well. Marx and Engels (1848) felt that these differences stemmed from clear materialistic differences; namely, who owned the means of production and who didn't. Bourdieu (1984) pointed out that social classes yielded clear aesthetic preferences that acted as social markers for their class status within society. This helped distinguish them from people of other class backgrounds, predisposed them to endorse some behaviors and hold an aversion toward others, and perpetuate class differences across generations. Although the theories about social classes, their origin, and their outcomes for individuals are numerous, one thing is very clear: social classes are worlds unto themselves, with distinct and coherent cultural values, traditions, and narratives (Zinn, 1980) that distinguish them from other classes within a society.

In the following, I argue that social classes differ on a very important domain of cultural difference—the degree to which they hold strong (or weak) norms for behavior and the extent to which violation of these norms is not (or is) tolerated. This cultural dimension, termed *tightness-looseness*, has previously been shown to accurately describe and distinguish between cultures at many different levels of analysis (Gelfand, Nishii, & Raver, 2006; Gelfand, Raver, Nishii, Leslie, Lun, Lim et al., 2011; Harrington &

Gelfand, 2014; Ozeren, Ozmen, & Appolloni, 2013; Pelto, 1968; Plaut, Markus, Treadway, & Fu, 2012) and, for reasons that will become evident later in this manuscript, is also thought to capture important cultural differences between the working class and the middle class. In particular, it is suggested that the working class is tighter—or exhibits stronger norms and lower tolerance for deviance—relative to the middle class. More than this, social class differences in tightness-looseness are predicted to have very important and divergent effects on behavior and psychology in both childhood and adulthood. Naturally, this dissertation presents methods to examine these predictions in full.

This dissertation proceeds in the following manner. Chapter 1 provides an in-depth history of tightness-looseness. It traces this construct's roots in anthropology and its development as a key cultural dimension in the field of cross-cultural psychology through a comprehensive review of both theory and research. Following this, Chapter 2 reviews existing literature to illustrate and substantiate the primary assumption undergirding this dissertation; namely, that social classes comprise distinct cultural spheres and promote different values, beliefs, behaviors, and cognitions. Chapter 3 addresses the primary thesis of this dissertation. It reviews past research and theory to substantiate the claim that tightness-looseness is an important cultural variable differentiating the working class and the middle class, and one that leads to drastically different psychologies and behaviors in both adulthood and childhood. This chapter also makes specific, testable predictions to verify this argument. Finally, Chapter 4 presents six studies that test the predictions formulated in Chapter 3. Taken together, these studies

are generally found to support the main thesis and provide a convergent and coherent picture of social class differences in tightness-looseness.

CHAPTER 1:
Tightness-Looseness – Definition and Past Research

Observers have long noted that human societies differ in the degree to which they are tightly structured, have stringent rules, and impose constraints upon the people that comprise them. While writing his historical account of the Romans in the second century BCE, Polybius routinely contrasted Roman discipline, order, and rationality with Celtic impetuosity, chaos, and passion on the battlefield. Dionysius of Halicarnassus, writing a century later, noted that the Celtic "manner of fighting, being in a large measure that of wild beasts and frenzied, was an erratic procedure." While the accounts of these observers may suffer from accusations of bias and hyperbole, especially considering Julius Caeser's observations in his *Commentaries of the Gallic Wars*, it is certainly clear that these writers recognized the distinction between societies that fostered order and those that were comparatively lacking in it.

In the social science literature today, this distinction between societies and cultures is labeled tightness-looseness. Conceptually, tightness-looseness denotes the *strength of norms* and *tolerance for norm deviance* in a given cultural collective. Norm strength denotes the number of unwritten and institutionalized rules that exist as well as the degree of social and institutional pressure that individuals feel to follow them, while tolerance for norm deviance denotes the amount of punishment that results when norms are violated. By definition, tight cultural collectives have high norm strength and low tolerance for deviance, while loose cultural collectives have low norm strength and high tolerance for deviance.

In order to provide the reader with a basis for understanding the primary thesis of this dissertation—that cultural differences in tightness-looseness can be observed

between social classes—this chapter reviews tightness-looseness theory and past research, from its anthropological beginnings to its growing presence in the field of cross-cultural psychology.

Anthropological Beginnings

As a construct, tightness-looseness originated in the field of anthropology, where it was used to differentiate between the strong vs. weak social norms of primarily traditional societies (Pelto, 1968). Benedict (1934) was one of the first to write extensively about these differences in her book *Patterns of Culture*, a hallmark text in the field. Lacking the tight and loose labels, she distinguished between these societies with terms borrowed from Greek mythology and the writings of Friedrich Nietzsche (1872). Societies that were restrained and exhibited strong norms were "Apollonian" and described groups like the Native American Zuni tribe. Societies that were unrestrained and exhibited weak norms were "Dionysian" and characterized groups like the Plains Indians tribes and the indigenous Kwakwaka'wakw people of the Pacific Northwest. Barnouw (1950), by contrast, employed the term "atomistic" to describe the Chippewa, a tribal society characterized by low social integration and one with few mechanisms to enforce social solidarity and group norms. The tightness-looseness terminology only truly arose with the work of Embree (1950), who used it contrast the looser social system of Thailand with the tighter social system of Japan. These terms were later fully conceptualized and defined by Ryan and Straus (1954). Three criteria comprised their definition. First, loose societies have numerous and a wide-range of alternatives for any particular norm; in other words, norms are weak. Second, deviant behavior is well tolerated. Third, the values of formality, permanence, and solidarity are weak and

undeveloped.

Pelto (1968) revolutionized this body of work by seeking to quantify and operationalize tightness-looseness beyond the methods of ethnographic description used by his precursors. In his examination of 30 traditional societies, Pelto focused on concrete aspects of each society's social system. If they exhibited any of twelve structural features that reflected strong norms and rules—including norms for conscription of labor, theocratic political systems, corporate ownership of property, and hereditary recruitment to religious roles—they received a point. Consequently, each society could score a maximum of 12 or a minimum of 1. Pelto found that his method closely aligned with the ethnographic descriptions of these societies. The Hutterites, the Hano, and the Lugbara were found to be the tightest groups in Pelto's measure and, in the ethnographic literature, were indeed described as having strong norms and severe punishments for those that violated them. Likewise, ethnographers described the loosest scoring groups—the Kung Bushmen, the Cubeo, and the Skolt Lapps—as having weak norms, as well as greater permissiveness and fewer punishments for norm-violators.

Beyond this new operational method, Pelto's work is important for its theoretical insights into the causes of societal differences in tightness-looseness. He theorized that they arise due to the ecological realities faced by each society—in particular, their methods of food production and population density. More specifically, Pelto surmised that traditional societies with higher population densities and reliance on agricultural subsistence methods tended to be tighter, as stringent social norms ensure that individuals cooperate and live congenially in populous areas, while agriculture typically necessitates collaborative efforts by multiple individuals. On the other hand, traditional societies with

lower population densities and less reliance on agriculture could afford more freedom of behavior, especially since deviance wasn't overly harmful to the social unit, and food production (e.g., hunting or fishing) allowed for independent and non-coordinated behavior. Contemporary work by researchers in numerous social science fields substantiated Pelto's hypotheses. In anthropology, Barry, Child, and Bacon (1959) found that societies with high-accumulation subsistence methods—those more typical of agricultural societies—exhibit strict child-rearing practices that train children to be obedient, while societies with low-accumulation subsistence methods exhibit more lenient child-rearing practices that train children to be self-reliant. Similarly, the anthropologists Lomax and Berkowitz (1972) found that agricultural societies tended to be tighter due to the need for coordination that these societies necessarily require. In sociology, research by Boldt (1978a, 1988b) and Boldt and Roberts (1979) have found that societies relying on agricultural methods of production exhibit strictly defined (i.e. tighter) roles and expectations for individuals, while hunting and fishing societies are characterized by more ambiguous (i.e., looser) roles and expectations. Finally, in psychology, Berry (1967; see also Witkin & Berry, 1975) found that the Temne of Sierra Leone, characterized as a high-accumulation agricultural society, produce children that score high on measures of conformity, while the Eskimo of Baffin Island, characterized as a low-accumulation hunting society, produce children that score low on measures of conformity. Notable also is the theoretical speculation of Triandis (1977), who hypothesized that pre-literate societies would be tighter if they exhibited a complex and highly differentiated system of social organization that would necessitate strong social norms.

Transition into Cross-Cultural Psychology

While the roots of tightness-looseness theory and research lie in the field of anthropology, ethnographic methods, and research into traditional societies, it has since begun to take on a growing presence in the field of cross-cultural psychology, where researchers have employed more quantitative methods to examine tightness-looseness in modern societies. Pelto's (1968) development and use of quantitative methods, Berry's (1967) application of psychological measurements to examine the correlates of this construct in traditional societies, and the common interest in culture and the shared foundational literature between both the anthropological and cross-cultural psychological fields (Levine, 2007) were clearly instrumental in fostering this transition. However, theoretical advancements in tightness-looseness theory within the field of cross-cultural psychology only truly came with the work of Triandis (1989), Gelfand, Nishii, and Raver (2006), and Gelfand, Raver, Nishii, Leslie, Lun, Lim, and colleagues (2011).

A prominent figure in the field of cross-cultural psychology, Triandis (1989) reintroduced the tightness-looseness construct after a long dormancy. He was the first to explicate how tightness-looseness was theoretically different from and related to various prominent cultural dimensions previously established by Hofstede (1980). In particular and most importantly, he distinguished tightness-looseness from the oft confounded construct of collectivism-individualism, which describes the degree to which individuals are considered interdependent with or independent from an ingroup, the extent to which their self-identity incorporates members of that ingroup, and the predominance of individual versus ingroup goals. While highly interdependent and collectivistic societies commonly foster stronger social norms, greater mutual obligations, and are often

relatively tighter than individualistic societies—hence the confusion—strong norms can also exist in individualistic societies (e.g., Germany) or be lacking in collectivistic societies (e.g., Brazil). Consequently, while these two constructs are related, they are theoretically distinct, a notion that has been empirically affirmed by Carpenter (2000) and others (Gelfand, Raver, Nishii, Leslie, Lun, Lim et al., 2011; Harrington & Gelfand, 2014). Gelfand, Raver, Nishii, Leslie, Lun, Lim and colleagues (2011) also empirically confirmed that tightness-looseness is distinct from other notable cultural dimensions, including power distance, uncertainty avoidance, masculinity-femininity, and long-term orientation.

Triandis also begin to theorize about cultural tightness-looseness and its influence on individual cognition, personality, and behavior. In particular, he hypothesized that individuals in tighter societies were more likely to reference the public and collective aspects of their self-identity relative to individuals in looser societies, who were more likely to reference the private aspect of their self-identity. These differences in sampling, in turn, influenced the way that they perceived the world and behaved. For example, greater references to the private aspects of self-identity are likely to cause people to view social interactions as exchange relationships and rely upon their own individual values, goals, and self-defined roles when determining how to behave.

Following this revitalization of the construct, Triandis and his colleagues were the first to engage in research on tightness-looseness. In particular, Chan, Gelfand, Triandis, and Tzeng (1996) examined the degree to which people's perceptions of the meaning of specific concepts were shared in Japan (a tight culture) versus the United States (a loose culture). They postulated that the strong norms that characterize tighter

cultures should be reflected in the stringency and clarity of language. In particular, Japanese should show greater agreement about the meaning of words and concepts relative to Americans. This is precisely what they found. Specifically, Japanese showed higher agreement on word meaning when dealing with concepts related to punishment and sanctioning (e.g., truth, justice, sin), normative pressure (e.g., duty, marriage), and emotional expression (e.g., anger, hate, sadness, laughter). It is notable, however, that Americans were found to exhibit higher agreement on the meaning of the words problem, contemplation, and conflict. The researchers surmised that this effect might be due to the fact that these concepts are more acceptable and therefore more highly discussed in looser societies.

Triandis (1989) and Chan, Gelfand, Triandis, and Tzeng (1996) also began to propose distinct causes of tightness in modern societies. In particular, they reintroduced Pelto's (1968) suggestion that higher population densities produce tighter societies, given that strong, well-defined norms are required to promote smooth interpersonal interactions. Gelfand (1999) also suggested that a history of territorial conflict should promote strong norms and sanctions in order to deal with an external threat.

Despite this promising theory and research, it was only after the work of Gelfand and colleagues (Gelfand, Nishii, and Raver, 2006; Gelfand, Raver, Nishii, Leslie, Lun, Lim et al., 2011) that tightness-looseness theory fully developed and became a truly active force in the field of cross-cultural psychology.

The Development and Current State of Tightness-Looseness Theory and Research

The current state of tightness-looseness theory can ultimately be credited to the work of Gelfand, Nishii, and Raver (2006). Drawing the conceptual foundations of their

theory from the past work cited above and the eco-cultural theories of Berry (1979), they developed an extensive and comprehensive multi-level theory of tightness-looseness and fully fleshed out its relationship and effects on a variety of new variables. They predicted that tighter societies would exhibit stronger institutions and social norms and greater punishment for deviance. They also hypothesized that these societal level variables would have cross-level effects on individual psychological characteristics, such that members of tight or loose societies would exhibit features adaptive to these environments. Relative to individuals from loose societies, they stated that members of tight societies would exhibit a greater sense of felt accountability, higher accessibility to societal normative structures, greater conformity, greater prevention focus, higher self-regulatory strength, and a greater adaptor (vs. innovator) style of cognition and problem solving. In other words, individuals in tight societies should be more likely to abide by social norms and social expectations even when they would prefer to do otherwise, closely monitor their own behavior, take few risks in order to avoid costly mistakes that could lead to punishment, be disciplined and cautious, seek stability, and rely on past procedures when determining how to solve or approach a problem. Individuals in loose societies, by contrast, are more likely to rely more on their own desires and goals when determining their actions, use more innovative problem strategies that may deviate from traditional methods, and can afford to monitor their behavior less closely, take more risks and be promotion focused, be more open to change, and be more impulsive. It was also predicted that individual behavior in tighter societies would be more homogenous and less variable.

Gelfand, Nishii, and Raver (2006) also advanced tightness-looseness theory by extending it to organizations. In particular, they suggested that organizations within tight

or loose societies would also tend to be similarly tight or loose, respectively. Tighter organizations would be emphatic about rules, operational predictability, have stringent recruitment, selection, training, and performance-monitoring strategies, and tend to exhibit greater order, cohesion, stability, and resistance to change. On the other side, looser organizations would be concerned with flexibility, innovation, have more adaptive recruitment, selection, training, and performance-monitoring strategies, and exhibit greater creativity and tolerance for organizational change. In addition to this, they hypothesized that tighter organizations would have stronger organizational cultures and stronger alignment in terms of practices across the organization relative to looser organizations. It was also surmised that societal tightness moderated the link between organizational practices and organizational outcomes. More specifically, practices that required greater accountability, monitoring, and control are more successful in organizations within tight societies, while practices that require creativity and innovation are more successful in organizations with loose societies. Finally, the authors also predicted that organizational tightness-looseness would be influenced in a bottom-up manner by both organizational context and member personality. For example, organizations in high-risk endeavors are more likely to be tighter relative to those in low-risk endeavors given that they have more to lose if they make a mistake. Likewise, organizations comprised of individuals who are cautious and high in prevention focus are likely to push their organization in a tighter direction. To sum up, Gelfand, Nishii, and Raver's (2006) paper has had an immense influence on tightness-looseness theory and research. Given the breadth of their theory and its applicability to many streams of research, it has spawned an abundance of research and theoretical additions in a number

of diverse fields, including social psychology, social neuroscience, and industrial-organizational psychology.

It is arguable, however, that the research conducted by Gelfand, Raver, Nishii, Leslie, Lun, Lim and colleagues (2011) has had an even greater impact the rise of tightness-looseness research. Not only did they test and confirm the non-organizational predictions proposed by Gelfand, Nishii, and Raver (2006), but they also developed and tested new theory concerning the ecological causes of societal tightness-looseness. Moreover, they demonstrated that tightness-looseness is a prominent dimension that distinguishes modern cultures and societies rather than simply traditional ones.

To accomplish this, Gelfand, Raver, Nishii, Leslie, Lun, Lim and colleagues (2011) developed and employed a 6-item measure of tightness-looseness and sampled 6,823 individuals from 33 different nations. First and foremost, they found high agreement on perceptions of social norm strength and deviance tolerance within nations. This clearly demonstrates that tightness-looseness is a cultural dimension, as it is a highly shared, collective construct. Second, they found substantial national variation on their 6-item measure, indicating that tightness-looseness unquestionably distinguishes between and captures important differences between modern nations. Loose nations included Venezuela, Australia, Estonia, Greece, Hungary, Israel, the Netherlands, New Zealand, Ukraine, and the United States, while tighter nations included Germany, India, Malaysia, Japan, Mexico, Pakistan, Singapore, Norway, China, Portugal, South Korea, and Turkey. Importantly, these 33-nations were found to exhibit expected patterns on a variety of convergent indicators of tightness-looseness, bolstering the validity of the 6-item measure. For example, tighter nations were found to have greater pressures towards

uniformity (i.e., a greater percentage of population with left hand dominance and greater accuracy of clocks in major cities), less tolerant attitudes toward deviant behavior (e.g., less tolerance of "unrestricted" sociosexuality orientation and excessive alcohol consumption), greater preference for political systems that have a strong leader or are ruled by the army, stronger endorsement of the notion that the most important responsibility of the government is to maintain order in society, and higher scores on various measures of ethnocentrism and deviance intolerance, including stronger agreement that a society's ways of life need to be protected from foreign influence, greater desire not to have immigrants as neighbors, a lower percentage of the population that are international migrants, and greater agreement with the idea that one's culture is superior to others.

This work is also notable for its theoretical and empirical insights into the potential causes of societal differences in tightness-looseness. While anthropological theory was singularly emphatic about the influence of subsistence method and population density on the tightness-looseness of traditional societies (Pelto, 1968), Gelfand and colleagues felt that it was the overall presence of threatening ecological conditions that was the primary cause of tightness-looseness differences between modern societies. More specifically, they theorized that ecological threats necessitate increased social coordination, which ultimately allows societies to confront and cope with these threats. As a consequence of this necessity, societies develop stronger social norms and greater punishments for norm deviance in order to foster greater coordination. Societies that lack exposure to serious ecological threats and don't require extensive social coordination to meet them, on the other hand, can afford to have weaker norms and more tolerance of

norm deviance. In sum, societies are adapted to their particular environments and histories. Importantly, this notion is inclusive of both population density—which can be a threat to a society for reasons of resources and space—and subsistence method—as low agricultural yields and food scarcity is typically threatening—but also highlights other important variables that may contribute to differences in tightness-looseness. Indeed, while the researchers found that societal tightness did correlate with higher historic (1500 CE) and projected (2050) population density and a scarcity of food (including both fat and protein sources), lower food production, greater food deprivation, and less farmland, they also found that tighter societies had a scarcity of safe water and clean air, a greater prevalence of historic pathogens and present-day death rates due to communicable diseases, a greater vulnerability to various natural disasters, and had been subject to numerous territorial threats from 1918 to 2001.

The 33 nations incorporated into this study also exhibited variable socio-political institutions that were theoretically consistent with the tightness-looseness construct. In particular, tightness was associated with greater autocratic governing bodies, a less open and free media, lowered access to new information and technology, fewer political rights and civil liberties, retention of the death penalty, a lower percentage of people who report participating in collective action such as boycotts and strikes, a greater percentage of people stating that they would never participate in collective action, and a greater importance of God and religious attendance.

As predicted by Gelfand, Nishii, and Raver (2006), the researchers also demonstrated that societal tightness-looseness influences individual perceptions, personality traits, and psychological characteristics. In particular, they found that

individuals in tighter nations tended to exhibit greater prevention-focus, more self-regulation and impulse control, higher need for structure, and increased self-monitoring relative to individuals in looser nations. Individuals in tighter societies also perceived their worlds to be more constraining relative to individuals from looser societies. Using a measure adapted from Price and Bouffard (1974), they prompted participants to judge the appropriateness of 15 behaviors (e.g., curse/swear, argue, sing, eat) across 12 different contexts (e.g., workplace, bus, classroom, library). They found that individuals from tighter nations perceived many behaviors to be more unacceptable across all contexts relative to individuals from looser nations. In other words, individuals from tighter nations feel more constrained across most situations in their daily lives. Notably, this measure of situational constraint was significantly and positively related to all of the above psychological characteristics. This indicates that these psychological characteristics may potentially arise due to exposure to highly constraining environments.

Finally, Gelfand, Raver, Nishii, Leslie, Lun, Lim and colleagues (2011) conducted multi-level structural equation analyses that validated a general model of their theory; namely, that ecological threats and socio-political institutions are related and mutually influence the overall tightness or looseness of a society, which results in stronger or weaker recurrent contexts that produce higher or lower perceptions of situational constraint that, in turn, engenders particular psychological characteristics that are endemic to and adaptive for members of each society.

Other work has started to examine whether the predictions made by Gelfand, Raver, Nishii, Leslie, Lun, Lim and colleagues (2011) extend to other levels of analysis and can be captured using alternative methods of measurement. Harrington and Gelfand

(2014) investigated whether tightness-looseness differences, as well as its ecological precursors and psychological outcomes, can be found within nations—in particular, at the state level in the United States. They employed an archival method of measurement, wherein they used existing data that reflected facets of tightness-looseness to create an aggregate index of the construct. Their final index included 9-items. Four items reflected strength of punishment, including the legality of corporal punishment in schools, the percentage of students punished using corporal punishment in schools, the rate of executions from 1976 to 2011, and the severity of punishment for violating laws (specifically, marijuana laws). Two items reflected permissiveness and latitude, including the ratio of dry to total counties per state (indicating access to alcohol) and the legality of same-sex civil unions. Two items assessed the presence of institutions—specifically, religious institutions—that reinforce moral order and constrain behavior, including state-level religiosity and the percentage of individuals claiming no religious affiliation. The final item was the percentage of the total population that is foreign. This served as an estimate of the degree to which a state exhibits high diversity, an indicator of looseness. Overall, the index was internally consistent ($\alpha = 0.84$) and was found to represent a single construct through factor analysis. Most importantly, the researchers found extensive variation in tightness-looseness at the state and regional level. The top ten tightest states were Mississippi, Alabama, Arkansas, Oklahoma, Tennessee, Texas, Louisiana, Kentucky, South Carolina, and North Carolina, while the top ten loosest states were California, Oregon, Washington, Nevada, Maine, Massachusetts, Connecticut, Hawaii, New Hampshire, and Vermont. Regionally, the South was the tightest, the West and the Northeast were the loosest, and the Midwest fell in the middle.

Paralleling the findings of Gelfand, Raver, Nishii, Leslie, Lun, Lim and colleagues (2011), Harrington and Gelfand (2014) found that their index was associated with a variety of convergent indicators in theoretically consistent ways. In particular, tighter states were found to desire greater media restrictions, exhibit greater dogmatic and less-flexible notions of morality, perceive immoral and norm-deviant actions as more socially harmful, desire much greater behavioral constraint (e.g., not distributing condoms in high schools, not having same-sex marriage), desire stricter law enforcement, endorse the use of any force necessary to maintain law and order, possess lower feelings of personal control, have a lower circulation of pornographic magazines, exhibit lower support for civil liberties, have more insularity (i.e., they exhibit greater endorsement of isolationist economic practices and policies, such as buying American products exclusively and supporting government restriction of imported products), exhibit lower residential mobility, and display greater conservative political orientation and voting patterns (i.e., voting for Mitt Romney in the 2012 Presidential Election).

Harrington and Gelfand (2014) also found personality differences between tight and loose states that were consistent with findings at the national level. Specifically, they found that individuals from tighter states had higher trait conscientiousness, a personality characteristic that has been associated with greater impulse control, cautiousness, self-discipline, ability to delay gratification, desire for orderliness, and conformity to norms (John, Naumann, & Soto, 2008). Individuals from looser states, in contrast, had greater trait openness, which has been associated with nontraditional values and beliefs, breadth of experience, interest and curiosity toward new ideas, tolerance of other cultures, and a preference for originality (Rentfrow, Gosling, & Potter, 2008; John, Naumann, & Soto,

2008). Convergent measures supported this finding. Relative to individuals from looser states, individuals from tighter states indicated that they were less likely to take chances, less likely to try new things at least once, and were less interested in the cultures of other countries.

Finally, Harrington and Gelfand (2014) also found that tightness was related to greater ecological threat at the state level. In particular, tightness was associated with higher death rates due to heat, lightning, and storms and floods, higher tornado risk, poorer environmental and ecological health, higher rates of food insecurity and food-insecure households, greater poverty rates, higher rates of death due to influenza and pneumonia, higher rates of HIV and Chlamydia, higher disease and parasite prevalence, greater infant, child, and overall mortality rates, lower life expectancy at birth, and higher perceptions of ambient threat, indexed by higher rates of military recruitment and a belief that more money should go toward defense spending. Additionally, there was a strong, positive link between tightness and the percentage of slave-owning families as reported in the 1860 U.S. Census. States with high slave-ownership were effectively conquered and occupied following the American Civil War. This measure, therefore, serves as a proxy of territorial threat and external conflict. Moreover, as Confederate Vice Present Alexander Stephens indicated in his 1861 Cornerstone Speech, the South was specifically fighting for the preservation of slavery. Consequently, post-war occupation coupled with the loss of what was perceived to be a fundamental piece of Southern ideology and economy was undoubtedly a very threatening event for many people in these states. It is not surprising, then, that these states are tighter today.

It is notable that Harrington and Gelfand did not find a link between tightness and

population density at the state level. This may be due to the fact that U.S. states have comparatively low population density compared to rates at the international level. For example, New Jersey is the United States' densest state with a rate of 1,195.5 people per square mile in 2010 according to the U.S. Census Bureau. Comparatively, Singapore, the densest nation included in the research of Gelfand, Raver, Nishii, Leslie, Lun, Lim and colleagues (2011), has a rate of 18,782.70 people per square mile in 2010 according to Singapore's Department of Statistics.

In sum, Harrington and Gelfand (2014) clearly demonstrate that the principles of tightness-looseness transcend levels of analysis and that tightness-looseness can be assessed via multiple measurement approaches. They have also augmented tightness-looseness research and theory in other ways. One of the primary drives in tightness-looseness theory is the idea of adaptivity. Drawing on eco-cultural theoretical traditions (Berry, 1979), tightness-looseness theory advances the notion that societies and individual psychologies are adapted to their respective environments (Gefland, Nishii, & Raver, 2006). In other words, tight and loose societies, as well as the individuals that comprise them, exhibit comparative pros and cons that make sense given their needs. For example, the constellations of psychological characteristics common to tight and loose environments allow individuals to function well within those contexts. In an environment that has strong norms and high threat—both in terms of ecological events and social punishment for norm violation—the primary goal of the individual is to avoid and prevent a variety of negative outcomes. Consequently, it is adaptive to be cautious, to plan ahead, to seek out and establish structure, and to be conscientious. While this may come at the expense of greater creativity, exposure to new ideas, and innovation, these

goals are not primary in tight contexts. Alternatively, in environments where norms are weak and threat is low, an individual's primary goal may be promote various positive outcomes. Consequently, it pays to be more impulsive, be less desirous of structure, and to be more open to new ideas and change. This may produce a comparative lack of discipline and self-control, but this may be negated by the fact that looser environments are more tolerant of these characteristics.

Harrington and Gelfand (2014) sought to validate this idea by examining the relationship between state level tightness-looseness and various state level outcomes. They found that tighter states had lower social disorganization, lower homelessness, greater law enforcement per capita, lower illicit drug use, and lower binge drinking. These outcomes make sense given that the primary goal of tight states and tight societies is to maintain order in an environment high in ecological threat. Any other goals in this environmental context are secondary. However, this results in clear drawbacks, as expected. Tight states were also found to have higher incarceration rates, lower creativity and innovation (i.e., fewer patents per capita and fewer fine artists per capita), greater incidence of employment discrimination per capita, lower political and legal gender equality, fewer minority-owned firms, and lower happiness. In comparison, loose states, which are not pressed to maintain the greatest order possible, can afford to better address issues of social justice and foster innovation at the cost of some social instability.

Subsequent work has substantiated the causality implicit in the model proposed by Gelfand, Raver, Nishii, Leslie, Lun, Lim and colleagues (2011) and in the work conducted by Harrington and Gelfand (2014). Using agent-based computer simulation and evolutionary game theoretic models, Roos, Gelfand, Nau, and Lun (2015) found that

groups of agents exposed to high environmental threat develop greater norm-adherence and engage in greater punishment when others violate social norms. Notably, these developments are necessary for these agents and their groups to survive in the simulation model. In all, this suggests that societal tightness and its effects on individual behavior is caused by exposure to ecological threat and is an adaptive response to it.

Although both very tight and very loose societies appear to exhibit comparative advantages and disadvantages, more recent work suggests that societies which enjoy the most optimal outcomes, in an absolute sense, typically lie in the middle of both extremes. Harrington, Boski, and Gelfand (2015) compared the tightness-looseness scores drawn from the work of Gelfand, Raver, Nishii, Leslie, Lun, Lim and colleagues (2011) with a variety of societal outcomes in 32 nations. They found a robust curvilinear effect such that nations with moderate scores on the tightness-looseness scale exhibited the best psychosocial (higher happiness and lower dysthymia and suicide rates), health (higher life expectancy and lower mortality rates from cardiovascular diseases and diabetes), and economic and political outcomes (higher gross domestic product per capita and lower risk for political instability) relative to nations that were very tight or very loose. These findings are consistent with other work that has linked greater tightness with increased lethality for terrorist attacks (Gelfand, LaFree, Fahey, & Feinberg, 2013), as nations with very strong social norms and little recourse for political action may provoke extreme methods to invoke socio-political change. Indeed, Harrington, Boski, and Gelfand (2015) suggest that the poorer outcomes in very tight and very loose nations may result from a general lack of perceived control by members of these societies. Very tight societies, for example, severely constrain individual choice and necessitate constant self-monitoring,

while very loose societies provide few guiding principles and engender high social disorganization and unpredictability. As a consequence, individuals feel a lack of control over their own choices and behavior in the first case and, due to the unpredictability and randomness of their environments, the inability to predict and control the outcomes of their choices and behavior in the second. Given that the need for control has been identified as a core human need (Church, Katigbak, Locke, Zhang, Shen, Vargas-Flores et al., 2012; Fiske, 2003), this may result in poorer national level outcomes in very tight and very loose nations.

Other researchers have been pushing the boundaries of tightness-looseness research in a more micro-level direction. In particular, Mu, Kitayama, Han, and Gelfand (2015) found that cultural differences in tightness-looseness are detectable at the neurobiological level. They employed electroencephalography (EEG) to examine how individuals from tight and loose nations—China and the United States, respectively—differ at the neural level when exposed to a social norm violation paradigm. To test the neural substrates of tightness-looseness cultural differences, the researchers examined the N400 response, which is a negative-going deflection that peaks at approximately 400ms and occurs following exposure to unexpected semantic stimuli. Given that norms cultivate particular expectations about behavior, the researchers reasoned that social norm violations might similarly cultivate an N400 response among all participants. However, because behavioral expectations are stronger in tighter nations and norm violations more unexpected, these responses also should show cross-cultural variability. In order to examine responses to norm violations, participants were asked to rate how appropriate a behavior (e.g., dancing) was in three different situations, with each situation crafted so

that the behavior was either strongly inappropriate, weakly inappropriate, or very appropriate. In the case of dancing, for example, the strongly inappropriate situation was an art museum, the weakly inappropriate situation was a subway platform, and the appropriate situation was a tango lesson. This task was conducted with 34 separate behavior-situation configurations and participants' EEG signals were recorded during the task. As expected, the researchers found a culture-general N400 response in the central and parietal brain regions among all participants when they were exposed to the strong and weak inappropriate behavior-situation stimuli. They also found cross-cultural differences. Only Chinese participants exhibited an N400 response to norm violation in the frontal and temporal regions, an area previously found to be associated with judgments of the appropriateness of a variety of human actions (Bach, Gunter, Knoblich, Prinz, & Friederici, 2009; Gunter & Bach, 2004; Reid & Striano, 2008). Notably, Chinese also rated more behaviors as inappropriate in the strong and weak inappropriate conditions. It was found that frontal N400 responses positively predicted a variety of attitudes and behaviors previously associated with greater tightness. In particular, this response was associated with greater perceptions of constraint in daily life, greater concern with territorial defense, greater ratings of inappropriateness in the strong situation-behavior ratings, higher beliefs of cultural superiority, greater self-control, and poorer performance on an assessment of creativity. Finally, the researchers examined and found no cultural difference in N400 response as evoked by semantic violations, indicating that the cross-cultural differences found seem to be solely due to social norm violations.

Tightness-looseness researchers have also taken their work in other novel

directions. Mandel and Realo (2015), for example, have investigated an important neglected element in tightness-looseness research; namely, the longitudinal stability of tightness-looseness and its degree of change over time. Using large and representative samples from Estonia, the researchers found that tightness-looseness changed relatively little and slowly over the course of a decade. Importantly, these findings suggest that tightness-looseness is a stable descriptor of societies and further reinforces the notion that it is an important dimension of culture. Others, such as Uz (2015), have attempted to develop other methods of measuring tightness-looseness, but have often lost sight of the conceptual definition of the construct. For example, Uz's measure of tightness-looseness assesses societal homogeneity, a related but distinct construct that has been theorized to be both a potential antecedent (Triandis, 1989) and/or outcome of tightness-looseness (Carpenter, 2000) rather than part of the definition itself.

Given the organizational orientation of Gelfand, Nishii, and Raver (2006), the field of industrial-organizational psychology has also seen a steady rise in tightness-looseness research. Using meta-analysis, Taras, Kirkman, and Steel (2010) found that societal tightness-looseness moderated the effect that other cultural dimensions had upon organizational outcomes. More specifically, the relationship between cultural dimensions and various organizational outcomes was stronger in tighter versus looser nations. This makes sense given the narrower socialization that occurs in tighter societies. Crossland and Hambrick (2011) found that national tightness-looseness influences CEO discretion. As predicted given the higher constraint in tighter societies, CEO's have comparatively less discretion in tighter nations. Degree of discretion, in turn, is negatively associated with the degree to which CEO actions influence organizational performance. Other

researchers have found evidence that tightness increases behavioral synchronicity. In particular, Eun, Wang, and Xiao (2015) found that tighter countries exhibit more stock price co-movement, which is linked to lower market-wide and firm-specific variation in these societies.

I/O psychologists have also investigated the relationship between tightness-looseness and creativity. Chua, Roth, and Lemoine (2014) found that individuals from looser cultures are better at engaging and succeeding on creative tasks from foreign cultures, while individuals from tight cultures do poorer on foreign creative tasks and are less receptive to creative ideas from foreign cultures. This is consistent with evidence from Harrington and Gelfand (2014), who found poorer creativity outcomes for tighter states. However, the relationship between tightness-looseness and creativity may be more complex than it appears at first glance. Chua, Roth, and Lemoine also found that individuals from tighter cultures are successful on creative tasks when they come from their own culture or cultures similar to them, while Ozeren, Ozmen, and Appolloni (2013) found that organizational tightness was positively associated with behavioral innovation in the Italian marble industry and negatively associated with behavioral innovation in the Turkish marble industry.

Finally, I/O psychologists have also examined the relationship between tightness-looseness and leadership. Toh and Leonardelli (2012) found that tighter nations generally had fewer women emerge into top leadership positions relative to looser nations, primarily because increased tightness engenders greater resistance to changing the notion that leaders are men. However, they also found that when egalitarian norms are predominant, tighter nations have greater leadership emergence for women relative to

looser nations. In sum, tightness appears to sustain existing practices, egalitarian or not. Aktas, Gelfand, and Hanges (2015) found that tightness-looseness influences perceptions of effective leadership. Using national tightness-looseness data from Gelfand, Raver, Nishii, Leslie, Lun, Lim and colleagues (2011) and leadership preferences from the GLOBE Study (House, Hanges, Javidan, Dorfman, & Gupta, 2004), they predicted and found that tightness is positively related to the endorsement of autonomous leadership (i.e., leaders who make independent decisions without relying on others) and negatively related to the endorsement of charismatic and team-oriented leadership, even after controlling for other dimensions of culture. The researchers surmise that autonomous leadership is valued in tighter societies because it produces quick decision-making and generally reinforces the status quo relative to team-oriented leadership, which is a boon for those higher in the psychological need for closure. The researchers also suspect that the visionary and inspirational tactics associated with charismatic leadership, which often upset the status quo, are viewed negatively in tighter cultures because they tend to be counter to dominant prevention-orientation of those societies. However, this is also the reason that individuals in looser cultures, which are often more open and innovative, view charismatic leadership styles as more effective.

Summary

From its beginnings in anthropology through its recent meteoric rise in cross-cultural psychology, research on tightness-looseness has clearly demonstrated the utility of this construct in differentiating societies and cultures. In addition, it has outlined the theoretical influence that tightness-looseness has on various levels of analysis, including societal and organizational outcomes, individual differences in personality traits,

psychological characteristics, and behavior, and has also elucidated the theoretical reasons why certain cultures or societies are tighter or looser than others. Collectively, it has utilized a variety of measures to uncover the construct, including ethnography, observation, self-report surveys, and archival methods, and has shown itself to be distinct from other prominent cultural dimensions.

Yet, the odyssey of tightness-looseness research is still only in its inception, and many avenues of research remain open. Given that tightness-looseness research has been both theorized and shown to differentiate many types of social groupings, including traditional societies (Pelto, 1968), modern nations (Gelfand, Raver, Nishii, Leslie, Lun, Lim and colleagues, 2011), states (Harrington & Gelfand, 2014), organizations (Gelfand, Nishii, & Raver, 2006; Ozeren, Ozmen, & Appolloni, 2013), and cities (Plaut, Markus, Treadway, & Fu, 2012), it stands to reason that it may also differentiate other cultural groupings as well. As I hope to demonstrate in the subsequent chapters of this dissertation, tightness-looseness may be a particularly prominent cultural variable that differentiates the working class and the middle class, with equally influential results on their general psychological tendencies. Before this discussion, however, it remains important to address a particular assumption undergirding this manuscript. Namely, does social class constitute a cultural variable in the first place?

CHAPTER 2:
"Worlds Unto Themselves" – Social Class as Culture

Dickens' (1861) *Great Expectations* follows the life of Pip, an orphan and blacksmith's apprentice turned gentleman in Victorian-era England. With Pip's rise into higher status, he learns that his new class comes with its own set of identifying parameters and customs and, as a consequence, learns to dress, talk, and act according to its dictates. In short, Dickens' novel portrays the fact that social classes comprise more than economic or social position—they have clear cultural differences. They are "worlds unto themselves." This is an important assumption undergirding the primary thesis of this dissertation. Consequently, this chapter aims to establish this fact through the examination of past theory and research in the social sciences.

Social Class as Culture: Past Research

The notion that social classes comprise distinct cultural worlds has been promulgated and observed by writers, theorists, researchers, and social critics for decades (see Bourdieu, 1990; Fussell, 1983; Kohn, 1969; Schooler, 2007; and Williams, 2012, for a few examples), if not centuries (e.g., see Chaucer's *Canterbury Tales*). Despite its tongue-in-cheek nature, Paul Fussell's (1983) *Class: A Guide Through the American Status System* provides a prime example of this in its description of how social classes differentially define and perceive success. For the working-class "proles," success is defined by ownership of expensive items and conspicuous consumption, while the middle class typically defines success as attainment of higher education and degrees. In contrast to both, success in the upper class is more often about network connections, leisure time, and passive income. As this chapter will highlight, social scientists in the 20th and 21st centuries have greatly contributed to this literature by applying rigorous theory and

empirical methods to examine the issue of social class cultural differences in greater detail.

Much of the existing work in the social scientific fields—and psychology, in particular—has focused on the two most populous and salient social classes found in modern societies: the predominantly "blue-collar" working class and the largely "white-collar" middle class. Similar to the more intuitive and well-known cultural differences found between nations and ethnic groups, the working class and the middle class both exhibit distinct and highly shared intra-class experiences that come to define their identity and shape their worldview. The working class tends to have low status, highly structured, and often physically oriented occupations, lower income, and lower educational attainment—in other words, they have completed high school but do not hold a college degree (DiMaggio, 2012). In contrast, the middle class tends to have higher status, more unstructured, and less physically intensive occupations, higher income, and higher education—specifically, a college degree or greater (DiMaggio, 2012). It is important to note that these tangible variables are what define social class. They get at true differences in life structure and experience and are typically a better measure of the social class construct than one's own perceived social class status. As most Americans consider themselves middle class (DiMaggio, 2012), for example, subjective measures of social class can often be problematic.

Other differences in experience between these two classes abound. Relative to the middle class, the working class constantly faces the potential for sliding into poverty or "hard living" (Howell, 1972; Williams, 2012), tend to work in occupations that offer a significant possibility of injury, dismemberment, or death on a daily basis (Levison,

1974), face a higher degree of supervision and structure in their daily lives and workplaces (Kohn, 1969; Schooler, 2007), and experience low social mobility (Duncan & Murnane, 2011; Stephens, Markus, & Phillips, 2014). Educational attainment, in particular, is often considered one of the most important differences between the classes, given that it tends to be the most highly correlated with various health, lifestyle, and psychosocial outcomes (see Snibbe & Markus, 2005 and Kohn, 1969 for discussions). Indeed, many researchers have exclusively used personal educational attainment—or parental educational attainment, for college students—to operationalize social class (Grossman & Varnum, 2011; Snibbe & Markus, 2005; Stephens, Fryberg, & Markus, 2011; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Stephens, Markus, and Townsend, 2007; Varnum, Na, Murata, & Kitayama, 2011).

These numerous experiential and structural differences in the lives of working class and middle-class individuals naturally produce very different identities, value systems, psychological characteristics, and behaviors. Williams (2012) notes the value placed upon self-discipline and perseverance among the working class—a value that keeps individuals and families out of poverty—and the pride put in doing "real work." Both form a prominent part of the identity of working class American communities. Ethnographic evidence suggests that this latter value of "real work" is perceived to grant an elite status and a sense of moral purity, as it is construed as something most people, particularly those from white-collar backgrounds, can't or won't do (Lamont, 2000). Working class people, then, often develop a distinct set of class values that transcends the societal superstructure, whose values often exclusively laud the behaviors and occupations of the white-collar middle class. Given that working-class people conceive of

their occupations as a "job" while the middle class perceive their work as a "career" (Argyle, 1994), Williams (2012) also notes that working class people place value on family before work and often develop small and dense networks of relationships, often with kinship ties (Lang, 1995). As a consequence of this differential focus on work, middle-class people therefore tend to place a higher value on developing and displaying human capital (e.g., knowledge, skills) relative to their working-class counterparts.

Beyond these value differences discussed by Williams (2012), Kohn (1969) and Schooler (2007) have found that the highly supervised and structured occupations of working-class individuals often directly contribute to value-systems that stress conformity and obedience to authority, worldviews that are cynical and rule-laden, and beliefs that are more fatalistic. In contrast, the middle-class tends work in occupations that are less supervised and structured and consequently have value-systems that stress independence and self-direction, worldviews that are more open and tolerant, and beliefs that individuals can control their personal outcomes. Parents teach their respective class values to their children, which prepare them for the realities of the world they will enter as working adults and members of society (Lubrano, 2004). It is also notable that this specific link between occupation and values found in the United States is also found in nations and cultures as different as Italy (Kohn, 1969), Poland and Ukraine (Kohn, Zaborowski, Janicka, Khmelko, Mach, Paniotto et al., 2002), and Japan (Kohn, Naoi, Schoenbach, Schooler, & Slomcyznski, 1990). This suggests that social class cultural differences are not simply due to happenstance, but are truly the direct result of the structural realities of middle class or working-class life.

Other authors have discussed working class and middle-class value differences, at least in the United States, as a reflection of the "hard individualism" of the working class and the "soft individualism" of the middle class. Kusserow's (2012) anthropological fieldwork in New York City found that working class individuals from Queens tended to hold a form of individualism that emphasized developing self-reliance, determination, street smarts, stoicism, and toughness. In contrast, middle-class individuals from Manhattan exhibited a form of individualism that concerns the development of unique thoughts, ideas, and preferences. Much like the findings of Kohn and Schooler, these differences reflect different perceptions of the world (safe vs. potentially dangerous) and the future (success vs. uncertainty) and provide different logics for parental behavior (praise and encourage vs. toughen and discipline).

These various working class and middle-class value differences often reveal themselves in different practices. For instance, working class children and adults are often highly practiced narrative, oral storytellers relative to their counterparts in the middle class (Miller, 2013; Miller & Sperry, 2012). These vivid, often dramatic narratives are valued as tools for teaching children about themselves and imparting lessons about their environment. They are also typically negative in content, which reflects openness and honesty about the harsh realities of working class life and reflects the toughness and stoicism values that are part of hard individualism (Burger & Miller, 1999; Cho & Miller, 2004). Moreover, working class parents often challenge the narratives of their children, emphasizing their need to develop determination and self-reliance in the face of opposition (Wiley, Rose, Burger, & Miller, 1998). By contrast, narratives told in middle class households are typically positive in content, emphasize

emotional self-expression and uniqueness, and give children an extensive degree of latitude and leeway for inaccuracy. In short, they reflect the predominant value of soft individualism found in middle-class contexts.

Perhaps the most researched difference in values between the working class and the middle class, however, is collectivism-individualism. The working-class realities of low income and low social mobility often necessitate and produce increased closeness to family, friends, and community. Indeed, relying on others to survive, for material and social support, and to get by when times are tough is a common occurrence in the life of a working-class individual. Consequently, theory suggests that the working class should be more collectivistic and exhibit greater interdependence, relational orientation, and conformity. The middle class, on the other hand, should be more individualistic and exhibit a preference for self-expression and uniqueness. As expected, working class individuals have been found to value and exhibit a subjective preference for social interdependence (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012), and Snibbe and Markus (2005) found that individuals from lower SES backgrounds prefer cultural products that emphasize self-adjustment to environmental constraints, self-control, and interdependent relationships. Middle class individuals, on the other hand, prefer cultural products that emphasize personal independence and uniqueness. Other research has found that working class individuals prefer objects that another person has chosen, rather than those they have freely chosen themselves, and associate the concept of freedom with more negative affect and perceptions of difficulty relative to individuals from the middle-class (Stephens, Fryberg, & Markus, 2011). Moreover, Stephens, Markus, and Townshend (2007) found that working class individuals prefer objects (e.g., pens,

images) that demonstrate conformity to the dominant preferences of the larger social group. They also report a greater liking for those objects, as well as increased positive affect when a confederate or a friend similarly chooses them. Using a cultural products approach, it was also found that car companies that advertise to working-class consumers used significantly more messages emphasizing conformity and social connection. When advertising to middle class consumers, on the other hand, car companies employ messages that emphasize uniqueness and self-expression.

These cultural value differences between the classes in terms of collectivism-individualism also result in distinct cognitive and behavioral differences. Relative to middle class people, working class individuals perceive greater external influences on their behavior and use more contextual explanations to explain a variety of phenomena, including economic inequality, numerous life and social outcomes (e.g., getting into college), and emotions (Kraus, Piff, & Keltner, 2009). Similarly, Grossman and Varnum (2010) found that working class individuals exhibit a lower dispositional bias and greater holistic (as opposed to analytic) cognition relative to middle class people, while Varnum, Na, Murata, and Kitayama (2011) found that individuals from middle-class backgrounds exhibit spontaneous trait inference—a phenomenon associated with dispositional bias (Na & Kitayama, 2011)—while individuals from the working class do not. Like the link between occupation and values, working class and middle-class differences in psychological characteristics and behavior also appear to transcend national, emic boundaries. Grossman and Varnum (2010) found that the decrease in dispositional bias among the working class occurred in both the United States and Russia, countries that have very different national-level orientations toward individualism-analytic cognition

and interdependence-holistic cognition, respectively (Hofstede, 1980; Grossman & Kross, 2010; Kühnen, Hannover, Roeder, Shah, Schubert, Upmeyer, & Zakaria, 2001; Nisbett, Peng, Choi, & Norenzayan, 2001). In sum, social class culture appears to be *additive* rather than *interactive* with national culture.

Summary

In sum, observations, theory, and scientific evidence support the notion that social classes, and in particular the working class and the middle class, are distinct cultural entities with very distinct values, worldviews, beliefs, practices, psychologies, and behavior. In short, they are "worlds unto themselves." In the next chapter, I will examine how the working class and middle class may also be different in cultural tightness-looseness.

CHAPTER 3:
Tightness-Looseness and Social Class

The principal prediction of this dissertation is that tightness-looseness is an important cultural variable that differentiates the working class and the middle class. In particular, it is hypothesized that the working class inhabits comparatively tighter contexts than the middle class. As a consequence of their chronic exposure to these relatively tighter or looser situations, members of each class will show comparatively different psychological and behavioral tendencies in both childhood and adulthood. This chapter reviews research that is suggestive of these general hypotheses and, following this, provides more specific predictions that will be investigated by the research studies proposed in Chapters 4 and 5.

Social Class Differences in Tightness-Looseness: Evidence from Past Research

There are many streams of evidence that are suggestive of social class differences in tightness-looseness. Perhaps the most convincing evidence that the working class and the middle class exhibit cultural differences in tightness-looseness comes from work by Kohn (1969). Kohn found that salient contexts and conditions in the lives of both working class and middle-class individuals vary in dramatic ways that foster the adoption of very different value systems. Most importantly for the purposes of the present research, these contextual differences and their associated value systems appear to be highly indicative of social class differences in tightness-looseness.

Kohn's research began in *The Washington Study*, wherein he asked working class and middle-class parents to choose three characteristics that they considered desirable in their children. Working class parents prioritized characteristics reflecting behavioral conformity to externally defined standards (e.g., obedience to parents,

neatness/cleanliness), while middle class parents prioritized characteristics that reflected concern for the internal processes of both the self and others (e.g., happiness, being considerate of others, self-control, and curiosity). Given the value that working-class parents place on conformity to external norms, it is also notable that they prioritize different characteristics depending on the sex of the child. They prioritize dependability, school performance, and ambition among boys and happiness, neatness/cleanliness, and good manners among girls. Middle class parents, in contrast, desire similar traits in children of both sexes, reflecting their concern with internal states rather than the dictates of external norms.

Despite these differences, Kohn also found considerable similarity in parental values across social classes. For example, working class and middle-class parents both value honesty in their children, and it was the highest ranked value in each class. However, Kohn found that parents from each class attached different meaning to their conception of honesty. For middle class parents, honesty was positively related to the characteristics of consideration, dependability, and manners and negatively related to the characteristic of popularity. For working class parents, by contrast, honesty is unrelated to consideration or dependability and is positively related to popularity and happiness. In the case of middle class parents, then, honesty is conceptualized as one of many necessary standards of behavior, while working class parents conceptualize it as a necessary and core attribute for experiencing good fortune in life. Other findings indicate that curiosity and happiness are positively related for middle class parents, but not for working class parents.

In all, *The Washington Study* found clear value differences in the characteristics

that working class and middle-class parents desired in their children, as well as clear differences in the meaning that parents of each class attached to each characteristic. Most importantly for the present dissertation, Kohn found that the characteristics valued by working class parents, both overall and as determined by the sex of the child in question, reflect clear concerns with external standards of behavior, while those chosen by middle class parents did not. Given this concern for abiding by and conforming to these external standards, this evidence suggests that the working class is tighter relative to the middle class.

Kohn's theory that social class was the primary cause of these differences in values was corroborated in two subsequent questionnaire studies: a cross-cultural study conducted in Turin, Italy and a national study conducted across the United States. In the Turin study, Kohn found the same working class and middle-class differences in values in a completely different culture. In the national study, Kohn found that these patterns were also evident across the United States and were robust even when controlling for religious background, religiosity (i.e., church attendance), nationality, race, region, urban vs. rural location, and the age of the child in question.

More than this, Kohn's national study also found similar social class differences in values when asking male adults to rank the characteristics they desire for themselves. In particular, the higher an individual's social class, the more likely they were to favor self-direction over conformity in regard to making judgments and the more likely they were to favor acting on the basis of their own standards. Social class differences were also reflected in adult males' orientation to and perceptions of society. Relative to middle class men, working class men endorsed greater authoritarian conservatism, or rigid

conformance to the decrees of authority and intolerance of nonconformity (e.g., they agreed more with statements like: “People who question the old and accepted ways of doing things usually just end up causing trouble”), hold more stringent moral codes (e.g., they agree less with statements like: “It’s all right to do anything you want as long as you stay out of trouble”), exhibit lower trust for others (e.g., they agree more with statements like: “If you don’t watch out, people will take advantage of you”), and exhibit greater resistance to innovation and change (e.g., they agree more with statements like: “It general works out best to keep on doing things the way they have been done before”). Working class men were also more likely to perceive their lives as dictated by external forces (e.g., when answering the question “Do you feel that most of the things that happen to you are the result of your own decisions or of things over which you have no control?” they are more likely to state that they have no control), indicate that they have higher levels of anxiety (e.g., they report higher frequency when answering the question “How frequently do you find yourself anxious and worrying about something?”), and believe their ideas to be less independent from the ideas of others (e.g., when asked the question: “According to your general impression, how often do your ideas and opinions about important matters differ from those of your relatives?”). These relationships were found even when controlling for the numerous demographic variables listed in the previous paragraph.

In all, the evidence from both the child-value and self-value studies would suggest that the working class is tighter than the middle class. Desiring greater obedience in one’s children suggests that rules are more stringent and deviance from them more punishable in working class households. Indeed, Kohn conducted interviews with mothers of both

classes and found that, while working class and middle-class parents both punish their children for misbehavior, working class parents are more likely to punish based on simple disobedience or due to the consequences of a child's actions. In contrast, middle class parents are more likely to punish based on their interpretation of the intent behind a child's behavior. In working class households, then, children learn that rules are inviolable no matter the reason for breaking them and that deviance is not tolerated. In addition to this evidence, working class endorsement of greater authoritarian conservatism, high resistance to change, more stringent moral codes, and perceiving that external forces have a dramatic control on one's life are definitive hallmarks of tighter contexts (Gelfand, Raver, Nishii, Leslie, Lun, Lim and colleagues, 2011; Harrington & Gelfand, 2014).

Beyond finding that the working class and the middle class have clear differences in terms of values and social perceptions that are indicative of disparities in tightness and looseness, Kohn also investigated the reasons for these differences. In particular, Kohn targeted two predominant variables—or life conditions—that typically define and distinguish between these classes: educational attainment and occupational position. He argued that self-directed values and orientation tend to be engendered by formal education, which generally teaches people to think for themselves. Regarding occupation, he suggested that a person's experience of self-direction or constraint at work profoundly influences the way that they view their position and orientation to society. Moreover, it affects their belief about the extent to which their decisions and actions can be (or can't be) consequential and their outcomes controlled. Indeed, Kohn found that both education and occupational position were independently related to the parental values, self-values,

social orientations and perceptions, and self-concepts discussed previously. Lower education was more strongly related to greater parental values of obedience, self-values of conformity, and greater authoritarian conservatism, while lower occupational position was more strongly related to lower trust of others, more stringent moral codes, lower tolerance of nonconformity, greater resistance to change and innovation, greater perceptions that external forces dictate one's life, increased anxiety, and greater perceptions that one's ideas are not independent. In other words, education is more strongly associated with social class differences in values, while occupational position is more strongly associated with self-concept and perceptions of one's role in and orientation toward society.

Given existing data from his national study, Kohn was also able to comprehensively examine the occupational conditions that produced social class differences in values and self and social perceptions. He isolated three potential factors: (1) the degree of freedom from close supervision and control, (2) how substantively complex work is, and (3) how routinized and discrete the structure of the workflow is. Kohn argues that freedom from close supervision and control gives individuals more leeway and ability to incorporate self-direction into their workflow, and was assessed with some of the following questions: How closely does [your supervisor] supervise you—does he decide what you do and how you do it? How free do you feel to disagree with him? When he wants you to do something, does he usually just tell you to do it, does he usually discuss it with you, or is it about half and half?

Regarding complexity of work, Kohn divided the things that individuals work on into three primary categories—things, people, and data—and examined how much of an

individual's working time was spent with each. People were asked, for example, to indicate how much time they spent reading and writing or dealing with written materials on the job (*data*), how often they spent working with their hands or using tools (also including musical instruments) (*things*), and how often they dealt with people and conversations *necessary* for the job (*people*). Kohn argued that working with things was often the least self-directed activity and working with data often the most self-directed activity. Consequently, the overall time spent doing each of the three types of work above was used to create an index of job complexity for each participant. As one might expect, more complex jobs generally require greater individual self-direction and decision-making, and Kohn argued that they would be more highly associated with these values.

Finally, Kohn also examined how routinized and discrete the structure of the workflow is. He argued that highly routinized work that could be divided into separate units or "complete jobs" (e.g., building a house) were often less amenable to self-directed work. In contrast, work that cannot have a set routine or appears to have an indivisible flow (e.g., a career in an academic field) tend to necessitate more self-direction. The national study tapped into this issue by asking participants if their work involves doing the same thing in the same way repeatedly, what they ordinarily think of as a complete job in the occupation, and if they ever feel finished with a job.

As expected, Kohn found that these three factors were clearly and independently associated with parental values for self-direction or conformity, as well as social orientations and self-perceptions. In particular, close and controlled supervision, less complex work, and work that had a highly routinized and discrete structure—the factors commonly found in blue-collar, working class occupations—were associated with greater

parental values of conformity, greater authoritarian conservatism, more stringent moral codes, lower trust in others, lower tolerance of nonconformity, greater resistance to change and innovation, increased anxiety, and greater perceptions that one's ideas are not independent. In sum, working class occupational conditions tend to have very strict rules and norms for how things are done, and workers are often given narrow directions and directly supervised to ensure that they are done as required. Consequently, due to the highly structured environment of the workplace, working class individuals often come to understand and perceive the world to be a tight place that has strong norms and little tolerance for deviance from those norms, where external forces control their behavior and their outcomes. In contrast, middle class occupational conditions tend to have fewer stringent norms and rules, and workers are often allowed more self-direction and more freedom from close supervision. As such, they come to perceive the world as a looser place, with weaker norms and plenty of room for self-direction and personal decision-making. Within both classes, these perceptions and values are then taught to their children. As a consequence, most adults have probably picked up these perceptions and values early in childhood, perceptions and values that their eventual workplace only serves to further reinforce over time.

In all, Kohn's primary conclusion is that members of both social classes learn about their world and their place within that world through exposure to various life domains, including the workplace and the household. This results in different values toward self-direction and conformity that necessarily follow from the structure of those domains. As Kohn puts it: self-direction "requires opportunities and experiences that are much more available to people who are more favorably situated in the hierarchical order

of society; conformity is the natural consequence of inadequate opportunity to be self-directed" (Kohn, 1977, pg. 189). In all, Kohn's work is illuminating because it suggests the validity of the central thesis of this dissertation: that the working class is tighter relative to the middle class and that the primary, daily contexts for each social class are differentially structured so as to have stronger norms and less tolerance for deviant behavior on the one hand and weaker norms and greater tolerance for deviant behavior on the other. Moreover, it demonstrates that these different life conditions produce different cultural beliefs, perceptions, semantic meanings, personal characteristics, and behaviors. Finally, it also postulates a developmental process for children from both class backgrounds, wherein they are taught—through modeling, practice, and parental enforcement—the dominant values and perceptions of their respective social class.

In addition to Kohn's findings, there is other evidence to suggest that the working class is tighter than the middle class. In particular, the working class inhabits ecological spaces that are inherently more threatening than those occupied by the middle class. Indeed, the working class has fewer material and economic resources and may often live paycheck-to-paycheck, which invariably makes life events more stressful and results in poorer health outcomes. They are also exposed to greater uncertainty, often live in more environmentally vulnerable areas, and experience greater health vulnerabilities (Wilkinson, 2005). As established in Chapter 1, greater exposure to ecological threat has been correlated with (Gelfand, Raver, Nishii, Leslie, Lun, Lim et al., 2011; Harrington & Gelfand, 2014) and found to cause (Roos, Gelfand, Nau, & Lun 2015) increased tightness, which helps to produce order and security in a threatening environment. As Williams (2012) astutely points out, the working class is constantly exposed to "the

specter of hard living. That specter anchors working-class culture to stability rather than novelty, to self-discipline rather than self-actualization…to tried-and-true institutions" (pg. 42). In short, holding to seemingly dependable norms and maintaining the status quo prevents uncertainty and change, which may cause the specter of hard living to become corporeal. This may explain why the working-class tends to be very traditional in its worldview, religious beliefs, and conceptions of morality—they ascribe to the notion that "if it ain't broke, don't fix it." In all, this is one reason to believe that the working class is tighter relative to the middle class. Indeed, as increased tightness is also theorized to foster greater coordination that enhances group survival, it is notable that the working class is liable to be more generous, pro-social, and helpful to others relative to the middle class (Piff, Kraus, Côté, Cheng, & Keltner, 2010). It is also suggestive that Harrington and Gelfand (2014) found that tighter states have a greater ratio of blue-collar (i.e., working class) to white-collar (i.e., middle class) workers relative to loose states.

Evidence from research on social class differences on a number of perceptual and psychological variables is also suggestive of the main thesis of this dissertation. In particular, Kraus, Piff, and Keltner (2009) found that lower subjective socioeconomic status was associated with a decreased sense of personal control, while Miyamoto and Ji (2011) found that lower educational attainment and lower income—both indicators of lower socioeconomic status and social class—were associated with a lower perception of agency. In other words, individuals from the working class perceive themselves to be more constrained than individuals from the middle class; their daily existence is comparatively tighter.

As noted in Chapter 2, working class individuals also exhibit greater attentiveness

to contextual influences, have less dispositional bias and are more cognizant of external influences on individual behavior, and have more preference for conformity and social interdependence (Grossman & Varnum, 2010; Kraus, Piff, & Keltner, 2009; Snibbe & Markus, 2005; Stephens, Fryberg, & Markus, 2011; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Stephens, Markus, and Townsend, 2007; Varnum, Na, Murata, & Kitayama, 2011). These various cognitive, motivational, and behavioral tendencies are particularly adaptive characteristics for those who live in a tighter world where external forces (e.g., norms, authority) consistently govern and constrain individual behavior and personal choice and where punishment is a reality for those who deviate from the rules in place. Indeed, one must necessarily be cognizant of the norms, rules, and other situational influences on behavior if one hopes to abide by them, and conforming to both unspoken social and institutionalized norms and rules is important when one may face negative consequences for deviance. It is particularly notable that these characteristics are also highly prevalent in tight nations (Gelfand, Raver, Nishii, Leslie, Lun, Lim et al., 2011; Nisbett, Peng, Choi, & Norenzayan, 2001; Morris & Peng, 1994). In all, the psychological tendencies previously found to differ between the working class and the middle class suggest that each is chronically exposed to contexts that differ greatly in terms of tightness and looseness.

Other research has found that working class individuals do poorer on creative tasks relative to people from the middle class, a pattern that has been found across nations as culturally different as the United States, India, and Puerto Rico (Straus, 1968). Although this may be suggestive of social class differences in education, this may also suggest that individuals from the working class have lower practice and/or comfort

devising novel solutions to problems. This may be due to their chronic exposure to tighter contexts that are less tolerant of creative practice. Indeed, as noted previously, research has consistently found a general negative relationship between creativity and tightness (Chua, Roth, and Lemoine, 2014; Harrington & Gelfand, 2014).

In all, the evidence supporting the assertion that the working class is tighter than the middle class appears robust and comes from many disparate sources. However, much of this evidence is indirect. The following section aims to provide specific predictions amenable to direct scientific inquiry.

The Goals and Predictions of the Present Research

While the research discussed above is supportive of the primary thesis of this dissertation—that the working class is tight and the middle class is loose—it is far from an open and shut case. In particular, the current evidence is only indirect and speculative in nature. Research has yet to directly measure the construct of tightness-looseness in regard to its theoretical variation between social classes. Moreover, while Kohn's evidence is particularly suggestive, social class differences in conformity vs. self-direction do not define the tightness-looseness construct. Overall, the extent to which these two social classes differ on tightness-looseness remains unanswered.

Other questions also exist about social class differences in constructs related to tightness-looseness. For example, if the working class is tighter than the middle class, are working class individuals also higher in need for closure, prevention focus, cautiousness, conscientiousness, self-monitoring, and ethnocentrism relative to middle class individuals? Moreover, given that tightness and strong norms are theorized to be an adaptive response to threats and instability in one's environment, does the working-class

view rules more positively and rule violation more negatively than the middle class? Finally, while Kohn's work suggests that individuals from the working class and middle class behave and think differently, almost all of his work is grounded in self-report methodology and correlational evidence. By contrast, this dissertation aims to utilize experimental and behavioral methods to directly investigate cognitive and behavioral differences between the working class and the middle class.

Given the questions posed above, this dissertation makes the following predictions. Hypothesis 1 predicts that the working class is tighter relative to the middle class. This difference should not only be present in generalized ratings of the strength of rules and punishments by the working and middle class, but also in salient, every day domains such as the workplace, the household, and schools. Moreover, the working class should also feel greater situational constraint across contexts and desire greater tightness—i.e., stronger rules and punishment for deviance.

Hypothesis 2 predicts that the working class will perceive rules to be more beneficial and less negative in valence relative to the middle class. Indeed, strong rules are thought to be an expected, normalized, and oft-valued aspect of working class lives and contexts (Kohn, 1969). For the middle class, however, whose values are often predicated on the freedom of choice, strong rules are likely to be seen as an obstacle. Consequently, while both classes may generally perceive rules and punishment negatively because they act to restrict behavior, the middle class should have even more negative meanings attached to rules and punishment relative to the working class.

Hypothesis 3 predicts that the working class will exhibit personality traits and psychological characteristics adaptive to tighter environments, including greater need for

structure, greater prevention focus, greater cautiousness, higher conscientiousness, greater self-control, increased self-monitoring, greater perceived severity of moral and conventional norm violations, and lower creativity relative to middle class individuals. As noted above, these variables have previously been positively correlated with tightness. Indeed, it should be adaptive for individuals chronically exposed to tighter environments to desire firm, unambiguous rules and guidelines, be overly concerned with avoiding negative consequences and tentative in their behavior, exhibit a personality that is disciplined, not impulsive, and concerned with order, have a strong ability for self-restraint, observe and regulate their behavior according to context, and view both conventional and moral norm violations as more severe in nature.

Given that cultural differences in tightness-looseness have been found to lie in disproportionate exposure to ecological threat (Gelfand et al., 2011; Harrington & Gelfand, 2014), Hypothesis 4 predicts that the working class will be exposed to greater threat relative to the middle class.

Hypothesis 5 predicts that social class differences in personality traits, beliefs, and psychological characteristics will be mediated by tightness-looseness (see Figure 1). In other words, tightness-looseness should lead individuals to develop the characteristics and behaviors adaptive to tight and loose environments, respectively.

Social class differences in tightness-looseness should also be reflected in observable behavior. At its core, tightness is indicative of both strong norms and strong punishments for norm violation. If the working class is indeed tighter than the middle class, there should be observable differences in norm enforcement behavior between the members of each class. As such, Hypothesis 6 predicts that individuals from working

class backgrounds will be more likely to perceive norm enforcement positively and more likely enforce norms relative to the middle class. Class differences in norm enforcement behavior should be evident even among children. As past research has demonstrated, working class and middle-class parents cultivate very different environments in the household—environments that are predicted to be rule-laden and tight or unconstrained and loose, respectively. Consequently, working class parents should be more likely to set clear rules and constrain their children's behavior relative to middle class parents, and working-class children should learn that breaking the rules, regardless of the intention behind it, is a punishable offense. In contrast to their middle-class counterparts then, working class children should learn that following the rules is very important and should consequently be more likely to protest and critique a peer who transgresses them. Additionally, they may be more likely to use normative reasons (e.g., "You are supposed to do it this way") for their protest relative to middle class children. Past research has found that 3-year-olds are clearly able to understand normative rules and use normative language when enforcing rules amongst peers (Rakoczy, Warneken, & Tomasello, 2008). Consequently, children 3 to 4 years of age should be cognizant of the strength of the social norms in their environment and the degree to which they should or should not be tolerated. Therefore, it is predicted that 3 to 4-year-old children from working class families, relative to 3 to 4-year-old children from middle class families, will be more likely to critique a peer that violates a norm and will be more likely to use normative language when doing so. To my knowledge, this will be the first study to examine differences in tightness-looseness among populations as young as three years old.

As working-class adults and children are predicted to be less tolerant of behavioral norm violations, they are also likely to have lower tolerance for people who are "different." Hypothesis 7 predicts that the working class will exhibit more negative biases toward norm-deviant individuals relative to the middle class, as well as greater ethnocentrism and xenophobia. This bias may be especially likely when deviance is within an individual's control, given that controllability implicates a freely made personal choice on the part of the deviant actor.

Finally, cultural mismatch theory (Stephens, Townsend, Markus, & Phillips, 2012) suggests that individuals from tighter working-class backgrounds should experience poorer outcomes in environments with looser middle-class norms. Consequently, Hypothesis 8 predicts that working-class freshman will experience more negative academic and psychological outcomes compared to middle class freshman due to a mismatch with the university setting. In particular, working class students should exhibit a higher preference for simplicity that is at odds with the unstructured nature of college life, and this characteristic should mediate the link between social class and outcomes.

In all, this dissertation aims to investigate a broad swath of phenomena and predictions theoretically related to social class differences in tightness-looseness. I aim to test the above predictions in six studies. Study 1 examines differences in global and domain-specific tightness-looseness perceptions among working class and middle-class adults, the meaning they attach to rules and punishment, their self-reported differences in personality traits, psychological characteristics, creativity, and norm violation perceptions, and their subjective and objective exposure to ecological threat. Study 2 uses

an extensive archival data set from the DDB Life Style Survey to examine these social class differences with a larger, more representative sample. It also supplements Study 1 by examining additional variables related to tightness-looseness and does so in a different time period (1985 – 1998) with a different measure of social class. Studies 3-5 then delve into experimental methods to examine social class differences in norm enforcement, perception of punishment, and explicit cognitive bias. Study 3 uses a protocol from Rakoczy, Warneken, & Tomasello (2008) to examine the extent to which working class and middle-class children protest a peer when they violate a norm. Study 4 uses materials from Eriksson, Andersson, and Strimling (2016) to examine how working class and middle-class adults perceive those who punish norm violators as well as self-reported tendency to punish norm violation. Then, Study 5 examines social class differences in explicit bias toward faces with both controllable and uncontrollable deviant features. Finally, Study 6 examines how working-class tightness may cultivate a preference for simplicity among working class college students that negatively impacts their academic outcomes in looser university environments.

The primary operationalization of participant social class across studies was educational attainment. This has been a well-used and well-validated indicator of social class in past research that avoids many of the biases associated with more subjective measures of social class (Grossman & Varnum, 2010; Snibbe & Markus, 2005; Stephens, Fryberg, & Markus, 2011; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Stephens, Markus, and Townsend, 2007; Varnum, Na, Murata, & Kitayama, 2011). However, subjective measures of social class were also included in order to test for convergent validity.

CHAPTER 4
Research Studies

STUDY 1: Survey of Working Adults

Study 1 used a sample of adults to investigate Hypotheses 1 through 5 outlined at the end of Chapter 3.

Method

Participants. 382 adults from 45 states and territories of United States participated in this study. This N value was chosen after conducting a power analysis for two-tailed t-tests that assumed a "medium" effect size of .30, an alpha error probability of .05, and a desired power of .80. Based on this analysis, a sample of 176 participants per group was found to be sufficient.

Participants were collected through the services of Qualtrics. Participants were targeted based on educational attainment, which has been used as a proxy for social class in past research and avoids the bias that can occur with self-report measures of social class (Grossman & Varnum, 2010; Snibbe & Markus, 2005; Stephens, Fryberg, & Markus, 2011; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Stephens, Markus, and Townsend, 2007; Varnum, Na, Murata, & Kitayama, 2011). Half of the participants (the working class) had a high school diploma or lower educational attainment (N = 191), while the other half of the participants (the middle class) had a 4-year college degree of higher (N = 191). We also ensured that participants' spouses, if they had one, had a similar level of educational attainment.

Eighty-two participants were excluded from analysis after indicating that they experienced language difficulties with the study (N = 14), or completed the study in multiple sittings (N = 24), in a distracting environment (N = 27), in public where they did

not feel free to respond honestly (N = 4), or on a small-screen device such as a cellphone or a tablet (N = 30). Out of the remaining participants (N = 300), 149 were working class and 151 were middle class. Based on power analysis, this still provides sufficient power for two-tailed t-tests assuming a medium effect size of .33, an alpha error probability of .05, and a desired power of .80.

The working-class sample was 46.3% male, 91.3% White, 2% Asian, and 5.4% Black or African-American, 95.3% ethnically non-Hispanic, 75.2% lived in urban or suburban areas, and 66.4% of the sample had a spouse or a partner. 94.6% of participants had a high school diploma, 4% had some high school education with no degree, and 1.3% only had elementary school education. The mean age was 48.93 years (*SD* = 12.51), with a range from 19 to 72. In terms of religion, 70.5% of the working-class sample was Christian, 16.8% had no religious affiliation, 3.4% were agnostic, 3.4% were atheist, 0.7% were Jewish, 0.7% were Muslim, and 4.7% indicated "other".

The middle-class sample was 43.7% male, 82.1% White, 11.9% Asian, 3.3% Black or African-American, 1.3% American Indian or Alaskan Native, 91.4% ethnically non-Hispanic, 90.1% lived in urban or suburban areas, and 69.5% of the sample had a spouse or a partner. 58.9% of participants had a Bachelor's degree, 29.1% had a Master's degree, 5.3% had a professional degree (e.g., MD, DDS, JD), and 6.6% had a Doctorate. The mean age was 46.87 years (*SD* = 14.45), with a range from 22 to 78. In terms of religion, 65.6% of the middle-class sample was Christian, 12.6% had no religious affiliation, 7.3% were atheist, 4.6% were Jewish, 3.3% were Hindu, 2.6% were agnostic, 2.6% were Buddhist, 0.7% were Muslim, and 0.7% indicated "other". See Table 1 for all demographic information for both groups.

The working class and middle-class group showed no significant differences in religiosity (M_{WC} = 3.78, SD_{WC} = 2.09, M_{MC} = 3.78, SD_{MC} = 2.06), $t(298) = -.10$, $p = .99$. However, the middle class demonstrated greater religious service attendance (M_{WC} = 2.17, SD_{WC} = 1.45, M_{MC} = 2.70, SD_{MC} = 1.41), $t(298) = -3.19$, $p = .002$. The working class and the middle class marginally differed in their voting patterns in the 2016 presidential election for Donald Trump (coded as 1) or Hillary Clinton (coded as 2) (M_{WC} = 1.47, SD_{WC} = .50, M_{MC} = 1.59, SD_{MC} = .49), $t(248) = -1.85$, $p = .07$, such that the working class were more likely to vote for Trump.

Procedure. Study 1 employed a survey methodology. Participants responded to numerous scales as follows.

Experienced Tightness-Looseness. Participants completed three domain-specific measures rating the tightness of their childhood home (α = .86), childhood school (α = .82), and current or most recent workplace (α = .88), and a general scale rating the tightness of their overall life (α = .82).[1] Each scale consisted of 13 items and was adapted from Gelfand and colleagues' (2011) 6-item tightness-looseness scale. Example items from these scales include: "There were many rules that I was supposed to follow in my childhood home", "In my childhood home, if I acted in an inappropriate way, my parents or guardians would strongly disapprove", "In school, there were very clear expectations for how I should act", "In school, I had a great deal of freedom in deciding how I wanted to behave", "At my workplace, people closely monitor what I do", "At my workplace, there is a right way and a wrong way to do things", "In my life, there is a rule or a proper procedure for most things", and "In my life, if I act in an inappropriate way, others will

[1] Unless otherwise specified in the text, exploratory factor analysis using maximum likelihood estimation found that the scales in Study 1 have a single factor solution.

strongly disapprove" (see Appendix A for complete scales). Participants used a 6-point Likert scale (1 = *strongly disagree*, 6 = *strongly agree*) to rate their agreement with each item.

Desired Tightness. Participants then responded to a 4-item measure of desired tightness (α = .85) to assess their endorsement of strong norms and lower tolerance for deviance. Items included: "A functioning society requires strong rules", "A functioning society requires strong punishment for wrongdoing", "It is important to follow the rules", and "Punishments are necessary for correcting bad behavior". Participants used a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*) to rate their agreement with each item.

Situational Constraint. Participants were asked to rate the extent to which 15 contexts (e.g., in a bank, at a job interview, at the library) allowed people to behave as they choose on a 5-point Likert scale (1 = *not at all*, 5 = *very much*) (scale from Gelfand et al., 2011). Scores were aggregated (α = .94) so that higher scores indicated a greater perception of situational constraint.

Meaning of Rules. Following this, participants were asked to complete a measure adapted from Stephens, Fryberg, and Markus (2011) to assess the meaning they attach to rules, rule following, and rule violation. Specifically, participants were asked to list the first five words that come to mind when they think about the word "rules", the first five words that come to mind when they think about the phrase "following the rules", and the first five words that come to mind when they think about the phrase "breaking the rules". Consequently, each participant provided a total of 15 words. One blind, independent coder evaluated each word for valence (whether the word was positive, negative, or

neutral) and for 17 different themes. A second blind, independent coder evaluated a subset of 20% of participant responses to ensure good inter-rater reliability (*M* kappa = .84). Example themes include authorities (e.g., police, teachers), benefits and importance (e.g., structure, order, necessary, protection), drawbacks and limitations (e.g., oppression, tyranny, no freedom), constraint (e.g., tight, restriction, strict), and leeway (e.g., loophole, freedom, liberty) (see Appendix B for all themes). For each of the three prompts, participants received a proportion score for all 3 valences and 17 themes. For example, if a participant listed one word out of five that matched the authority theme, they received a .20 score for this theme.

Individual Differences. Next, participants completed measures of ***prevention-promotion focus*** (14-items, prevention α = .82; promotion α = .89) (Lockwood, Jordan, & Kunda, 2002), ***self-monitoring*** (7-items, α = .70) (Lennox & Wolfe, 1984), ***self-control*** (13-items, α = .85) (Tangney, Baumeister, & Boone, 2004), ***caution*** (10-items, α = .89) and ***dutifulness*** (12-items, α = .90) (Goldberg, 1999; Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger, & Gough, 2006), ***conscientiousness*** (8-items, α = .83) and its two subscales assessing ***conventionalism*** (e.g., "I am attached to conventional ways", 5-items, α = .88) and ***preference for order*** (3-items, α = .82) (Goldberg, 1999; Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger, & Gough, 2006), and ***need for structure*** (12-items, α = .78) (Neuberg & Newsom, 1993).

Reactions to Norm Violations. Participants then completed an 8-item measure of conventional norm violation severity (α = .86) and a 15-item measure assessing perceptions of moral justifiability (α = .89) drawn from the World Values Survey. The conventional violation scale asked participants to rate the extent to which they think eight

different behaviors (e.g., a person littering in public places) are social norm violations on a 5-point Likert scale (1 = *not a violation*, 5 = *extreme violation*). The perception of moral justifiability scale asked participants to rate 15 behaviors (e.g., using marijuana, homosexuality, cheating on taxes) for their justifiability on a 7-point Likert scale (1 = *never justifiable*, 7 = *always justifiable*) (see Appendix C for both full scales). Exploratory Factor Analysis using maximum likelihood estimation and direct oblimin rotation found that the moral justifiability scale separated into two distinct factors. One factor focused on cheating-corruption behaviors (e.g., someone accepting a bribe, cheating on taxes, married men and women having an affair), while the other focused on "progressive" behaviors (e.g., abortion, euthanasia for the incurably sick, homosexuality, using marijuana).

Creativity. Next, participants completed the alternative uses task of creativity (Guilford, 1967), where they were asked to list as many uses as they could think of for both a paper clip and a brick. Participant responses were assessed for fluency (the number of total responses given) and flexibility (the total number of thematic categories found across all stated item uses; for example, a brick used as a weapon or to destroy a window is one category: "weapon/destruction", while a brick used as a doorstop is another altogether). One blind and independent coder assessed response flexibility, and a second blind and independent coder assessed 20% of the responses to ensure inter-rater reliability (*M* kappa = .95).

Threat. In order to assess both objective and subjective ecological threat, participants were asked to provide their zip code and fill out a measure of subjective ecological threat. I used the provided zip codes to access local statistics for crime risk,

poverty, unemployment, and air pollution. Since it is also predicted that working class tightness may be influenced by lack of exposure to cultural difference and different ideas, I also examined statistics for the percentage of foreign-born population. Statistics came from the Federal Bureau of Investigation, the U.S. Census Bureau, and the Environmental Protection Agency.

The measure of subjective ecological threat asked participants to rate the extent to which they were concerned that specific events (e.g., job loss, poverty, debt, natural disasters, crime, illness or disease) might negatively affect them or their immediate family at the present time (see Appendix D for the full scale). Participants used a 7-point Likert scale to respond to these scales (1 = *not at all concerned*, 7 = *very concerned*). Exploratory Factor Analysis using maximum likelihood estimation and direct oblimin rotation revealed a three-factor solution for subjective threat concerns. One factor included concerns with paying rent or mortgage, poverty/lack of income, loss of housing/eviction, food deprivation due to income, debt, job loss, lack of job opportunity, and lack of medical care. A second factor included concerns with burglary, gun violence, violent crime, mugging, terrorism, natural disaster, traffic accident, illness or disease, economic recession, war, and immigration. A third factor included concerns with legal injustice, false conviction, corruption, overcrowding, discrimination, drug addiction/substance abuse, pollution, climate change, workplace accidents, and mental illness. Generally, these factors address the concerns of finances and poverty, crime and bodily harm, and societal problems and injustices, respectively.

Social Class. The main variable determining participant social class was educational attainment. This has been a well-used and well-validated indicator of social

class in past research (Grossman & Varnum, 2010; Snibbe & Markus, 2005; Stephens, Fryberg, & Markus, 2011; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Stephens, Markus, and Townsend, 2007; Varnum, Na, Murata, & Kitayama, 2011). Participants indicated their highest level of education from the following options: elementary school/no schooling, some high school with no diploma, high school graduate (or equivalent), some college (1-4 years, no degree), Associate's degree (including occupational or academic degrees), Bachelor's degree (BA, BS, AB, etc.), Master's degree (MA, MS, etc.), Professional degree (MD, DDS, JD, etc.), and Doctorate degree (PhD, EdD, etc.). As in past research, participants with a high school degree or lower were considered working class, while participants with a Bachelor's degree or higher were considered middle class.

Although self-report measures of social class can be biased and are therefore not the primary measure of social class in this study, they were included for the purposes of convergent validity. In one, participants were asked to rate their perceived societal status on an 11-point scale. They were shown a picture of an 11-rung ladder and asked to "imagine the ladder below as representing the status of people in society. Those with the highest socioeconomic status (i.e., those with the most money, highest education, and best jobs) are at the top and those with the lowest socioeconomic status (i.e., those with the least money, least education, and worst jobs) are at the bottom". They were then asked to indicate where they think they stood on this ladder (1 = *lowest*, 11 = *highest*). In a second measure, participants also rated their subjective social class on a six-point scale consisting of the following options: (1) lower lower (e.g., unskilled labor, unemployed), (2) upper lower (e.g., skilled worker, small farmer), (3) lower middle (e.g., clerical, small

entrepreneurs; farmer), (4) upper middle (e.g., professionals, such as teachers, social workers; owner of a good business; owner of a large farm), (5) lower upper (e.g., professionals, such as physicians, lawyers; owner of a major business), or (6) upper upper (e.g., rich, influential, highly educated).

Demographics. Finally, participants answered various demographic questions, including age, nationality, citizenship, race, ethnicity, occupation, marital status, spouse or partner's occupation, annual income, ownership vs. renting status, state of residence and length of residence in that state, whether they lived in an urban or rural area, place of birth, parental educational attainment and occupation, whether they lived in an urban or rural area when growing up, religious affiliation, religiosity and frequency of religious service attendance, and who they voted for or planned to vote for in this year's presidential election.

Checks. Lastly, participants filled out checks that asked if they experienced language difficulties with the study, completed the study in multiple sittings, in a distracting environment, in public where they did not feel free to respond honestly, and/or completed the study on a small-screen device such as a cellphone or a tablet.

Results

In order to verify that educational attainment is a good indicator of social class status, I examined group differences in the following convergent variables: annual income, subjective ratings of social class, and perceived societal standing (see Procedures below for how these were assessed). Relative to the 4-year degree or higher educational attainment (middle class) group, the high school and lower educational attainment

(working class) group reported significantly less annual income (M_{WC}[2] = 5.47, SD_{WC} = 2.07, M_{MC} = 6.87, SD_{MC} = 1.70), $t(285.94) = -6.40$, $p < .001$, $d = -.74$, and rated themselves lower in subjective social class, (M_{WC} = 3.02, SD_{WC} = 1.10, M_{MC} = 3.85, SD_{MC} = .85), $t(278.72) = -7.35$, $p < .001$, $d = -.84$, and perceived social standing, (M_{WC} = 5.48, SD_{WC} = 2.00, M_{MC} = 6.74, SD_{MC} = 1.84), $t(298) = -5.68$, $p < .001$, $d = -.66$.

Survey measures correlated as expected based on general tightness-looseness theory. In particular, the general and domain-specific measures of tightness-looseness were all significantly intercorrelated. Perceptions that one's general life was tight correlated positively with the perceived tightness of the childhood home, $r(300) = .32$, $p < .001$, childhood school, $r(300) = .26$, $p < .001$, and workplace, $r(300) = .55$, $p < .001$. Perceived tightness of childhood home was positively correlated with tighter ratings of childhood school, $r(300) = .58$, $p < .001$, and the workplace, $r(300) = .35$, $p < .001$. Lastly, tightness ratings of childhood school and the workplace were also positively correlated, $r(300) = .26$, $p < .001$. Both general and domain-specific measures were associated with desired tightness, moral and norm violation perceptions, individual characteristics, word valence and theme, creativity, and threat in expected directions. In order to focus on the driving force of this study—determining if there are differences in tightness-looseness between the working class (those with a high school degree or lower) and the middle class (those with a bachelor's degree of higher)—the full details of these analyses are reported in Table 2.

All of the following group comparisons are reported in Tables 3 and 4.

[2] Please note. The subscript *WC* indicates the working-class sample and the subscript *MC* indicates the middle-class sample.

Hypothesis 1: The working-class experiences greater tightness, higher situational constraint, and desires tighter norms than the middle class.

Tightness-Looseness. T-tests for independent samples found that the working class (M = 3.98, SD = .64) rated their overall life to be tighter than the middle class (M = 3.82, SD = .67), $t(297.70) = 2.14$, $p = .03$, $d = .25$. Class differences were also found in the domain-specific measures of tightness-looseness. Specifically, the working class (M = 4.40, SD = .78) rated their workplaces to be significantly tighter than the middle class (M = 4.12, SD = .79), $t(298) = 3.07$, $p = .002$, $d = .36$, and childhood home tightness was marginally higher amongst the working class (M = 4.55, SD = .81) relative to the middle class (M = 4.38, SD = .72), $t(298) = 1.91$, $p = .06$, $d = .22$. There were no differences in working class (M = 4.78, SD = .64) and middle class (M = 4.69, SD = .66) ratings of the tightness of childhood school, $t(298) = 1.29$, $p = .20$.

Desired Tightness. Relative to the middle class (M = 5.52, SD = .96), the working class (M = 5.83, SD = 1.02) desired greater tightness, $t(298) = 2.72$, $p = .007$, d = .32.

Situational Constraint. As expected, the working class (M = 3.26, SD = .95) perceived greater situational constraint relative to the middle class (M = 3.04, SD = .87), $t(298) = 2.04$, $p = .04$, $d = .24$.

Hypothesis 1 was supported.

Hypothesis 2: The working class perceives rules to be more beneficial and less negative in valence relative to the middle class.

Word Valence and Theme. Proportions were not normally distributed. Consequently, non-parametric Mann-Whitney U tests were employed for these analyses.

Mann-Whitney U tests showed that the working class attached more positive valence to "rules" than the middle class (M_{WC} = .48, M_{MC} = .38, z = -3.01, p = .003), while the middle class attached more negative valence to "rules" than the working class (M_{WC} = .21, M_{MC} = .28, z = -2.44, p = .02). Thematically, a greater proportion of working class responses were coded as *positive affect* words (e.g., happy, pride) (M_{WC} = .04, M_{MC} = .01, z = -2.47, p = .01) and *following* words (e.g., follow, obey) (M_{WC} = .25, M_{MC} = .19, z = -2.62, p = .009), while a greater proportion of middle class responses were coded as *constraint* words (e.g., strict, control) (M_{WC} = .07, M_{MC} = .11, z = -3.26, p = .001). No differences were found for the other thematic categories.

In response to the prompt about "following the rules," a greater proportion of working class words were coded as *following* words (M_{WC} = .25, M_{MC} = .19, z = -2.00, p = .05). In contrast, a greater proportion of middle class words were coded as *pejorative* words (e.g., goody two shoes, boring)—this was only marginally significant (M_{WC} = .001, M_{MC} = .004, z = -1.67, p = .09). No differences were found for valence or the other thematic categories.

Finally, in response to the prompt about "breaking the rules," the middle class attached marginally more positive valence to rule violation than the working class (M_{WC} = .09, M_{MC} = .11, z = -1.74, p = .08). Additionally, a greater proportion of middle class words in response to this prompt were coded as *leeway* words (e.g., freedom, options) (M_{WC} = .02, M_{MC} = .04, z = -2.12, p = .03). No differences were found for negative valence or the other thematic categories.

Hypothesis 2 was supported.

Hypothesis 3: The working class exhibits personality traits (e.g., greater need for structure, prevention focus, and conscientiousness) and cognitive characteristics (e.g., lower creativity, more stringent moral beliefs) adaptive to tighter environments.

Individual Characteristics. The working class ($M = 4.14$, $SD = .68$) had significantly higher need for structure relative to the middle class ($M = 3.94$, $SD = .64$), $t(298) = 2.69$, $p = .008$, $d = .31$. The working class also scored higher on conscientiousness ($M_{WC} = 5.40$, $SD_{WC} = .99$, $M_{MC} = 4.90$, $SD_{MC} = .89$), $t(298) = 4.60$, $p < .001$, $d = .53$, and conventionalism ($M_{WC} = 5.18$, $SD_{WC} = 1.29$, $M_{MC} = 4.46$, $SD_{MC} = 1.21$), $t(298) = 5.00$, $p < .001$, $d = .58$.

The working class and the middle class showed no group differences in prevention orientation, ($M_{WC} = 5.73$, $SD_{WC} = 1.54$, $M_{MC} = 5.60$, $SD_{MC} = 1.62$), $t(298) = .70$, $p = .49$, self-monitoring, ($M_{WC} = 4.43$, $SD_{WC} = .81$, $M_{MC} = 4.53$, $SD_{MC} = .71$), $t(298) = -1.14$, $p = .26$, self-control, ($M_{WC} = 4.33$, $SD_{WC} = .98$, $M_{MC} = 4.51$, $SD_{MC} = 1.04$), $t(298) = -1.57$, $p = .12$, caution, ($M_{WC} = 4.13$, $SD_{WC} = .93$, $M_{MC} = 4.18$, $SD_{MC} = .91$), $t(297.65) = -.52$, $p = .60$, dutifulness, ($M_{WC} = 4.79$, $SD_{WC} = .84$, $M_{MC} = 4.69$, $SD_{MC} = .84$), $t(298) = 1.06$, $p = .29$, and preference for order, ($M_{WC} = 5.76$, $SD_{WC} = .96$, $M_{MC} = 5.63$, $SD_{MC} = .97$), $t(298) = 1.14$, $p = .26$.

Social and Moral Violation. The working class rated cheating and corruption behaviors ($M_{WC} = 2.24$, $SD_{WC} = 1.37$, $M_{MC} = 2.60$, $SD_{MC} = 1.28$), $t(295.78) = -2.35$, $p = .02$, $d = -.27$, and "progressive" behaviors ($M_{WC} = 3.87$, $SD_{WC} = 1.28$, $M_{MC} = 4.16$, SD_{MC}

= 1.25), $t(298) = -1.97$, $p = .05$, $d = -.23$, as significantly less morally justifiable relative to the middle class. The working class and the middle class showed no differences on the severity of social norm violations ($M_{WC} = 3.22$, $SD_{WC} = .79$, $M_{MC} = 3.33$, $SD_{MC} = .70$), $t(298) = -1.28$, $p = .20$.

Creativity. The working class showed lower creativity on the alternative uses task relative to the middle class. Specifically, the working class ($M = 2.84$, $SD = 1.98$) responded with fewer overall creative uses (lower creative fluency) for a paper clip relative to the middle class ($M = 4.10$, $SD = 3.69$), $t(205.57) = -3.51$, $p = .001$, $d = -.49$. The working class also used fewer thematically different categories, or lower creative flexibility, in their alternative uses for both a paper clip, ($M_{WC} = 1.69$, $SD_{WC} = .70$, $M_{MC} = 1.95$, $SD_{MC} = .74$), $t(267) = -2.99$, $p = .003$, $d = -.37$, and a brick, ($M_{WC} = 1.83$, $SD_{WC} = .93$, $M_{MC} = 2.14$, $SD_{MC} = 1.01$), $t(268) = -2.58$, $p = .01$, $d = -.32$.

Hypothesis 3 was supported.

Hypothesis 4: The working class is exposed to greater threat relative to the middle class.

Objective Threat. Zip code threat statistics were not normally distributed. Consequently, non-parametric Mann-Whitney U tests were employed for these analyses.

Poverty. The zip codes provided by working class participants were found to be significantly higher in deep poverty (i.e., household income below 50% of the poverty threshold) ($M_{WC} = 8.24$, $SD_{WC} = 4.71$, $M_{MC} = 7.51$, $SD_{MC} = 5.35$), $z = -2.00$, $p = .05$, and marginally higher in overall poverty (an income-to-poverty ratio that is below the poverty threshold) ($M_{WC} = 14.70$, $SD_{WC} = 8.23$, $M_{MC} = 13.61$, $SD_{MC} = 9.18$), $z = -1.76$, $p = .08$.

Unemployment. Working class zip codes were also found to be significantly higher in unemployment (M_{WC} = 8.27, SD_{WC} = 3.73, M_{MC} = 7.26, SD_{MC} = 2.86), z = -2.26, p = .02.

Foreign Population. Working class zip codes were significantly lower in the percentage of foreign-born population, (M_{WC} = 9.76, SD_{WC} = 10.27, M_{MC} = 18.19, SD_{MC} = 15.14), z = -5.32, p < .001.

There were no class differences in crime risk (M_{WC} = 77.61, SD_{WC} = 61.84, M_{MC} = 89.05, SD_{MC} = 73.93), z = -1.35, p = .18, or air pollution (M_{WC} = 102.26, SD_{WC} = 31.38, M_{MC} = 99.85, SD_{MC} = 23.40), z = -.34, p = .73.

Subjective Threat. In terms of perceived threat, the working class (M = 4.03, SD = 1.91) demonstrated a greater marginal concern with the finances and poverty factor relative to the middle class (M = 3.68, SD = 1.83), t(298) = 1.62, p = .11, and a significantly greater concern about debt specifically (M_{WC} = 4.46, SD_{WC} = 2.13, M_{MC} = 3.78, SD_{MC} = 2.14), t(298) = 2.77, p = .006, d = .32. There were no significant differences found between the classes in the crime and bodily harm (M_{WC} = 4.51, SD_{WC} = 1.62, M_{MC} = 4.33, SD_{MC} = 1.47), t(298) = -1.11, p = .27, and societal problems and injustices factors (M_{WC} = 3.58, SD_{WC} = 1.70, M_{MC} = 3.79, SD_{MC} = 1.65), t(298) = .97, p = .34. However, the working class did show a marginally greater concern with burglary relative to the middle class (M_{WC} = 4.56, SD_{WC} = 1.92, M_{MC} = 4.17, SD_{MC} = 1.83), t(298) = 1.81, p = .07, d = .21. Notably, the middle class showed greater concerns with climate change (M_{WC} = 3.75, SD_{WC} = 2.06, M_{MC} = 4.21, SD_{MC} = 1.91), t(298) = -1.98, p = .05, d = -.23, and pollution (M_{WC} = 3.84, SD_{WC} = 1.99, M_{MC} = 4.29, SD_{MC} = 1.81), t(298) = -2.06, p = .04, d = -.24, relative to the working class.

Hypothesis 4 was supported.

Controls. All findings above were unaffected when controlling for age, gender, and race. As tightness has previous been associated with greater political conservatism, higher religiosity, and rural location (Harrington & Gelfand, 2014), these variables were also controlled for and were not found to affect results. All controls were run in separate analyses.

Hypothesis 5: Social class differences in personality traits, beliefs, and psychological characteristics are mediated by perceptions of tightness-looseness.

Mediation Analyses. Mediation analyses were used to examine whether tightness-looseness mediated the links between social class and individual characteristics, perceptions of moral violation, and creativity (see Figure 1 for the meditational model being tested). In order to test the mediating effect of both general and domain-specific tightness perceptions together and given their intercorrelations reported above, I created an aggregate variable composed of the three tightness measures that were found to differ between the working class and the middle class in this study: general life tightness, childhood home tightness, and workplace tightness.[3]

In this mediation model, the path from social class (the independent variable) to composite tightness (the mediator) was significant (b = -.20, $t(298)$ = -3.09, p = .002). The paths from composite tightness (the mediator) to the following dependent variables were also significant: need for structure (b = .21, $t(297)$ = 3.20, p = .002),

[3] Working class participants scored higher on this composite tightness variable (M_{WC} = 4.31, SD_{WC} = .57, M_{MC} = 4.11, SD_{MC} = .57), $t(298)$ = 3.09, p = .002.

conscientiousness (b = .30, t(297) = 3.22, p = .002), moral justifiability of "progressive" behaviors (b = -.28, t(297) = -2.18, p = .03), and brick use flexibility (b = -.24, t(297) = -2.34, p = .02).

Composite tightness was found to partially mediate the relationship between social class and need for structure (b = -.20, t(298) = -2.69, p = .008 vs. b = -.16, t(297) = -2.12, p = .04, Sobel z = -2.17, p = .03), social class and conscientiousness (b = -.50, t(298) = -4.60, p < .001 vs. b = -.44, t(297) = -4.03, p < .001, Sobel z = -2.17, p = .03), and social class and brick use flexibility (b = .30, t(268) = -2.58, p = .01 vs. b = .25, t(267) = 2.13, p = .03, Sobel z marginally significant = 1.79, p = .07). Composite tightness also fully mediated the relationship between social class and moral justifiability of "progressive" behaviors (b = .29, t(298) = 1.97, p = .05 vs. b = .23, t(297) = 1.57, p = .12, Sobel z was marginally significant = 1.72, p = .09). See Figures 2 – 5 for the full mediation model with results.

Hypothesis 5 was supported.

Discussion

Study 1 supported many of the hypotheses made in Chapter 3. As predicted in Hypothesis 1, working class adults rated their overall lives, childhood homes, and workplaces as significantly tighter compared to middle class adults. Working class adults also desired greater tightness and felt significantly more constrained to behave in specific ways across a variety of contexts, such as in a library or on the street.

In confirmation of Hypothesis 2, working class adults viewed rules more positively and were more likely to associate rules with following behaviors and positive affective states. They also perceived breaking the rules more negatively. By contrast,

middle class adults viewed rules more negatively and were more likely to perceive them as constraining. They also associated breaking the rules with greater leeway and freedom and associated following rules with more pejorative descriptions.

Both classes also showed some predicted differences in individual characteristics, moral beliefs, and creativity as predicted by Hypothesis 3. Relative to middle class adults, working class adults were higher in need for structure, conscientiousness, and conventionalism. The working class also perceived moral "transgressions" to be less justifiable than the middle class and had significantly lower scores on measures of creativity compared to the middle class. This difference in creativity in particular reflects a common finding in the extant tightness-looseness research literature (Chua, Roth, and Lemoine, 2014; Harrington & Gelfand, 2014). No class differences were found in measures of prevention orientation, self-monitoring, self-control, caution, dutifulness, or preference for order.

As predicted in Hypothesis 4, the working class is also exposed to greater threat. More specifically, working class zip codes had higher rates of unemployment and poverty. They also had fewer foreign-born people, which may suggest that a lack of exposure to different cultures and ideas may accentuate working class tightness (Gelfand, Harrington, & Jackson, in press). The working class also reported more subjective concerns about finances and poverty and significantly more concern about debt. It is notable that the middle class reported greater concern about pollution and global warming. However, these threats are more distal. This lack of immediacy may make them less threatening in comparison to those threats experienced by the working class and may explain why the middle class isn't tighter because of them.

Finally, mediation analyses lend support to Hypothesis 5. Working class and middle-class differences in individual characteristics (e.g., need for structure and conscientiousness), moral beliefs, and creativity do appear to be influenced by differences in tightness-looseness. Taken together, these findings lend considerable support to the hypotheses identified at the end of Chapter 3.

STUDY 2: Archival Study

Study 1 found that the working class lives in a tighter world than the middle class and that this difference is reflected in divergent individual characteristics, moral perceptions, creativity, meanings attached to rules, and exposure to threat. The aim of Study 2 is to show convergence with the results of Study 1 using a larger, more representative sample. In particular, an archival dataset consisting of 34,104 participants collected by the DDB Life Style Survey in the United States from 1985 through 1998.

While tightness-looseness is not directly assessed in this survey because measures did not exist at the time of its administration, it includes items that tap into support for strong norms and perceived control. These indirectly get at differences in tightness-looseness and perceptions of constraint. This survey also includes items to assess social class differences in individual traits, psychological characteristics, and threat. Finally, this study includes new measures on ethnocentrism and xenophobia. As predicted in Chapter 3, the working class should exhibit greater ethnocentrism and xenophobia due to a lower tolerance for deviance. Additionally, a tighter, more threatening, and more constraining working-class world should also lead to lower life satisfaction (see Harrington & Gelfand, 2014), lower self-confidence, and higher stress. Finally, the higher threat experienced by the working class may also result in a greater desire for physical protection and may produce lower trust in others.

Second, Study 2 also allows for the examination of Study 1's findings in a different time period and employs a different method of indexing social class that includes not only education, but also occupational status and income. The latter ensures

that the patterns found in Study 1 are not requisite upon a specific operationalization (i.e., educational attainment) used to assess social class.

Method

The DDB Lifestyle Survey data was downloaded from the website of Robert Putnam, who used it extensively for his research on American society: http://bowlingalone.com/?page_ id=7. It contains the responses of 84,989 participants from the years 1975 through 1998 and contains numerous variables that ask about individual beliefs, desire, experiences, and perceptions. For this study, I only used data from between 1985 and 1998 due to the lack of questions to fully index social class (described below) before 1985. Demographically, this portion of the dataset from 1985 to 1998 is composed of 34,104 participants (mean per year = 2,436) from 48 states (mean per state = 710.50) with an age range from 18 to 91 (M = 41.70, SD = 12.54). The pool was also 51.4% male and 48.6% female, and 67.3% of participants were white, 3.9% were black, 0.6% were Asian/pacific islander, 0.5% were registered as "other", and 27.7% did not have a racial designation in the data. 51.3% of the sample was married, 2.1% was widowed, 6.3% were divorced, 0.9% were separated, 9.3% were single, and 30.1% had no marriage designation. The sample was politically moderate to politically conservative on average, moderately religious, and was approximately evenly distributed between the democrat (33.9%), republican (30.1%), and no party (35%) affiliations. 40.1% of respondents had a high school diploma or lower educational attainment, 30.1% had attended some college, and 29.8% had a college degree or higher. Average household income was between $35,000 and $44,999, and the sample was approximately evenly

split between white-collar and blue-collar occupations. See Table 5 for full demographic information.

Within this data set, there was no existing social class variable. Consequently, I first endeavored to create an index of social class for each participant before assessing the potential impact that social class had on their responses. First, I located demographic variables that comprised the tri-partite nature of the social class construct: educational attainment, annual household income, and occupation (DiMaggio, 2012). Education and income were already on scales going from less to more; however, occupation was simply listed in the broad occupational categories of the 1980 U.S. Census: (1) executive, administrative, and managerial occupations, (2) professional specialty occupations, (3) administrative support and clerical occupations, (4) technicians and related support occupations, (5) sales occupations, (6) service occupations, (7) farming, forest, and fishing occupations, (8) precision production, craft, and repair occupations, and (9) operators, fabricators, and laborers. As the occupational element of social class is typically defined by the status of that occupation, I sought a way to re-structure this variable on a scale of higher to lower status. To do so, I used prestige scores—the status ratings that an extensive sample of U.S. citizens gave to each category—derived from the General Social Survey in 1989. These were available from the National Opinion Research Center (1989) and have the benefit of lying in about the middle of the time period investigated by this data set. Based upon this data, the 9 occupational variables were coded from highest prestige (coded as 9) to lowest prestige (coded as 1) with professional specialty occupations coming highest in status and operators, fabricators, and laborers coming lowest in status.

The intercorrelations of these three variables were then examined to ensure they captured the social class construct accurately. Higher social class is defined by higher education, greater income, and a more prestigious occupational status, while lower social class is defined by the opposite (DiMaggio, 2012). Consequently, educational attainment, household income, and occupational status should all be positively correlated. This is indeed what I found. Educational attainment was positively correlated with household income, $r(50854) = .39$, $p < .001$, and occupational status, $r(37275) = .51$, $p < .001$. Likewise, income and occupational status were also correlated positively, $r(34225) = .33$, $p < .001$. Following this, each variable was z-scored and used to create a single, continuous variable indexing social class for each individual ($M = 0.38$, $SD = 2.29$).

This social class score was then used to run correlations with items in the data that indexed variables theoretically associated with social class differences in tightness-looseness. Items were grouped together based on theme. Exploratory factor analysis with maximum likelihood estimation found that many items factored together as grouped. Those that comprised a factor were aggregated into composite variables and are reported as such in the results section. Those that did not comprise a factor are examined as individual items. Items used in this study include:

Support for Strong Norm Enforcement. Items indexing support for strong norm enforcement include: “Police should use whatever force is necessary to maintain law and order”, “What is most important: the fight against crime OR progress toward a less impersonal, more humane society?” (reversed), and “The government should exercise more control over what is shown on TV”.

Support for Traditional Gender Norms. Items indexing support for traditional norms include: “The father should be the boss in the house”, “Men are naturally better leaders than women”, “Men are smarter than women”, “A woman’s place is in the home”, “The women’s liberation movement is a good thing” (reversed).

Perceived Control. Items indexing perceptions of control include: “I feel like I’m so busy trying to make everybody else happy that I don’t have enough control of my own life” (reversed), “Sometimes I feel that I don’t have enough control over the direction my life is taking” (reverse), and “my opinions on things don’t count very much” (reversed).

Individual Characteristics. Individual characteristics items assessed a variety of different attributes. Some assessed individual ***need for structure*** (“Changes in routine disturb me”), ***prevention-orientation*** (“I don’t like to take chances”, “On a job, security is more important than money”), and ***conscientiousness*** (“Everything is changing too fast today”). Other items assessed ***conventionalism***: “I often wish for the good old days”, “I have somewhat old-fashioned tastes and habits”, and “We’d be better off without computers”. Finally, some items assessed life ***satisfaction*** (“I am very satisfied with the way things are going in my life these days”), ***self-confidence*** (“I have more self-confidence than most of my friends”), and ***promotion-orientation*** (“I am the kind of person who knows what they want to accomplish in life and how to achieve it”). Each individual characteristic was analyzed separately.

Moral Behavior. Moral behavior items include: “I am in favor of legalizing same sex marriages”, “I am in favor of legalized abortions”, “It’s okay to cheat on your income taxes”, “I am in favor of legalizing doctor-assisted suicide”, and “The use of marijuana should be legalized”.

Threat. Threat was assessed by a variety of items tapping into different elements. Some items tapped into present financial and poverty concerns: “No matter how fast our income goes up we never seem to get ahead”, “Our family is too heavily in debt”, “I am not very good at saving money”, “Saving for the future is a luxury I can’t afford right now”, “Our family income is high enough to satisfy nearly all our important desires” (reversed), and “We have more to spend on extras than most of our neighbors do” (reversed).

Other items tapped into future concerns about finances: “Five years from now our family income will probably be a lot higher than it is now” (reversed), and “I will probably have more money to spend next year than I have now” (reversed).

Additional items tapped in concerns with the scarcity of societal resources, including “Children cannot get a good education in schools today” and “It is hard to get a good job these days”.

Some items included generalized feelings of worry about the future: “I dread the future”, and “I often worry about the future today’s children will face”.

There were also items assessing concerns about crime (“I worry a lot about myself or a family member becoming a victim of a crime”), desire for physical protection (“There should be a gun in every home”), and trust in others (“Most people are honest”).

Items assessing stress include: “I get more headaches than most people”, “I frequently get indigestion”, “I wish I knew how to relax”, and “I have trouble getting to sleep”.

Finally, other items examine concerns about external national threat and pollution: “The United States spends too much money on national defense” and “I support pollution standards even if it means shutting down some factories”.

Xenophobia and Ethnocentrism. Items indexing xenophobia and ethnocentrism include “The government should restrict imported products”, “Americans should always try to buy American products”, I am interested in the cultures of other countries”, and “I like to visit places that are totally different from my home”.

Controls. Following the examination of zero-order correlations, I examined partial correlations that controlled for participant age, gender, year of survey, political orientation, political party affiliation, religiosity, urban vs. rural location, and race. I also ran multi-level models to examine if state level tightness (from Harrington & Gelfand, 2014) moderated the link between social class and the above variables.

Results

All of the following correlations—and a full correlation matrix—are reported in Table 6.

Hypothesis 1: The working-class experiences greater tightness, higher situational constraint, and desires tighter norms than the middle class.

Support for Strong Norm Enforcement. Lower social class was associated with greater endorsement of strong norm enforcement, $r(34067) = -.12$, $p < .001$.

Support for Traditional Gender Norms. Lower social class was also associated with greater endorsement of traditional gender norms, $r(34088) = -.15$, $p < .001$.

Perceived Control. As expected, individuals with lower social class exhibited lower perceived control, $r(33984) = .18$, $p < .001$.

Hypothesis 3: The working class exhibits personality traits (e.g., greater need for structure, prevention focus, and conscientiousness) and cognitive characteristics (e.g., more stringent moral beliefs) adaptive to tighter environments.

Individual Characteristics. Lower social class was associated with items indexing greater need for structure, $r(33909) = -.07$, $p < .001$, prevention-orientation, $r(34060) = -.12$, $p < .001$, conscientiousness, $r(33932) = -.26$, $p < .001$, and conventionalism, $r(33986) = -.17$, $p < .001$. Lower social class was also associated with lower life satisfaction, $r(33857) = .17$, $p < .001$, lower self-confidence, $r(33969) = .10$, $p < .001$, and lower promotion-orientation, $r(4328) = .15$, $p < .001$.

Moral Behaviors. Lower social class was associated with lower endorsement of behaviors that are traditionally considered morally questionable, $r(34088) = .14$, $p < .001$.

Hypothesis 4: The working class is exposed to greater threat relative to the middle class.

Threat. Individuals with lower social class had stronger perceptions of present financial and poverty threat relative to those higher in social class, $r(34096) = -.35$, $p < .001$, and future financial threat, $r(34001) = -.11$, $p < .001$.

Beyond finances, individuals with lower social class also felt greater scarcity in societal resources, $r(33892) = -.11$, $p < .001$, and that finding good jobs is difficult, $r(33839) = -.21$, $p < .001$.

Lower social class was also more strongly associated with greater generalized worries about the future, $r(34004) = -.23$, $p < .001$, greater worry about crime, $r(23948) = -.10$, $p < .001$, greater desire for physical protection, $r(33909) = -.19$, $p < .001$, and lower trust in others, $r(33809) = .12$, $p < .001$.

Finally, individuals with lower social class indicated that they experienced greater symptoms of stress and poor health, $r(34030) = -.15$, $p < .001$.

However, individuals with lower social class were more inclined to believe that the U.S. spends too much on national defense, $r(4351) = -.08$, $p < .001$, and people with higher social class were more supportive of stronger pollution standards even if it means shutting down some factories, $r(33855) = .10$, $p < .001$.

Hypothesis 7: The working class exhibits more xenophobia, ethnocentrism, and negative biases toward norm-deviant individuals relative to the middle class.

Xenophobia and Ethnocentrism. Lower social class was found to be associated with greater xenophobia and ethnocentrism, $r(34049) = -.28$, $p < .001$.

Controls. The relationships above persisted even when controlling for age, gender, year of survey, political orientation, political party affiliation, religiosity, urban vs. rural location, and race.

Multi-Level Analysis. State-level tightness was not found to moderate the association between social class and the above variables.

Discussion

Study 2 demonstrated substantial convergence with the results of Study 1 using a large, representative sample. As predicted by Hypothesis 1, lower social class was associated with indicators of greater tightness and constraint, including greater support for strong norms, greater support for traditional gender norms, and lower perceived control. Lower social class was also associated with individual traits and characteristics predicted by Hypothesis 3, including indices of greater need for structure, conscientiousness, conventionalism, and prevention-orientation, more stringent moral beliefs, and lower life satisfaction and self-confidence. Hypothesis 4 was similarly supported. Lower social class was related to indicators of higher threat, including greater financial concerns, greater perceived scarcity in societal resources, more worries about crime and a stronger desire for physical protection (i.e., gun ownership), lower trust in others, greater generalized concerns about the future, and more symptoms of high stress and poor health. Lower social class, however, was not associated with a desire for more defense spending. It is possible that this result is due to lower class financial concerns and the potential for higher taxes if defense spending was increased. Finally, lower social class was associated with greater indices of xenophobia and ethnocentrism, supporting Hypothesis 7.

Beyond showing convergence with Study 1 and examining additional variables, Study 2 demonstrates that these social class patterns generalize across time and confirms

that they are not dependent upon the particular operationalization of social class (i.e., educational attainment) used in Study 1.

STUDY 3: Norm Enforcement Among Children

Thus far, the results of Study 1 and Study 2 suggest that the working class is tighter than the middle class. If this is indeed the case, one may predict that the working class would be more likely enforce norms relative to the middle class (Hypothesis 6). One might also expect to find this difference among working class and middle-class children, for a few reasons. First, past research has suggested that working class households are more rule-laden, while middle class households are more unconstrained (Kohn, 1969; Kusserow, 2012; Wiley, Rose, Burger, & Miller, 1998). This provides ample opportunity for children to become embroiled in the tight or loose normative culture of their respective social class. Moreover, developmental research has found that children have a concrete understanding of social norms by age 3 (Rakoczy, Warneken, and Tomasello, 2008). Taken together, these findings suggest that working class children aged 3 to 4 should be more likely to enforce norms relative to middle class children.

Study 3 investigates this issue in detail by examining whether social class differences in norm enforcement manifest when a child interacts with a peer—in the form of a puppet—who transgresses a social norm. Using a protocol from Rakoczy, Warneken, and Tomasello (2008), it is predicted that working class children will be more likely to protest and critique a puppet that violates an established norm and to use normative language when doing so. In addition, it is anticipated that working class children may be quicker to protest the puppet's norm violation—specifically, while the norm violation is occurring. Finally, this study explores differences in the use of explicit (verbal) versus implicit (non-verbal) protest among working class and middle-class children. Past research finds that displaying human capital through the use of verbal language is

particularly common in middle class cultural circles (see Williams, 2012). Consequently, while middle class children may be less likely to protest a norm violation overall, they may be more likely to use explicit methods when they do.

Method

Participants. This study sampled 35 children aged 3 to 4, with 20 of the children coming from middle class families (at least one parent has an educational attainment of a 4-year degree or higher) and 15 of the children come from working class families (both parents have an educational attainment of a high school diploma or lower). This social class designation based upon parental educational attainment is a well-validated standard in past research (Stephens, Fryberg, Markus Johnson, Covarrubias, 2012). One working class child was not included in analysis as they were not able to complete the experimental tasks.

Children were collected via advertising on Craigslist, web-based parenting groups, physical locations (e.g., libraries, coffee shops), and by directly contacting day care centers. Collection of working class children was particularly difficult for this experiment, as there is very little existing infrastructure available for collecting these samples.

There were 5 boys and 9 girls in the working-class group, of which 3 were White, 9 were Black, 1 was Asian, and 1 was Middle Eastern. Eight working class children were age 3 and 6 were age 4 (M = 3.43). In the middle-class group, there were 9 boys and 11 girls. 12 were White, 3 were Black, 2 were Asian, and 3 were Hispanic. Thirteen middle class children were age 3 and 7 were age 4 (M = 3.35).

Procedure. Data was collected in two primary locations: a laboratory space at the University of Maryland, College Park and at a day care center in Washington D.C. The protocol for children in both locations was exactly the same.

In this study, children underwent a task first used by Rakoczy, Warneken, and Tomasello (2008) that assesses the degree to which children uphold established norms when a peer violates them. The exact protocol was provided directly by Dr. Hannes Rakoczy via private correspondence, and Dr. Jonathan Beier and his lab at the University of Maryland provided helpful advice and training in the methods and protocol of developmental psychology that were instrumental to its implementation. This task takes approximately 25 – 35 minutes and requires two experimenters.

In this task, both experimenters engaged in a play phase with the participating child until the child felt comfortable interacting with the experimenters. After establishing comfort, the first experimenter announced that they were going to introduce the child to their friend Max, who is going to come and play with them. The second experimenter then left the room and came back with a hand puppet. Henceforth, Experimenter 2 operated as Max in the remainder of the experiment. After introducing the child to Max, Experimenter 1, the child, and Max then played together for a few more minutes before beginning the warm up tasks to ensure that the child was comfortable interacting with the puppet.

After the child became comfortable around Max, the four warm-up tasks were begun. During these tasks, Experimenter 1 showed the child and Max an instrumental action that they could reproduce: for example, drawing a happy face using a marker. The child was then given the chance to reproduce this action before it was Max's turn. During

his turn, Max forgot to do something instrumentally necessary for the completion of the task (e.g., removing the cap on the marker). At this point, approximately 10 seconds were given for the child to spontaneously intervene to correct Max's mistake. If this did not happen, Max asked the child "How does this work?" to prompt them to help. Finally, if the child did not help Max by this point, Experimenter 1 then prompted the child to assist Max by directly asking them to help him. As Rakoczy, Warneken, and Tomasello (2008) note, these warm-up tasks are important because it gets the child used to participating in the upcoming experimental tasks and also demonstrates that Max is fallible and that the child can intervene to fix his mistakes.

This study used four warm-up tasks that were as similar as possible to those used in the original experiment. The first warm-up task involved placing shapes in their matching holes on a rectangular receptacle. In this task, Max tries to put a given shape into the wrong hole. The second warm-up task was drawing a smiley face with a marker on a piece of construction paper. In this task, Max forgets to remove the marker cap. In the third task, three wooden stackable monkeys are placed one on top of the other to build a tower.[4] As in the original experiment, Max does not make a mistake on this task and does it correctly. Finally, in the fourth task, a toy car is put into a long tube and has to be pushed out with a stick. Max tries to do it with his hand, and fails. It is important to reiterate here that these tasks are instrumental in nature—no conventional label or norm is applied as in the experimental tasks.

These warm-up tasks were followed by four main target tasks. For the purposes of the present experiment, Max violated an established norm in each of these tasks and task

[4] This task was different from the original third task used by Rakoczy, Warneken, and Tomasello (2008) due to the inability to find the same materials.

order was counterbalanced across participants. In the *model phase*, Experimenter 1 brought out some novel objects and told the child that they would show them a game. They then demonstrated two different behaviors—the normatively correct action (A1) and the normatively incorrect action (A2) in a staggered fashion (A1, A2, A1, A2, and A1) for a total of five demonstrations. For example, in the "Daxing" task, Experimenter 1 brought out a wooden stick, a small piece of wood, a wooden building block, and a foam board. The experimenter then announced that they were going to show the child a game called "Daxing." For the normatively correct action (A1), they demonstrated how make a pushing tool using a wooden stick and a small piece of wood (attached via Velcro), and then put the building block on the Styrofoam board and pushed it off the end of the board with the tool. To make it evident that "Daxing" has a set of conventional norms or rules for how it's played, the experimenter told the child "This is how daxing goes. This is how everyone does daxing!" before the action. Moreover, during the fulfillment of the actual task, the experimenter stated, "I'm daxing." Finally, after completing the action, the experimenter said, "I daxed!" to further reinforce this point. For the normatively incorrect action (A2), Experimenter 1 put the block onto the board and lifted the board so that the building block slid off the end. Immediately afterwards, the experimenter looked startled and said: "Oh no! That's not how daxing goes!" Following this, there was one more performance of A1, then A2, and then A1 again.

Afterwards, the experimenter informed that child that it was now their turn to "dax". They were allowed to perform the action twice. This constituted the *practice phase*. If children decided not to participate, Experimenter 1 moved into the *test phase*.

During the *test phase*, Max was told that it was his turn to dax and the task materials were placed in front of him. Max then announced, "I'm going to dax now!" and performed the normatively incorrect behavior (A2) for a length of approximately 5 to 10 seconds. Afterwards, he stated "I daxed". After giving the child sufficient time to protest Max's action if they so chose, Max then repeated the entirety of this process again a second time. Once it appeared that the child had nothing to say or was finished protesting or correcting Max after he performed A2 for the second time, Experimenter 1 moved on to the next task.

The three other games used are as follows. The second game is called "Muping." Materials include a shoebox with a hole at the top that has one yellow and one green cup attached to its sides and three yellow and three green balls. A1, which defines the "Muping" game, involves placing the yellow balls into the yellow cup and the green balls into the green cup. A2, the norm violation, involves placing one of the colored balls into the hole in the top of shoebox. The third game is calling "Miecking." Materials include a cardboard box with orange and white cups attached to it, a plastic spoon attached to the top of the box that can be used like a catapult, and two orange and two white balls. A1, or what is called "Miecking", is placing the orange balls into the orange cup and the white balls into the white cup. A2, the norm violation, involves putting a ball onto the spoon and catapulting it. The fourth and final game is called "Baffing." Materials include two wooden building blocks, a wooden letter I, a piece of play-dough, and a 2-inch wooden tongue depressor. A1, what defines the game of "Baffing," is building a goal with the two blocks and the I as the cross-bar, making a ball out of the play-dough, and kicking the ball through the goal with the wooden depressor. A2, the norm violation, involves putting

two building blocks near each other, removing the cross-bar, and sliding the wooden depressor through the space between both blocks.

Coding. All sessions were videotaped and coded by an independent and blind research assistant. A second coder completed 20% of the cases to test for inter-rater reliability (*M* kappa = .91). For the *warm-up* tasks, codes were given for the time it took to help Max (no help = 0, before Max's request = 1, after Max's request = 2, and after Experimenter 1's directive = 3) and for the type of help given: *implicit* help (i.e., pointing, gesturing, handing things to Max, or demonstrating the correct behavior; code = 1), *explicit* help (i.e., verbally giving directions and help to Max; code = 2) or both (code = 3). A separate ratio for both help types was created using the total amount of help (for example, 2 incidences of explicit help out of three total trials equals a ratio of .66 for explicit help). If they child used both types of help in a task (a code of 3), it was counted toward both implicit and explicit ratios.

For the *practice phase* of the experimental tasks, children were given a code of 1 if they exhibited the normatively correct action and a code of 2 if they exhibited the normatively incorrect action. They were given no code if they chose not to participate.

Finally, for the *test phase*, participant behavior was divided into six subphases for each task per Rakoczy, Warneken, and Tomasello's (2008) methods—before, during, and after Max's first norm violation on the task and before, during, and after Max's second norm violation on the task. If the participant exhibited a form of verbal or physical protest during a given subphase (e.g., telling Max that he's doing the wrong thing, shaking their head, physically stopping Max's behavior, handing Max materials he needs to do the behavior correctly, or demonstrating the proper behavior), they received a code of 1 for

that subphase. A code of 0 was given for any subphase where there was no protest. Scores were aggregated to provide an overall protest score for each participant.

In subphases where protest occurred (received a code of 1), participants were also given a separate score for use of *implicit* protest (i.e., pointing, gesturing, handing things to Max, or demonstrating the correct behavior; code = 1), *explicit* protest (i.e., verbally giving directions and help to Max; code = 2) or both types of protest (code = 3). As with the warm-up coding, separate ratios for both protest types were created using the total amount of protest (e.g., three incidences of explicit protest out of five total = .60). The use of both types of protest in a single subphase (a code of 3) was counted toward both implicit and explicit ratios.

Finally, in subphases where explicit protest occurred, participants were given a code for the use of imperative (e.g., "Use the stick" or "Do this"; code = 1) or normative (e.g., "That's not how daxing goes" or "You *need* to do this"; code = 2) language.

Results

Warm-up Tasks. On average, working class children (M = 1.41, SD = .42) were quicker to help Max correct his mistake relative to middle class children (M = 1.82, SD = .40), $t(32) = -2.92$, $p = .006$, $d = -1.03$. There were no differences in the ratio of explicit, $M_{WC} = .64$, $SD_{WC} = .46$, $M_{MC} = .72$, $SD_{MC} = .33$, $t(32) = .91$, $p = .37$, or implicit help $M_{WC} = .95$, $SD_{WC} = .12$, $M_{MC} = .90$, $SD_{MC} = .19$, $t(22.01) = -.51$, $p = .61$, for the instrumental tasks.

Practice Phase. Across all four experimental tasks, there were no class differences in the proportion of correctly performed practice behaviors, $M_{WC} = .71$, $SD_{WC} = .14$, $M_{MC} = .64$, $SD_{MC} = .24$, $t(30.63) = 1.05$, $p = .30$.

Within participants, however, paired sample t-tests found that the Daxing (M = .86, SD = .26) and the Baffing (M = .85, SD = .30) tasks were significantly more likely be done correctly relative to the Muping task (M = .50, SD = .40) (compared with Daxing: $t(32) = 4.59$, $p < .001$; compared with Baffing: $t(32) = -4.36$, $p < .001$) and the Miecking task (M = .44, SD = .37) (compared with Daxing: $t(32) = 5.38$, $p < .001$; compared with Baffing: $t(32) = -5.56$, $p < .001$). Indeed, as the proportions indicate, participants did the Muping task incorrectly about half the time, while doing the Miecking task incorrectly greater than half the time. There were no differences in proportion correct between the Baffing and Daxing tasks, $t(32) = .26$, $p = .80$, or the Muping and Miecking tasks, $t(32) = .89$, $p = .38$. Overall, it appears that children found the Muping and Miecking tasks too "fun" to resist. As a consequence, incorrect practice established them as normatively weak, which made them a poor test of our prediction. Consequently, only analyses for the combined Baffing and Daxing tasks were conducted for the *test phase* data.

Test Phase. Working class children exhibited a greater amount of protest in the combined total for all subphases of the Daxing and Baffing tasks, $M_{WC} = 6.43$, $SD_{WC} = 2.68$, $M_{MC} = 4.70$, $SD_{MC} = 2.30$, $t(32) = 2.02$, $p = .05$, $d = .71$. Within the subphases of the Daxing and Baffing tasks, working class children were more likely to protest in the "during" subphase when Max is performing the norm violation, $M_{WC} = 1.86$, $SD_{WC} = 1.41$, $M_{MC} = .90$, $SD_{MC} = 1.33$, $t(32) = 2.01$, $p = .05$, $d = .71$.

When protest did occur, middle class children used a significantly higher proportion of explicit intervention, $M_{WC} = .56$, $SD_{WC} = .39$, $M_{MC} = .86$, $SD_{MC} = .26$, $t(21.77) = -2.50$, $p = .02$, $d = -1.07$. There was no difference in use of implicit intervention, $M_{WC} = .81$, $SD_{WC} = .16$, $M_{MC} = .75$, $SD_{MC} = .23$, $t(30) = .86$, $p = .40$.

There were no social class differences in the proportion of normative language use, $M_{WC} = .37$, $SD_{WC} = .33$, $M_{MC} = .41$, $SD_{MC} = .28$, $t(30) = -.37$, $p = .71$.

Controls. Controlling for race, gender, age, and task order did not alter these results.

Discussion

Supporting Hypothesis 6, Study 3 found that working class children exhibit greater protest in response to a normative violation. They were also quicker to protest both normative violations and instrumental mistakes relative to middle class children. This suggests that children as young as 3 and 4 years of age have internalized the tight versus loose norms of their respective social class groups found in Studies 1 and 2. These results are also in line with past findings that working-class households are tighter and more rule-laden relative to middle class households (Kohn, 1969; Kusserow, 2012; Wiley, Rose, Burger, & Miller, 1998). Despite predictions, there were no differences between working class and middle-class children in normative language use. As children have achieved significant normative understanding by this age (Rakoczy, Warneken, and Tomasello, 2008) it suggests that normative language is a common tool used when protesting, even though base rates of protest may differ between social class groups.

Though middle-class children were found to protest less overall, it was found that they used more explicit, or verbal, methods when they did intervene. This supports past research showing the importance that the middle-class places on using language to display human capital (Williams, 2012). In addition to internalizing greater tolerance for normative violation, middle class children appear to learn this cultural practice as well.

STUDY 4: Punishment Perceptions

By definition, tightness is indicative of lower tolerance for deviance and stronger support for the punishment of norm violation. This is supported by both the present studies and past research. For example, Studies 1 and 2 in this dissertation have found that the working class desires greater tightness—i.e., stronger punishment for wrongdoing—relative to the middle class. Similarly, tighter nations are more likely to retain the death penalty and maintain lower rates of murder, burglary, and overall crime (Gelfand et al., 2011). In the U.S., tighter states are in favor of stricter enforcement of laws, believe that police should use whatever force is necessary to maintain law and order, and have more state and local law enforcement per capita (Harrington & Gelfand, 2014). Overall, this suggests a clear link between greater tightness and support for stronger punishment. If the working class is tighter as suggested by Study 1 and Study 2, they should be more likely to perceive norm enforcement positively and have a stronger desire to enforce norms when they are violated (Hypothesis 6).

Study 4 aims to test this prediction using materials from Eriksson, Andersson, and Strimling (2016). In their original experiment, participants watched videos of four colored triangles collecting a common resource. In these videos, one triangle takes more than their fair share and is either not punished (the control condition), weakly punished by another triangle (physically hit), or strongly punished by another triangle (physically "killed"). Eriksson and colleagues found that Americans and Swedes were more likely to rate the punisher more negatively as punishment severity increased. However, Yamagishi (in preparation) found that Japanese, who are members of a tighter nation (Gelfand et al., 2011), viewed the punisher more positively as severity increased. This finding, as well as

the fact that Eriksson and colleagues' sample was predominantly middle class, suggests that the working class may show patterns similar to the Japanese. More specifically, they should be more likely to rate the punisher in the video more positively, rate the transgressor more negatively, perceive the punisher to have more positive traits, see the punisher's actions are more beneficial, identify more strongly with the punisher, and state that they would be more likely to punish the transgressor if they were participating in the scenario.

Method

Participants. 940 adults from across 49 states and territories of United States participated in this study. A power analysis for a Two-Way Fixed Effects ANOVA supports this N value using very conservative estimates. Assuming a "small" effect size of .20, a desired power of .95, a numerator df of 5, and 6 groups (2 social class groups X 3 conditions), a total sample size of 501 is recommended. I collected approximately 150 participants per group to ensure adequate power for potential post-hoc tests: power analysis for a "medium" effect size of .35, a desired power of .80, and an error of .05 recommended a sample of 130 participants per group.

Participants were collected through the services of Qualtrics. As in Study 1, participants were targeted based on educational attainment, which has previously been used as a proxy for social class (Grossman & Varnum, 2010; Snibbe & Markus, 2005; Stephens, Fryberg, & Markus, 2011; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Stephens, Markus, and Townsend, 2007; Varnum, Na, Murata, & Kitayama, 2011). Specifically, half of the participants (the working class) had a high school diploma or lower educational attainment, while the other half of the participants

(the middle class) had a 4-year degree of higher. We also ensured that participants' spouses had a similar level of educational attainment and had not taken one of our previous studies (i.e., Study 1).

107 participants were excluded due to failing attention checks, indicating that they experienced language difficulties with the study (N = 15), and/or completing the study in multiple sittings (N = 42), in a distracting environment (N = 56), in public where they did not feel free to respond honestly (N = 4), or on a small-screen device such as a cellphone or a tablet (N = 12).

Out of the remaining participants (N = 833), 405 were working class and 428 were middle class. There were a total of 270 participants (132 working class and 138 middle class) in the control condition, 267 participants (132 working class and 135 middle class) in the weak punishment condition, and 296 participants (141 working class and 155 middle class) in the strong punishment condition.

The working-class sample was 52.3% male and 47.4% female, 82.2% White, 1% Asian, 12.1% Black or African-American, 1.5% American Indian or Alaska Native, and 3.2% "Other", 95.6% ethnically non-Hispanic, 72.1% lived in urban or suburban areas, 40.2% were single, 35.3% had a spouse or a partner, 18.2% were divorced or separated, and 6.2% were widowed. 89.9% of participants had a high school diploma, 8.6% had some high school education with no degree, and 1.4% only had elementary school education or no schooling completed. The mean age was 46.71 years (*SD* = 17.23), with a range of 18 to 88. In terms of religion, 66.9% of the working-class sample was Christian, 19.5% had no religious affiliation, 4.2% were agnostic, 4.4% were atheist, 1% were Jewish, 0.2% were Muslim, 0.7% were Buddhist, and 3% indicated "other".

The middle-class sample was 42.5% male and 57.2% female, 83.6% White, 7.5% Asian, 4.9% Black or African-American, 0.7% American Indian or Alaskan Native, and 3.3% "Other", 91.1% ethnically non-Hispanic, 86.7% lived in urban or suburban areas, and 32.5% were single, 47% had a spouse or a partner, 14.9% were divorced or separated, and 5.6% were widowed. 65.7% of participants had a Bachelor's degree, 26.9% had a Master's degree, 3.7% had a professional degree (e.g., MD, DDS, JD), and 3.7% had a Doctorate. The mean age was 49.74 years (SD = 16.48), with a range of 19 to 87. In terms of religion, 61.2% of the middle-class sample was Christian, 11.4% had no religious affiliation, 7.5% were agnostic, 5.6% were atheist, 5.1% were Jewish, 2.6% were Buddhist, 0.9% were Hindu, 0.7% were Muslim, and 4.9% indicated "other". See Table 7 for full demographic information.

The working class and middle-class group showed no significant differences in religiosity (M_{WC} = 3.71, SD_{WC} = 2.13, M_{MC} = 3.71, SD_{MC} = 2.19), t(831) = .04, p = .97, or religious service attendance (M_{WC} = 4.03, SD_{WC} = 1.99, M_{MC} = 3.89, SD_{MC} = 1.78), t(808.39) = 1.12, p = .26. Politically, the working class was slightly more conservative than the middle-class sample (M_{WC} = 3.96, SD_{WC} = 1.63, M_{MC} = 4.23, SD_{MC} = 1.76), t(830.66) = -2.31, p = .02. The working-class sample was composed of 33.1% Democrats, 30.4% Republicans, 33.6% independents, and 3.0% other party affiliation, while the middle-class sample was composed of 41.6% Democrats, 26.6% Republicans, 29% independents, and 2.8% other party affiliation. In the past presidential election, 38.5% of the working-class sample voted for Donald Trump, 27.9% voted for Hilary Clinton, 4.7% voted for a third-party candidate, and 28.9% did not vote. Among the

middle-class sample, 33.6% voted for Donald Trump, 46.7% voted for Hilary Clinton, 7.9% voted for a third-party candidate, and 11.7% did not vote.

Procedure. Participants were first given the following information: "We study how people in groups interact. We do this by first assigning each participant a colored triangle (blue, purple, pink, or green). Then we have participants engage in a task online where they collect coins from a group pool. You will get to do this task today. But first we want to familiarize you with this task and make sure you understand it. We recorded a previous interaction between 4 participants. You will view this video first and then answer some questions. We will then direct you to the task you will participate in". In reality, participants would not be participating in any task, but we wanted to ensure buy-in and attention to the video that followed these instructions.

Next, participants were randomly assigned to watch one of three videos of an interaction between the four colored triangles noted above: a control video where there is no punishment of the norm violator, a video where there is weak punishment of the norm violator, and a video where there is strong punishment of the norm violator. These videos were originally created and used to study the perceptions of punishers by Eriksson, Andersson, and Strimling (2016).

In each video, the four colored triangles are in a 2-D environment that consists of four open boxes in each corner (each containing a triangle) and 15 red "coins" in the center. As the video starts, all triangles are seen taking turns to collect one coin from the pool. This establishes a norm for behavior: taking one coin at a time from the pool. After each triangle has taken two coins each, the purple (or "transgressor") triangle leaves its box and takes the remainder of the coins, breaking this norm. The green triangle then

leaves its box and looks around, as if confused as to where the coins went before returning to its box. At this point, each video deviates depending on its condition. In the no sanction (control) condition, the blue triangle repeats the green triangle's action and the video ends. In the weak punishment condition, the blue (or "punisher") triangle leaves its box, finds no coins, and then moves over to the purple triangle's box, where it proceeds to ram the purple triangle twice before returning to its box. In the strong punishment condition, the blue triangle repeats the same action but rams the purple triangle four times, which causes the purple triangle to break into multiple pieces. Links to each video are in Appendix E.

After watching a video, participants were then asked to answer some questions about the video. They were told that they could re-watch the video—embedded at the top of the web page—at any time during this process. Participants completed the following measures and questions.

Overall Positivity. Participants were first asked to rate each colored triangle on the following questions adapted from Eriksson, Andersson, and Strimling (2016): "the [color] triangle's behavior was appropriate", "I would like to spend time with a person who behaves like the [color] triangle", "I would like someone who behaved like the [color] triangle to be a member of a group that I was apart of", and "The [color] triangle did the right thing in this situation". All items were rated on a 1 (*strongly disagree*) to 7 (*strongly agree*) Likert scale. Together, these questions were used to establish an overall rating of positivity for each triangle in the video. These scales were reliable (mean α = .94) and exhibited single factor solutions in exploratory factor analyses.

Punisher Characteristics. Next, participants were asked to rate the punisher's characteristics on a 1 (*strongly disagree*) to 7 (*strongly agree*) Likert scale. Participants were asked to what extent the punisher is *trustworthy*, *aggressive*, *moral*, *cruel*, *a bully*, *takes others' interests into account*, *sticks to their principles*, and *has a lot of status*.

Punisher Actions. Participants also rated the effects of the punisher's behavior using a 1 (*strongly disagree*) to 7 (*strongly agree*) Likert scale. They were asked to indicate to what extent the punisher's actions "will cause more drawbacks than benefits to the group", "will prevent future misdeeds by members of the group", "were justified", "were necessary", "were unacceptable", "will make the group successful", "will make others less committed to the group", "were protecting the group", and "were wrong".

Identification with Punisher. Next, participants were asked to use a 1 (*strongly disagree*) to 7 (*strongly agree*) Likert scale to rate statements about their personal identification with the blue triangle, including "I see the person who is the BLUE triangle as similar to me", "I really don't like what the person who is the BLUE triangle did", and "I would do the same thing as the person who is the BLUE triangle if I was in this interaction".

Transgressor Harmfulness and Likelihood to Punish. Finally, participants used a 1 (*strongly disagree*) to 7 (*strongly agree*) Likert scale to rate statements about the harmfulness of the transgressor's actions, as well as their and others' likelihood to punish the transgressor. These include "The action taken by the person who is the PURPLE triangle is harmful", "I would forgive the person who is the PURPLE triangle if I was in this interaction", "I would punish the person who is the PUPRLE triangle if I was in this

interaction", and "Most people I know would punish the person who is the PURPLE triangle if they were in this interaction".

Video Controls. As in the original studies by Eriksson, Andersson, and Strimling (2016), participants were asked to respond to the following statements on a 1 (*strongly disagree*) to 7 (*strongly agree*) Likert scale: "I am confident I judged the correct triangles", "The triangles looked as if they were 'alive'", and "The triangles' motion looked as if they were goal-directed and intentional". Participants were also asked to answer the following open-ended questions: What do you think about what happened in the video? Who do you think the players were and how would you characterize them? Did anything surprise you about the video? Did anything confuse you about the video?

Experienced Tightness-Looseness and Desired Tightness. Participants completed the general life (α = .69), childhood home (α = .88), and workplace (α = .86) scales of tightness-looseness from Study 1 and completed a longer, 12-item scale of desired tightness (α = .91; see Appendix F for full scale). Exploratory factor analysis with maximum likelihood estimation found that each of these scales exhibited a single factor solution.

Threat. Participants also completed a scale of subjective threat (α = .97) as in Study 1. The referent in this version was changed from the perspective of the individual participant to "how likely is it that those who share your *social class background* will be affected by the following events". This referent may be more likely to get at common social class differences in ecological threat relative to the original version, which is focused on the individual. Exploratory factor analysis using maximum likelihood estimation and direct oblimin rotation found a two-factor solution for the subjective threat

scale. The first factor (α = .95) assesses issues of poverty and finances and includes the following: worries about paying rent or mortgage, poverty/lack of income, loss of housing/eviction, lack of medical care, food deprivation due to income, lack of job opportunity, debt, and job loss. The second factor includes all other threat items (α = .96) and spans concerns about crime, pollution, legal injustice, fears of terrorism, and accidents, to name but a few.

Social Class. As in Study 1, the main variable determining participant social class was educational attainment (Grossman & Varnum, 2010; Snibbe & Markus, 2005; Stephens, Fryberg, & Markus, 2011; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Stephens, Markus, and Townsend, 2007; Varnum, Na, Murata, & Kitayama, 2011). Participants indicated their highest level of education from the following options: elementary school/no schooling, some high school with no diploma, high school graduate (or equivalent), some college (1-4 years, no degree), Associate's degree (including occupational or academic degrees), Bachelor's degree (BA, BS, AB, etc.), Master's degree (MA, MS, etc.), Professional degree (MD, DDS, JD, etc.), and Doctorate degree (PhD, EdD, etc.). As in past research, participants with a high school degree or lower were considered working class, while participants with a Bachelor's degree or higher were considered middle class.

Self-report measures of social class were included for the purposes of convergent validity. In one, participants were asked to rate their perceived societal status on an 11-point scale. They were shown a picture of an 11-rung ladder and asked to "imagine the ladder below as representing the status of people in society. Those with the highest socioeconomic status (i.e., those with the most money, highest education, and best jobs)

are at the top and those with the lowest socioeconomic status (i.e., those with the least money, least education, and worst jobs) are at the bottom". They were then asked to indicate where they think they stood on this ladder (1 = *lowest*, 11 = *highest*). In a second measure, participants also rated their subjective social class on a six-point scale consisting of the following options: (1) lower lower (e.g., unskilled labor, unemployed), (2) upper lower (e.g., skilled worker, small farmer), (3) lower middle (e.g., clerical, small entrepreneurs; farmer), (4) upper middle (e.g., professionals, such as teachers, social workers; owner of a good business; owner of a large farm), (5) lower upper (e.g., professionals, such as physicians, lawyers; owner of a major business), or (6) upper upper (e.g., rich, influential, highly educated).

Demographics. Finally, participants answered various demographic questions, including age, nationality, citizenship, race, ethnicity, occupation, marital status, spouse or partner's occupation, annual income, ownership vs. renting status, state of residence and length of residence in that state, whether they lived in an urban or rural area, place of birth, parental educational attainment and occupation, whether they lived in an urban or rural area when growing up, religious affiliation, religiosity and frequency of religious service attendance, and who they voted for or planned to vote for in this year's presidential election.

Checks. Lastly, participants filled out checks that asked if they experienced language difficulties with the study, completed the study in multiple sittings, in a distracting environment, in public where they did not feel free to respond honestly, and/or completed the study on a small-screen device such as a cellphone or a tablet.

Results

In order to verify that educational attainment is a good indicator of social class status, I examined group differences in the following convergent variables: annual income, subjective ratings of social class, and perceived societal standing. Relative to the middle-class group, the working-class group had significantly less annual income (M_{WC} = 3.80, SD_{WC} = 2.07, M_{MC} = 5.90, SD_{MC} = 2.19), $t(830.99) = -14.25$, $p < .001$, and rated themselves lower in subjective social class, (M_{WC} = 2.57, SD_{WC} = 1.16, M_{MC} = 3.73, SD_{MC} = .85), $t(735.76) = -16.35$, $p < .001$, and perceived social standing, (M_{WC} = 5.02, SD_{WC} = 2.37, M_{MC} = 6.70, SD_{MC} = 1.93), $t(780.25) = -11.18$, $p < .001$.

Measures of general and domain-specific tightness, desired tightness, and subjective threat were correlated as expected based on tightness-looseness theory. Tightness was also related to stronger perceptions of the harmfulness of the transgressor's action, greater desire to punish the transgressor, and other measures. The full details of these correlational analyses are reported in Table 8.

Working class participants demonstrated significantly greater desired tightness relative to middle class participants (M_{WC} = 4.38, SD_{WC} = .81, M_{MC} = 4.19, SD_{MC} = .89), $t(831) = 3.14$, $p = .002$. There were no class differences found in tightness-looseness in this sample: overall life tightness (M_{WC} = 3.97, SD_{WC} = .51, M_{MC} = 3.97, SD_{MC} = .58), $t(831) = .15$, $p = .88$, childhood home tightness (M_{WC} = 4.58, SD_{WC} = .81, M_{MC} = 4.59, SD_{MC} = .84), $t(831) = -.07$, $p = .95$, and workplace tightness (M_{WC} = 4.25, SD_{WC} = .90, M_{MC} = 4.20, SD_{MC} = .81), $t(808.39) = .93$, $p = .35$.

Relative to the middle class, the working class exhibited significantly higher financial threat (M_{WC} = 4.70, SD_{WC} = 1.67, M_{MC} = 4.23, SD_{MC} = 1.66), $t(831) = 4.14$, $p <$

.001. Class differences in the "other" threat factor appeared to be trending, but were not significant, (M_{WC} = 3.86, SD_{WC} = 1.57, M_{MC} = 3.70, SD_{MC} = 1.43), t(813.40) = 1.60, p = .11.

Two-Way Fixed Effects ANOVAs were used to examine the main effects and interaction of experimental condition and social class on the dependent variables (see Tables 9, 10, and 11 for full details). The three video controls ("I am confident I judged the correct triangles", "The triangles looked as if they were 'alive'", and "The triangles' motion looked as if they were goal-directed and intentional") were entered as covariates to control for any potential influence on the dependent variables.

Main Effects: Experimental Condition. There was a main effect for experimental condition on overall positivity toward the transgressor, F(1, 824) = 7.43, p = .001, and punisher, F(1, 824) = 187.87, p < .001. The transgressor was rated more positively in the control condition (M = 2.92, SD = 1.90) relative to the weak punishment (M = 2.52, SD = 1.61, p < .05) and strong punishment condition (M = 2.40, SD = 1.59, p < .05). Likewise, the punisher was rated significantly more negatively as severity increased across the control (M = 5.63, SD = 1.22), weak punishment (M = 4.04, SD = 1.77), and strong punishment (M = 2.97, SD = 1.83) conditions (p < .05).

Punisher Characteristics. There was a main effect for experimental condition on ratings of punisher trustworthiness, F(1, 824) = 92.52, p < .001, aggressiveness, F(1, 824) = 251.37, p < .001, morality, F(1, 824) = 89.65, p < .001, and cruelty, F(1, 824) = 105.92, p < .001, and the extent to which the punisher is a bully, F(1, 824) = 108.65, p < .001, takes others' interests into account, F(1, 824) = 65.42, p < .001, sticks to their principles, F(1, 824) = 27.52, p < .001, and has a lot of status, F(1, 824) = 29.29, p < .001.

As punishment severity increased from the control condition to the weak punishment condition and from the weak punishment condition to the strong punishment condition, the punisher was rated as less trustworthy, more aggressive, less moral, more cruel, more of a bully, not taking others interests into account, sticking less to their principles, and lower in status (see Table 9 for full comparison details).

Punisher Actions. There was a main effect for experimental condition on ratings of the extent to which the punisher's actions will cause more drawbacks than benefits, $F(1, 824) = 105.70$, $p < .001$, will prevent future misdeeds by members of the group, $F(1, 824) = 8.67$, $p < .001$, were justified, $F(1, 824) = 45.35$, $p < .001$, were necessary, $F(1, 824) = 47.84$, $p < .001$, were unacceptable, $F(1, 824) = 57.63$, $p < .001$, will make the group successful, $F(1, 824) = 54.12$, $p < .001$, will make others less committed to the group, $F(1, 824) = 11.01$, $p < .001$, were protecting the group, $F(1, 824) = 10.82$, $p < .001$, and were wrong, $F(1, 824) = 95.88$, $p < .001$.

As punishment severity increased from the control condition to the weak punishment condition and from the weak punishment condition to the strong punishment condition, the punisher's actions were perceived as causing more drawbacks than benefits, less justified, more unnecessary, making the group less successful, making others less committed to the group, not protecting the group, wrong, and unacceptable (see Table 9 for full comparison details).

Identification with Punisher. There was a main effect for experimental condition on participant perceptions of similarity to the punisher, $F(1, 824) = 88.27$, $p < .001$, dislike of the punisher's actions, $F(1, 824) = 84.14$, $p < .001$, and indication that the

participant would do the same thing as the punisher in the scenario, $F(1, 824) = 77.85$, $p < .001$.

As severity of punishment increased from the control condition to the weak punishment condition, participants felt that the blue triangle was less similar to them, that they would not do the same thing as the blue triangle if in the interaction, and exhibited a greater dislike of the blue triangle's actions (see Table 9 for full comparison details).

There were no main effects for experimental condition on transgressor harmfulness and likelihood to punish.

Main Effects: Social Class. There was a main effect for class on perceived harmfulness of the transgressor's actions, $F(1, 824) = 8.67$, $p = .003$, indicated likelihood to forgive the transgressor, $F(1, 824) = 6.54$, $p = .01$, and perceptions that the punisher is aggressive, $F(1, 824) = 4.05$, $p = .045$. The middle class rated the transgressor's actions as significantly more harmful ($M = 4.92$, $SD = 1.83$) than the working class ($M = 5.30$, $SD = 1.64$), while the working class indicated that they would be more likely to forgive the transgressor if they were in the scenario ($M_{WC} = 4.17$, $SD_{WC} = 1.62$, $M_{MC} = 3.90$, $SD_{MC} = 1.52$) and viewed the punisher as less aggressive ($M_{WC} = 4.76$, $SD_{WC} = 2.06$, $M_{MC} = 5.01$, $SD_{MC} = 1.97$). No other main effects for social class were found. See Table 10 for full results.

Interactions: Experimental Condition and Social Class. There was a significant interaction between social class and experimental condition on the perception that the punisher sticks to their principles, $F(2, 824) = 5.09$, $p = .006$. Against predictions, working class participants ($M = 4.09$, $SD = 1.80$) were significantly less likely to rate the punisher as principled in the strong punishment condition relative to middle class

participants (M = 4.70, SD = 1.45), $p < .05$. There were no class differences in the control (M_{WC} = 5.33, SD_{WC} = 1.45, M_{MC} = 5.17, SD_{MC} = 1.27, $p > .05$) or weak punishment conditions (M_{WC} = 4.83, SD_{WC} = 1.51, M_{MC} = 4.87, SD_{MC} = 1.56, $p > .05$).

There was a similar interaction between social class and experimental condition on the perception that the punisher is high in status, $F(2, 824) = 5.52$, $p = .004$. Working class participants (M = 3.50, SD = 1.69) perceived the punisher to be lower in status in the strong punishment condition relative to middle class participants (M = 4.04, SD = 1.54), $p < .05$. There were no class differences in the control (M_{WC} = 4.77, SD_{WC} = 1.46, M_{MC} = 4.54, SD_{MC} = 1.35, $p > .05$) or weak punishment conditions (M_{WC} = 4.27, SD_{WC} = 1.60, M_{MC} = 4.13, SD_{MC} = 1.44, $p > .05$). There were no other interactions between social class and experimental condition. See Table 11 for full results.

Controls. The above results did not change when controlling for gender, age, race, religiosity, political affiliation, or urban-rural location.

Discussion

Hypothesis 6 predicted that working class would perceive norm enforcement more positively and have a stronger desire to enforce norms when they are violated. Study 4 examined this prediction using a paradigm by Eriksson, Andersson, and Strimling (2016) where participants viewed the punishment of a norm violator in the context of a group interaction task. It was predicted that working class participants would view the punisher and their actions more positively and the transgressor more negatively, view the punisher as having more desirable characteristics and be more likely to identify with them, and indicate that they would personally punish the transgressor more if they were participating in the scenario. These predictions were not supported by the results of

this study. While working class participants did rate the punisher as less aggressive than the middle class, they were also more likely to indicate that they would forgive the transgressor, rated the transgressor's actions as less harmful, and rated the punisher as having poorer characteristics in the strong punishment condition. Overall, this study found that the severity of punishment used against the transgressor had a greater impact on participant response than social class. There was a general main effect for experimental condition such that greater punishment severity resulted in more negative views of transgressor and punisher, poorer ratings of punisher characteristics, worse ratings for the outcomes of punisher actions, and lower identification with the punisher.

For those social class differences that were found, it is possible that this experiment unintentionally primed monetary concerns that resulted in trends that were opposite of the initial predictions. First, the instructions given to the participants indicated that the people participating in the video were collecting "coins" from a group pool. While it was thought that viewing the transgressor taking an unfair distribution of this resource would cause working class participants to perceive the transgressor more negatively and their punishment more positively, there are reasons to think that construing this resource as monetary might shift working class responses. In particular, working class participants have demonstrated a consistent pattern of financial worry across Studies 1, 2, and 4. Moreover, past research has found a greater incidence of generosity, charity, and empathy among lower class individuals (Piff, Kraus, Côté, Cheng, & Keltner, 2010). For these reasons, it is possible that working class participants were more understanding of the transgressor's action because they better identified with the transgressor and empathized with their motivations. Future research might look at

identification with the transgressor to see if this is the case. Additionally, future research may be better served by re-construing the collective resource as something other than monetary to see if the original predictions are supported.

Finally, it was also found that, while the working class exhibited greater exposure to threat and higher desired tightness, the differences in tightness-looseness found in Study 1 did not replicate.

Study 5: Explicit Bias Toward Deviance

Past research has found that tightness is associated with more negative reactions toward "deviance", including greater ethnocentric and xenophobic attitudes toward foreigners and more stringent moral beliefs (Gelfand et al., 2011; Harrington & Gelfand, 2014). In the present research, Study 1 and Study 2 have found the same patterns amongst tighter working-class adults, while Study 4 found that working class children are quicker and more likely to protest deviant behaviors made by a peer. Deviance also takes the form of physical stigmas. Gelfand and colleagues (in preparation) have found that individuals with physical stigmas such as tattoos and purple hair extensions received much slower customer service in tighter nations compared to looser nations. Given this stable link between tightness and higher bias toward deviance, it is predicted that individuals from tighter, working class backgrounds should exhibit more bias toward norm-deviant individuals relative to those from the middle class (Hypothesis 7).

Study 5 examines this prediction by exposing middle class and working-class participants to pictures of "normal" non-deviant faces and faces with physical deformities. This study also investigates how the controllability of physical stigma impacts perceptions of positivity. It is predicted that the working class will react more negatively toward facial deformity when it is controllable (e.g., having excessive facial piercings and tattoos) relative to deformities that are uncontrollable (e.g., birth defects) because it implies a free choice to be deviant by the individual in question.

Method

Participants. 315 adults from across 41 states and territories of United States participated in this study. A power analysis for a Repeated Measures ANOVA with

Within-Between Interaction supports this N value using very conservative estimates. Assuming a "small" effect size of .20, a desired power of .95, 2 groups (social class), 3 within-person measurements (facial type: non-deviant, controllable deformity, and uncontrollable deformity), a correlation of .30 among measurements, and a nonsphericity correction of 1, a total sample size of 92 is recommended. I collected approximately 150 participants per group to ensure adequate power for potential post-hoc tests: power analysis for a "medium" effect size of .35, a desired power of .80, and an error of .05 recommended a sample of 130 participants per group.

Participants were collected through the services of Qualtrics. As in Study 1 and 5, participants were targeted based on educational attainment, which has previously been used as a proxy for social class (Grossman & Varnum, 2010; Snibbe & Markus, 2005; Stephens, Fryberg, & Markus, 2011; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Stephens, Markus, and Townsend, 2007; Varnum, Na, Murata, & Kitayama, 2011). Specifically, half of the participants (the working class) had a high school diploma or lower educational attainment, while the other half of the participants (the middle class) had a 4-year degree of higher. We also ensured that participants' spouses had a similar level of educational attainment and had not taken one of our previous studies (i.e., Study 1 or Study 4).

Four participants were excluded due to failing attention checks, indicating that they experienced language difficulties with the study (N = 3) or in public where they did not feel free to respond honestly (N = 1). Out of the remaining participants (N = 311), 155 are working class and 156 are middle class.

The working-class sample was 71% male and 29% female, 89.7% White, 6.5% Black or African-American, 1.3% Asian, 1.3% American Indian or Alaska Native, and 1.3% "Other", 94.2% ethnically non-Hispanic, and 62.6% lived in urban or suburban areas. 92.9% of participants had a high school diploma, 6.5% had some high school education with no degree, and 0.6% only had elementary school education or no schooling completed. The mean age was 56.59 years (SD = 15.14), with a range of 18 to 82. In terms of religion, 80.6% of the working-class sample was Christian, 7.7% had no religious affiliation, 1.3% were agnostic, 3.2% were atheist, 0.6% were Jewish, 0.6% were Buddhist, and 5.8% indicated "other".

The middle-class sample was 29.5% male and 70.5% female, 82.1% White, 5.1% Black or African-American, 9.6% Asian, 0.6% American Indian or Alaskan Native, and 2.6% "Other", 96.8% ethnically non-Hispanic, and 88.5% lived in urban or suburban areas. 62.2% of participants had a Bachelor's degree, 30.8% had a Master's degree, 1.9% had a professional degree (e.g., MD, DDS, JD), and 5.1% had a Doctorate. The mean age was 50.13 years (SD = 14.78), with a range of 24 to 80. In terms of religion, 66% of the middle-class sample was Christian, 8.3% had no religious affiliation, 5.1% were agnostic, 7.7% were atheist, 5.1% were Jewish, 1.3% were Buddhist, 2.6% were Hindu, 1.3% were Muslim, 0.6% were Sikh, and 1.9% indicated "other". See Table 12 for full demographic information.

The working class and middle-class group showed no significant differences in religiosity (M_{WC} = 4.22, SD_{WC} = 2.03, M_{MC} = 4.03, SD_{MC} = 2.24), t(306.22) = .77, p = .44, frequency of religious service attendance (M_{WC} = 3.75, SD_{WC} = 1.94, M_{MC} = 3.78, SD_{MC} =

1.74), $t(304.72) = -.13$, $p = .90$, or political belief ($M_{WC} = 3.61$, $SD_{WC} = 1.44$, $M_{MC} = 3.87$, $SD_{MC} = 1.74$), $t(299.08) = -1.43$, $p = .14$.

Materials. In this study, participants were exposed to pictures of faces with no deviant features, controllable deviant features, and uncontrollable deviant features. Controllable deviance was operationalized as excessive facial tattoos and piercings, as these features are non-normative and their acquisition is one of individual choice. Uncontrollable deviance was operationalized as facial birth defects, as individuals with them have no choice in their appearance.

Initial picture selection was focused on finding white faces for each picture type to avoid racial confounds in the current study. Non-deviant faces came from a past study on implicit attitudes by Nosek and colleagues (2007). Faces with controllable and uncontrollable deformities were found on the Internet. As in other studies examining explicit and implicit bias using photographs, all faces were cropped so that they only showed the face between the ears, eyebrows, and chin, and all photos were made black-and-white. This avoids confounds based on characteristics that are not relevant to the characteristic being investigated, such as haircut, background, and eye color.

Pilot test. An initial selection of 6 faces per facial condition (18 total) was piloted tested with 49 participants on Amazon's Mechanical Turk to ensure that controllable deformities were actually perceived to be more controllable relative to both uncontrollable deformity and non-deformity. This pilot test also examined attractiveness ratings to ensure that attractiveness differences would not be a confound between the two deformity facial types. Given that facial deformities are not generally perceived to be

attractive, we expected to find that non-deviant faces would be rated as more attractive relative to faces with either controllable or uncontrollable deformities.

Participants viewed all 18 photos and presentation was randomized through Qualtrics' survey software. Participants were asked to indicate what race and gender they thought the person was, rate the attractiveness of each picture on a 1 – 9 Likert scale (1 = *very low*, 5 = *average*, 9 = *very high*), and answer the following question on a 1 (*no control*) through 9 (*complete control*) Likert scale: "How much control did this person have over the way they currently appear?"

A One-Way Repeated Measures ANOVA found a significant effect of facial type of perceived controllability, $F(2, 96) = 82.92$, $p < .001$. Faces with controllable deformities ($M = 6.87$, $SD = 2.07$) were rated as having had more control over their current appearance relative to both non-deviant faces ($M = 6.20$, $SD = 2.21$, $p < .05$) and faces with uncontrollable deformities ($M = 2.48$, $SD = 1.36$, $p < .05$). There was also a significant difference between non-deviant faces and faces with uncontrollable deformities ($p < .05$).

Another One-Way Repeated Measures ANOVA found a significant effect of facial type on perceived attractiveness, $F(1.81, 83.44) = 126.66$, $p < .001$. As expected, non-deviant faces ($M = 5.79$, $SD = 1.07$) were rated as more attractive relative to faces with controllable ($M = 2.85$, $SD = 1.31$, $p < .05$) and uncontrollable ($M = 2.54$, $SD = 1.21$, $p < .05$) deformities. However, faces with controllable and uncontrollable deformities showed no difference in attractiveness ($p > .05$).

The majority of participants rated all faces to be racially white. To avoid racial confounds to the greatest extent possible, the 3 uncontrollable and 3 controllable

deformity faces with the highest percentage score for being perceived as racially white were chosen for inclusion in Study 5. This provided a final total of 6 non-deviant and 6 deviant pictures for this study (see Appendix G).

Procedure. Participants were told that they would be asked to answer a few questions about a series of 12 photographs. They were also told to be as honest as possible in their responses, as all answers are anonymous. Following these instructions, participants were asked to rate the 12 pictures found in Appendix G. Presentation of faces was randomized through Qualtrics' survey software.

Overall Positivity. Participants rated all faces on a 1 – 9 Likert scale (1 = *very low*, 5 = *average*, 9 = *very high*) on the following characteristics: attractiveness, social status, trustworthiness, friendliness, competence, and social deviance. In later open-ended questions following the task, many participants indicated confusion about the meaning of the term social deviance. Moreover, social deviance ratings were found to correlate positively with the other five ratings—theoretically, social deviance should show a negative correlation with these ratings. Given these issues, social deviance ratings were removed from analysis. As an overall rating of positivity, the remaining five items showed high reliability ($\alpha = .90$) and showed a single factor solution in exploratory factor analysis using maximum likelihood estimation.

Controls. In order to control for confounds, participant faces were also rated on age (18-24, 25-34, 35-44, 45-54, or 55+), gender (male or female), and race (Asian, American Indian/Alaska Native, Black, Hispanic/Latino, White, Middle Eastern/North African, Native Hawaiian/Pacific Islander, Other). As in the pilot study, the majority of participants rated all faces as racially white. Finally, participants were also asked to rate

each face on controllability using a 1 (*no control*) through 9 (*complete control*) Likert scale: "How much control did this person have over the way they currently appear?"

Experienced Tightness-Looseness and Desired Tightness. Following the facial rating task, participants were asked to fill out the general (α = .69), childhood home (α = .87), and workplace (α = .84) scales of tightness-looseness and the 12-item the scale of desired tightness (α = .91; see Appendix F). Exploratory factor analysis with maximum likelihood estimation found that each of these scales exhibited a single factor solution.

Threat. Participants also completed the scale of subjective threat (α = .96) used in Study 5. As in Study 5, exploratory factor analysis using maximum likelihood estimation and direct oblimin rotation found a two-factor solution for the subjective threat scale. The first factor (α = .94) assesses issues of poverty and finances and includes the following: worries about paying rent or mortgage, poverty/lack of income, loss of housing/eviction, lack of medical care, food deprivation due to income, lack of job opportunity, debt, and job loss. The second factor includes all other threat items (α = .96) and spans concerns about crime, pollution, legal injustice, fears of terrorism, accidents, and others.

Social Class. As in Study 1 and Study 4, the main variable determining participant social class was educational attainment (Grossman & Varnum, 2010; Snibbe & Markus, 2005; Stephens, Fryberg, & Markus, 2011; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Stephens, Markus, and Townsend, 2007; Varnum, Na, Murata, & Kitayama, 2011). Participants indicated their highest level of education from the following options: elementary school/no schooling, some high school with no diploma, high school graduate (or equivalent), some college (1-4 years, no degree), Associate's degree (including occupational or academic degrees), Bachelor's degree (BA,

BS, AB, etc.), Master's degree (MA, MS, etc.), Professional degree (MD, DDS, JD, etc.), and Doctorate degree (PhD, EdD, etc.). As in past research, participants with a high school degree or lower were considered working class, while participants with a Bachelor's degree or higher were considered middle class.

Self-report measures of social class were included for the purposes of convergent validity. In one, participants were asked to rate their perceived societal status on an 11-point scale. They were shown a picture of an 11-rung ladder and asked to "imagine the ladder below as representing the status of people in society. Those with the highest socioeconomic status (i.e., those with the most money, highest education, and best jobs) are at the top and those with the lowest socioeconomic status (i.e., those with the least money, least education, and worst jobs) are at the bottom". They were then asked to indicate where they think they stood on this ladder (1 = *lowest*, 11 = *highest*). In a second measure, participants also rated their subjective social class on a six-point scale consisting of the following options: (1) lower lower (e.g., unskilled labor, unemployed), (2) upper lower (e.g., skilled worker, small farmer), (3) lower middle (e.g., clerical, small entrepreneurs; farmer), (4) upper middle (e.g., professionals, such as teachers, social workers; owner of a good business; owner of a large farm), (5) lower upper (e.g., professionals, such as physicians, lawyers; owner of a major business), or (6) upper upper (e.g., rich, influential, highly educated).

Demographics. Participants then answered various demographic questions, including age, nationality, citizenship, race, ethnicity, occupation, marital status, spouse or partner's occupation, annual income, ownership vs. renting status, state of residence and length of residence in that state, whether they lived in an urban or rural area, place of

birth, parental educational attainment and occupation, whether they lived in an urban or rural area when growing up, religious affiliation, religiosity and frequency of religious service attendance, and who they voted for or planned to vote for in this year's presidential election.

Checks. Lastly, participants filled out checks that asked if they experienced language difficulties with the study, completed the study in multiple sittings, in a distracting environment, in public where they did not feel free to respond honestly, and/or completed the study on a small-screen device such as a cellphone or a tablet.

Results

In order to verify that educational attainment is a good indicator of social class status, I examined group differences in the following convergent variables: annual income, subjective ratings of social class, and perceived societal standing. Relative to the middle-class group, the working-class group had significantly less annual income (M_{WC} = 4.73, SD_{WC} = 1.95, M_{MC} = 6.78, SD_{MC} = 1.80), $t(309) = -9.64$, $p < .001$, and rated themselves lower in subjective social class, (M_{WC} = 2.68, SD_{WC} = .94, M_{MC} = 3.76, SD_{MC} = .80), $t(300.42) = -10.94$, $p < .001$, and perceived social standing, (M_{WC} = 5.44, SD_{WC} = 2.01, M_{MC} = 6.95, SD_{MC} = 1.95), $t(309) = -6.71$, $p < .001$.

Measures of general and domain-specific tightness, desired tightness, subjective threat, and explicit bias were generally correlated as expected based on tightness-looseness theory. The full details of these analyses are reported in Table 13.

The working class exhibited higher perceptions of workplace tightness relative to the middle class (M_{WC} = 4.48, SD_{WC} = .84, M_{MC} = 4.28, SD_{MC} = .76), $t(307) = 2.18$, p = .03, as well as higher desired tightness (M_{WC} = 5.34, SD_{WC} = 1.05, M_{MC} = 4.98, SD_{MC} =

1.12), $t(307) = 2.96$, $p = .003$. There were no class differences in perceptions of overall life tightness ($M_{WC} = 3.92$, $SD_{WC} = .51$, $M_{MC} = 3.94$, $SD_{MC} = .57$), $t(307) = -.28$, $p = .78$, or childhood home tightness ($M_{WC} = 4.67$, $SD_{WC} = .79$, $M_{MC} = 4.59$, $SD_{MC} = .74$), $t(307) = 1.01$, $p = .32$.

The working class rated their social class group to be affected by greater overall threat ($M_{WC} = 4.00$, $SD_{WC} = 1.34$, $M_{MC} = 3.50$, $SD_{MC} = 1.31$), $t(309) = 3.36$, $p = .001$, greater financial threat ($M_{WC} = 4.46$, $SD_{WC} = 1.55$, $M_{MC} = 3.63$, $SD_{MC} = 1.58$), $t(309) = 4.66$, $p < .001$, and greater exposure to the threats in the "other" factor ($M_{WC} = 3.78$, $SD_{WC} = 1.44$, $M_{MC} = 3.43$, $SD_{MC} = 1.33$), $t(309) = 2.18$, $p = .03$.

Mixed ANOVAs were used to examine manipulation checks and analyze the potential interaction between class and facial type on explicit bias. Given the disproportionate gender differences between each class group, gender was added as a covariate in the manipulation check and explicit bias analyses below.

Manipulation Checks. A Mixed ANOVA found a significant main effect for facial type on perceived controllability, $F(1.93, 594.43) = 43.59$, $p < .001$. As in the pilot test, faces with controllable deformities ($M = 7.41$, $SD = 1.72$) were rated as having had more control over their current appearance than non-deviant faces ($M = 6.51$, $SD = 1.86$, $p < .001$) and faces with uncontrollable deformities ($M = 2.62$, $SD = 1.71$, $p < .001$). There was also a significant difference between non-deviant faces and faces with uncontrollable deformities ($p < .001$). There was no interaction between facial type and class, $F(1.93, 594.43) = 1.24$, $p = .29$.

Hypothesis 7: The working class will exhibit more bias toward norm-deviant individuals with controllable deformities relative to the middle class.

Explicit Bias. A Mixed ANOVA found a significant interaction between facial type and social class on overall positivity, $F(1.93, 593.55) = 3.91$, $p = .02$ (see Figure 6). Working class participants ($M = 3.66$, $SD = 1.46$) rated controllable deformity faces to be significantly less positive relative to middle class participants ($M = 4.00$, $SD = 1.27$), $p < .05$. There were no class differences in positivity ratings of non-deviant faces ($M_{WC} = 5.67$, $SD_{WC} = .83$, $M_{MC} = 5.71$, $SD_{MC} = 1.23$, $p > .05$) or in ratings of faces with uncontrollable deformities ($M_{WC} = 4.26$, $SD_{WC} = 1.27$, $M_{MC} = 4.34$, $SD_{MC} = 1.09$, $p > .05$).

This interaction persisted in additional Mixed ANOVAs that controlled for political belief, religiosity, religious service attendance, race, and urban-rural location, as well as participant ratings of the photographed subject's age, race, and gender.

There was also a main effect for facial type on overall positivity, $F(1.93, 593.55) = 26.54$, $p < .001$. Non-deviant faces ($M = 5.69$, $SD = 1.05$) were rated significantly more positive relative to both controllable deformity ($M = 3.83$, $SD = 1.38$, $p < .001$) and uncontrollable deformity faces ($M = 4.30$, $SD = 1.18$, $p < .001$). Uncontrollable deformity faces were also rated more positive than controllable deformity faces ($p < .001$).

Discussion

As predicted by Hypothesis 7, Study 5 found that the working class viewed controllable facial deformities more negatively than the middle class, while no class differences were found in perceptions of uncontrollable deformities. This suggests that negative perceptions of deviance may hinge upon the extent to which a deviant action or

appearance is freely chosen. Future work should examine implicit bias to determine if this same pattern holds. It is possible that tighter working-class norms may cause implicit bias toward all forms of deviance—a bias that may be adjusted after the fact based on perceived controllability.

Consistent with hypothesis 1 and 4, working class participants also rated their workplaces as tighter, desired greater tightness, and indicated greater threat exposure compared to middle class participants.

Study 6: College Student Outcomes

Cultural mismatch theory (Stephens, Townsend, Markus, & Phillips, 2012) suggests that individuals from working class backgrounds should experience poorer outcomes in environments with predominantly middle-class norms. One setting where this may occur is in institutions of higher learning. For example, Stephens, Fryberg, Markus, Johnson, and Covarrubias (2012) found that the individualistic values of universities are at odds with the collectivistic values of working class college students, causing them to suffer poorer academic outcomes. In particular, universities were more likely to value independent research and the expression of one's individuality, while working class students were motivated by the values of collaboration and giving back to their family and community.

Tightness-looseness theory makes a different prediction with a similar result. To wit, universities are unstructured environments by their very nature. Students are often living on their own for the first time and are required to set their own schedule. They determine when they study, when they sleep, and if they go to class. In college classrooms, students are exposed to the free exchange of ideas and are given more responsibility to oversee their own progress and learning. There is very little hand holding by professors.

By contrast, working class households and cultural environments are comparatively higher in structure and rules (Kohn, 1969; Kusserow, 2012; Wiley, Rose, Burger, & Miller, 1998), while the predominant linguistic style in working class circles is the "restricted code"—a form of speech that is more concrete and consists of simple grammatical structures and fewer conditional statements (Bernstein, 1973). In short,

working class college students coming from these environments should be accustomed to higher structure and routine and simple, straightforward information without excessive nuance. As a consequence of this preference for simplicity, the unstructured, more complex environment of a university may be particularly overwhelming for working class students.

Study 6 explores this issue using data from a study investigating longitudinal outcomes among freshman college students. It is predicted that working class freshman will experience more negative academic and psychological outcomes compared to middle class freshman. Moreover, working class students should exhibit a higher preference for simplicity that is at odds with the unstructured and complex nature of college life, and this characteristic should mediate the link between social class and outcomes (Hypothesis 8).

Method

Participants. 150 freshman students from the University of Maryland contributed to this study through their participation in a broader longitudinal study examining student adjustment across the first year of college. Twenty-two participants were removed for failing attention checks (N = 18 total) and/or indicating that they experienced language issues with this study (N = 6 total), leaving a total of 128 participants.

As in past research, participant social class was determined by parental educational attainment of a 4-year college degree (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012). Based upon this criterion, participants were asked to indicate if they were a first-generation or continuing-generation college student. The final sample consisted of 58 first-generation college students and 70 continuing-generation college

students—heretofore referred to as working class and middle class, respectively. Despite best efforts, this study had a relatively low response rate due to its use of a freshman only sample. Consequently, this study is underpowered. According to power analyses for two-tailed t-tests, with a medium effect size of .35 and a desired power of .80, each group should ideally be composed of 130 participants.

To ensure that students were accurate in their assessment of their college generational status, I examined their answers to questions about their parent's educational attainment. As expected, parents of working class students either attended some college or had attained a high school diploma or lower education, while parents of middle class students had attained a bachelor's degree or higher education.

In order to ensure that this distinction captured actual differences in social class status, I examined group differences in the following convergent variables: parents' annual income, subjective ratings of familial social class, and perceived familial societal standing. Relative to the middle class, the working class group reported significantly less annual parental household income (M_{WC} = 6.29, SD_{WC} = 2.19, M_{MC} = 7.87, SD_{MC} = 1.19), $t(84.30) = -4.93$, $p < .001$, $d = -1.07$, and rated their families as lower in subjective social class, (M_{WC} = 3.22, SD_{WC} = .75, M_{MC} = 4.20, SD_{MC} = .40), $t(83.55) = -8.90$, $p < .001$, $d = -1.95$, and perceived societal standing, (M_{WC} = 5.63, SD_{WC} = 1.50, M_{MC} = 7.86, SD_{MC} = 1.09), $t(97.84) = -9.34$, $p < .001$, $d = -1.89$.

The working-class sample was 27.6% male and 72.4% female, 33.3% White, 29.8% Asian, 22.8% Black or African-American, 1.8% American Indian/Alaskan Native, 1.8% Native Hawaiian/Pacific Islander, and 10.5% "Other" race, and 81.0% ethnically non-Hispanic. 88.7% of the working-class sample was from Maryland and 91.4% grew

up in a city or the suburbs. The mean age was 18.28 (*SD* = 1.75) with a range from 17 to 31. In terms of religion, 60.4% were Christian, 3.4% were Buddhist, 1.7% were Hindu, 8.6% were Muslim, 1.7% were Jewish, 1.7% were Sikh, 15.5% were agnostic, 8.6% were atheist, and 1.7% had no religious affiliation.

The middle-class sample was 40% male and 60% female, 70% White, 18.6% Asian, 5.7% Black or African-American, 2.9% American Indian/Alaskan Native, and 2.9% "Other" race, and 95.7% ethnically non-Hispanic. 62.9% of the middle-class sample was from Maryland and 94.3% grew up in a city or the suburbs. The mean age was 18 (*SD* = 0.30) with a range from 18 to 19. In terms of religion, 50% were Christian, 2.9% were Buddhist, 4.3% were Hindu, 1.4% were Muslim, 12.9% were Jewish, 1.4% were Sikh, 10% were agnostic, 18.9% were atheist, 1.4% had no religious affiliation, and 1.4% indicated "other" religion. See Table 14 for full demographic information.

The working class and middle-class group showed no significant differences in religiosity (M_{WC} = 3.38, SD_{WC} = 1.77, M_{MC} = 2.97, SD_{MC} = 1.70), $t(126) = 1.32$, $p = .19$.

Procedure. The data comprising Study 6 was part of a longitudinal survey to examine freshman student outcomes. Time 1 data were collected in October of 2016 and Time 2 data were collected in February of 2017. Participants responded to the following measures applicable to the present research question.

Time 1 Measures. At Time 1, participants responded to two domain-specific measures of tightness about the childhood home (α = .88) and childhood school (α = .85) and a general scale of overall perceived life tightness before coming to the University of Maryland (α = .88). As in Study 1, each scale consisted of 13 items rated on a 6-point

Likert scale (1 = *strongly disagree*, 6 = *strongly agree*) that were adapted from Gelfand and colleagues' (2011) (see Appendix A for full scales).[5]

Participants also responded to a 4-item measure of desired tightness (α = .71) at Time 1. Items include: "A functioning society requires strong rules", "A functioning society requires strong punishment for wrongdoing", "It is important to follow the rules", and "Punishments are necessary for correcting bad behavior". Participants used a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*) to rate their agreement with each item (α = .71)

Time 2 Measures. Participants responded to the 4-item measure of desired tightness again at Time 2 (α = .78).

Participants also responded to a 5-item measure of preference for simplicity that was created for this study. It consisted of the following items: "I wish my days were less complex and more straightforward", "I like my life to be simple", "Too much information makes me confused", "I like to live in a clear and uncomplicated world", and "I dislike nuance and prefer simple solutions to problems" (α = .76). Items were rated on a 6-point Likert scale (1 = *strongly disagree*, 6 = *strongly agree*).

Participants responded to 5 separate items that were used to index perceived academic preparation. Three items were assessed on a 6-point Likert scale (1 = *strongly disagree*, 6 = *strongly agree*): "I feel less academically prepared than other first-year students at UMD" (reversed), "I feel that I've been exposed to academic thoughts (prominent literature, authors, academic figures, and ideas) to a lesser extent than other first-year students" (reversed), and "I feel well-equipped to thrive academically at the

[5] All scales in this section exhibited single factor solutions in Exploratory Factor Analysis with maximum likelihood estimation unless otherwise specified in the text.

University of Maryland". A fourth item was rated on a 7-point Likert scale (1 = *not at all worried*, 7 = *very worried*): "How worried are you that you might not be successful in your courses?" (reversed). A fifth item was rated on a different 7-point Likert scale (1 = *not very successful*, 7 = *very successful*): "How successful do you feel you will be in your courses?" Exploratory factor analysis using maximum likelihood estimation found that these items formed a single factor and were generally reliable ($\alpha = .69$). Consequently, these items were used to create a composite score of perceived academic preparation. Items were z-scored before aggregating.

Participants were also asked to provide their numerical grade point average for the Fall 2016 semester.

Finally, participants responded to four questions that were used to index stress and withdrawal intentions. Two questions were assessed on a 5-point Likert scale (1 = *never*, 5 = *very often*): "Since you came to UMD, how often have you felt that you were unable to control the important things in your life?" and "Since you came to UMD, how often have you felt confident about your ability to handle your personal problems?" A third item was also assessed on a 5-point Likert scale (1 = *not at all*, 5 = *very much*): "How much do you think about leaving UMD by the end of the year?" A fourth item consisted of a mental health checklist that asked participants to indicate if they experienced one or more symptoms listed (see Appendix H). Participant's scores on this item consisted of a raw count of the number of symptoms a participant indicated that they experienced. Exploratory factor analysis using maximum likelihood estimation found that these four items formed a single factor and were generally reliable ($\alpha = .68$).

Consequently, these items were used to create a composite score of stress and withdrawal intentions. Items were z-scored before aggregating.

Social Class. The main variable determining participant social class was parental educational attainment. This was collected at Time 1. Participants indicated their parents' highest level of education from the following options: less than a high school degree, high school graduate (or equivalent), some college (1-4 years, no degree), Associate's degree (including occupational or academic degrees), Bachelor's degree (BA, BS, AB, etc.), Master's degree (MA, MS, etc.), Professional degree (MD, DDS, JD, etc.), and Doctorate degree (PhD, EdD, etc.).

Self-report measures of social class were included for the purposes of convergent validity. In one, participants were asked to rate their family's perceived societal status on an 11-point scale. They were shown a picture of an 11-rung ladder and asked to "imagine the ladder below as representing the status of people in society. Those with the highest socioeconomic status (i.e., those with the most money, highest education, and best jobs) are at the top and those with the lowest socioeconomic status (i.e., those with the least money, least education, and worst jobs) are at the bottom". They were then asked to indicate where they think their family stood on this ladder (1 = *lowest*, 11 = *highest*). In a second measure, participants also rated their family's subjective social class on a six-point scale consisting of the following options: (1) lower lower (e.g., unskilled labor, unemployed), (2) upper lower (e.g., skilled worker, small farmer), (3) lower middle (e.g., clerical, small entrepreneurs; farmer), (4) upper middle (e.g., professionals, such as teachers, social workers; owner of a good business; owner of a large farm), (5) lower

upper (e.g., professionals, such as physicians, lawyers; owner of a major business), or (6) upper upper (e.g., rich, influential, highly educated).

Demographics. Participants also completed various demographic questions that asked about age, nationality, citizenship, race, ethnicity, parental occupation(s), parents' annual income, parents' ownership vs. renting status, state of residence and length of residence in that state, whether they lived in an urban or rural area before coming to college, place of birth, parental educational attainment and occupation, religious affiliation, religiosity, and frequency of religious service attendance. Demographics were collected at Time 1.

Checks. Lastly, participants filled out checks at Time 1 and Time 2 that asked if they experienced language difficulties with the study, completed the study in multiple sittings, in a distracting environment, in public where they did not feel free to respond honestly, and/or completed the study on a small-screen device such as a cellphone or a tablet.

Results

General and domain-specific tightness measures were positively intercorrelated. Perceived tightness of life before UMD was positively correlated with childhood home tightness, $r(119) = .75$, $p < .001$, and childhood school tightness, $r(120) = .49$, $p < .001$. Childhood home tightness was positively correlated with childhood school tightness, $r(120) = .25$, $p = .007$. Tightness-looseness measures were also correlated with desired tightness at Time 1 and Time 2 and preference for simplicity (see Table 15 for full details).

Tightness-Looseness. T-tests for independent samples found no differences between working class and middle class students in tightness perceptions of the childhood home, (M_{WC} = 4.11, SD_{WC} = .74, M_{MC} = 4.14, SD_{MC} = .80), $t(119) = -.19$, p = .85, childhood school, (M_{WC} = 4.35, SD_{WC} = .72, M_{MC} = 4.51, SD_{MC} = .57), $t(120) = -1.41$, p = .16, or general life before college, (M_{WC} = 4.00, SD_{WC} = .69, M_{MC} = 4.06, SD_{MC} = .72), $t(120) = -.81$, p = .42.

Desired Tightness. Relative to middle class students (M = 4.26, SD = .71), working class students (M = 4.51, SD = .72) exhibited significantly tighter beliefs, $t(120) = 1.96$, p = .05, d = .36, at Time 1, but not at Time 2 (M_{WC} = 4.31, SD_{WC} = .90, M_{MC} = 4.15, SD_{MC} = .75), $t(126) = 1.08$, p = .28.

Preference for Simplicity. Working class students (M = 4.18, SD = .94) exhibited a stronger preference for simplicity relative to middle class students (M = 3.79, SD = .66), $t(99.95) = 2.80$, p = .008, d = .56.

Academic Preparation. Working class students (M = -.22, SD = .74) perceived themselves to be less academically prepared relative to middle class students (M = .18, SD = .55), $t(103.08) = -3.48$, p = .001, d = -.69.

Academic Performance. Working class students (M = 3.31, SD = .59) exhibited poorer academic performance in comparison to middle class students (M = 3.56, SD = .44), $t(101.18) = -2.59$, p = .01, d = -.51.

Stress and Withdrawal Intentions. Working class students (M = .19, SD = .86) exhibited higher stress and withdrawal intentions relative to middle class students (M = -.16, SD = .51), $t(89.01) = 2.66$, p = .009, d = .56.

Controls. The findings above were not affected when controlling for gender, race, religiosity, or growing up in an urban vs. rural location.

Mediation Analyses. Mediation analyses were used to examine whether preference for simplicity mediated social class differences in academic preparation, academic performance (GPA), and stress and withdrawal intentions (see Figure 2).

In this mediation model, the path from social class (the independent variable) to preference for simplicity (the mediator) was significant (b = -.40, $t(126)$ = -2.80, p = .006). The paths from preference for simplicity (the mediator) to the following dependent variables were also significant: academic preparation (b = -.30, $t(125)$ = -4.56, $p < .001$), academic performance (GPA) (b = -.14, $t(124)$ = -2.44, p = .02), and stress and withdrawal intentions (b = .24, $t(125)$ = 3.14, p = .002).

Preference for simplicity partially mediated the relationship between social class and academic preparation (b = .41, $t(126)$ = 3.57, $p < .001$ vs. b = .29, $t(125)$ = 2.62, p = .01, Sobel z = 2.35, p = .02), social class and GPA (b = .24, $t(125)$ = 2.67, p = .009 vs. b = .19, $t(124)$ = 2.07, p = .04, Sobel z marginally significant = 1.76, p = .08), and social class and stress and withdrawal intentions (b = -.34, $t(126)$ = -2.78, p = .006 vs. b = -.25, $t(125)$ = -2.03, p = .05, Sobel z = -2.04, p = .04). See Figures 8 – 10 for the full mediation model with results.

Discussion

Study 6 examined the prediction that working-class freshman would experience more negative academic and psychological outcomes due to a mismatch between their preference for simplicity and the unstructured and complex nature of college life (Hypothesis 8). This prediction was supported by the results of this study. Working class

freshman exhibited poorer academic preparation, lower GPAs, and higher stress and withdrawal intentions relative to middle class students. Some of these differences may be explained by the lower educational attainment of working class parents resulting in lower academic exposure for working class children. However, student outcomes were mediated by a higher preference for simplicity in the working-class sample. This suggests that working class students have become accustomed to environments that are higher in structure, routine, and straightforward norms, and that the more unstructured, complex environment of institutions of higher education is what is impacting their outcomes. This relationship would not be expected if lower GPA and poorer academic preparation were merely due to academic exposure. Rather, the routinized structure cultivated in working class communities and households appears as a prominent explanatory variable.

Typically, higher education is framed as a level playing field for students of all backgrounds. However, there are invisible values that structure these environments in ways that may negatively impact students of some backgrounds over others. In particular, while the lack of structure in university settings is geared toward fostering the freedom to pursue one's educational goals unhindered by excessive regulations, this is a normative structure that favors people with middle class backgrounds. They are used to navigating more unstructured environments and have been raised to be more self-directive (Kohn, 1969). From a practical standpoint, universities should be more cognizant of this cultural mismatch and should institute policies that can dampen its initial shock for incoming working-class students. This may enhance both performance and retention.

CHAPTER 5:
General Discussion

Past research has demonstrated that social classes are culturally distinct entities with their own identities, values, beliefs, and customs. In this dissertation, I argued that social class cultural differences are also expressed in terms of *tightness-looseness*, or the degree to which a cultural entity has strong norms and low tolerance for norm deviance (*tight*) or weak norms and high tolerance for norm deviance (*loose*). Based upon past evidence from multiple fields of social science as well as theoretical arguments outlined in Chapter 3, the primary prediction of this dissertation was that the working class is comparatively tighter relative to the middle class (Hypothesis 1). This prediction was supported in Study 1, where working class adults indicated greater tightness in their overall life, childhood home, and workplace, perceived greater situational constraint across contexts, and desired greater tightness. Study 2 also found support for this hypothesis, as lower social class was associated with indicators of greater tightness and constraint, including greater support for strong norms, greater support for traditional gender norms, and lower perceived control. Study 5 similarly found greater ratings of workplace tightness and more desired tightness among working class participants. However, while desired tightness was higher among the working class in Study 4 and Study 6, experienced tightness did not replicate in these studies. Overall, however, there is considerable support for the notion that the working class is tighter than the middle class.

Hypothesis 2 predicted that the working class would perceive rules more positively than the middle class and that the middle class would be likely to see rules as obstacles. Study 1 found strong support for this prediction. Working class adults

associated the word “rules” with more positive and less negative valence in comparison to middle class adults and with words indicating following behavior (e.g., comply) and positive affective states (e.g., happy). By contrast, middle class adults associated “rules” with more constraint words (e.g., constricting), the phrase “following the rules” with more pejoratives (e.g., boring), and the phrase “breaking the rules” with more leeway words (e.g., freedom).

Hypothesis 3 predicted that the working class would exhibit personality traits and cognitive characteristics adaptive to tighter environments. Study 1 and Study 2 found considerable support for this prediction. In Study 1, working class adults exhibited greater need for structure, higher conscientiousness and conventionalism, lower creativity, and felt that moral transgressions were less justifiable. In Study 2, individuals with lower social class exhibited lower endorsement of morally questionable behaviors and a greater prevalence of individual characteristics traditionally associated with tightness, including higher need for structure, higher prevention-orientation, greater conscientiousness, greater conventionalism, greater xenophobia and ethnocentrism, and lower life satisfaction and confidence.

Hypothesis 4 predicted that the working class would be exposed to greater threat relative to the middle class. This prediction was supported across the board. Study 1 found that working class zip codes had higher rates of unemployment and deep poverty and found that working class participants reported more concerns about finances, poverty, and debt. Study 2 found similar perceptions of financial and poverty threat associated with lower social class, as well as greater scarcity in societal resources, greater worry about crime and desire for physical protection (i.e., gun ownership), greater worry

about the future, and greater symptoms of stress and poor health. Finally, Studies 4 and 5 found greater working-class concern with a variety of threatening events, including lack of finances, high poverty, and greater crime.

Hypothesis 5 predicted that working class and middle-class differences in characteristics, beliefs, cognitions, and behavior would be mediated by tightness-looseness. Support for this prediction was found in Study 1, where tightness perceptions mediated class differences in individual characteristics, morality beliefs, and creativity.

Hypothesis 6 predicted that the working class would be more likely to perceive norm enforcement positively and more likely enforce norms relative to the middle class. Study 3 did find support for the prediction that working-class children would be more likely to enforce norms when a peer violated them. Indeed, working class children were quicker and more likely to protest normative violations relative to middle class children. Overall, this suggests that social class differences in tightness-looseness may take root as early as 3 to 4 years of age. Study 4 found no class differences in positive perceptions of norm enforcement. However, this study was done with a triangle task that might have lacked realism.

Hypothesis 7 predicted that the working class would exhibit more negative biases toward norm-deviant individuals and greater ethnocentrism. Study 2 found support for greater working-class xenophobia and ethnocentrism using a large, representative sample. Study 1 also found that working class zip codes had a lower percentage of foreign-born people, which could present a mechanism by which working class ethnocentrism becomes reinforced. Finally, Study 5 found that working class participants rated faces with controllable deformities (i.e., piercings and tattoos) more negatively than middle

class participants. This provides substantial support for the notion that the working class exhibits greater negative bias toward norm-deviant individuals. More particularly, it suggests that norm deviance is viewed negatively when it is perceived to be a matter of controllable free choice.

Finally, Hypothesis 8 predicted that working class freshman would experience more negative academic and psychological outcomes due to a mismatch between their preference for simplicity and the unstructured and complex nature of college life. This prediction was supported by the results of Study 6. Working class freshman exhibited poorer academic preparation, lower GPAs, and higher stress and withdrawal intentions relative to middle class students. Moreover, these social class differences were mediated by a higher preference for simplicity in the working-class sample.

Taken together, these studies are generally found to support the main thesis that the working class is tighter than the middle class and provides a convergent and coherent picture of social class differences in tightness-looseness.

Limitations and Future Directions

One limitation of this research is its use of an exclusively U.S. sample. However, past research has found that social class cultural differences are additive rather than interactive with national culture. In particular, Grossman and Varnum (2010) found that working class and middle-class differences in dispositional bias are found in both the United States and Russia, nations with very different national level value orientations (Hofstede, 1980). Kohn and colleagues (Kohn, 1969; Kohn, Naoi, Schoenbach, Schooler, & Slomcyznski, 1990; Kohn, Zaborowski, Janicka, Khmelko, Mach, Paniotto et al., 2002) have found a similar national transcendence of social class value differences in

regard to conformity and self-direction. Despite this, future research should attempt to replicate and test the predictions of this dissertation in cross-national studies.

Another potential limitation of this research is that it was conducted with only two class groups: the working class and the middle class. While the present studies and past research have found significant differences in culture, values, and lifestyle between both, most theory and research on social class misses the extreme ends of the spectrum: those embedded in extreme poverty on the lowest end and those with generational wealth and peak status on the highest end. While much of this is due to the difficulty of collecting these samples, it may be fruitful for future research to do so. More specifically, there are some theoretical reasons to believe that the patterns of tightness-looseness found between the working class and the middle class will not simply trend in a linear pattern as one proceeds from the lowest end of the social class spectrum to the highest. It may, in fact, be curvilinear in nature.

Much like the working class, the world may appear to be highly threatening for those in extreme poverty. However, unlike the working class, those in extreme poverty are not simply threatened with "hard living" (Howell, 1972; Williams, 2012) but are already living it. The little amount of past research that has been conducted with these populations has found that they report extreme social isolation (Stephens, Cameron, and Townsend, 2014). In other words, whereas the working class can rely on strong normative institutions and support systems as a bulwark against the threats in their environment, those in extreme poverty often don't have that option. Indeed, they may live in environments where desperation leads to greater norm violation (e.g., crime).

Ultimately, this may lead those in extreme poverty to perceive their world as chaotic, high in anomie and, consequently, as much looser.

By contrast, there are reasons to think that the upper class may exhibit greater tightness compared to the middle class. In particular, the upper class has reached the peak of societal status and may cultivate stronger norms that help preserve that identity. This may mean narrowly educating children so they endorse the current established social system or fostering very particular behaviors (e.g., social etiquette). Additionally, upper class individuals may have to be more cautious about people attempting to take advantage of them due to their wealth or status. Consequently, being conscientious about choosing one's romantic partners, friends, and acquaintances may be important and may have many more rules attached to it. The upper classes are often replete with rich tradition as well, something that separates their class status from those upper middle-class individuals who may be equally as wealthy. Indeed, being part of this class often comes with certain obligations and expectations, such as attending specific colleges or universities (the fifth generation Harvard graduate, for instance) and taking on a particular occupation (e.g., the family with multiple generations of doctors and physicians). Consequently, this may result in fewer life choices for upper class children relative to their middle-class peers. In all, the upper classes have reached the peak of status and income and in order to preserve their influence, elite standing, and retain the identity that separates them from other classes, they may be tighter than the middle class. Ultimately, future research may benefit by expanding the investigation of social class differences in tightness-looseness beyond the working class-middle class distinction used in the present studies.

There are a few additional directions that would also be pertinent to investigate in the near future. In particular, using an implicit association test to examine if implicit biases mirror the explicit biases of Study 5. It is possible that an implicit association test may find that both types of deviant faces (those with controllable deformities and uncontrollable deformities) are equally likely to be perceived negatively by working class participants. This would be a reasonable prediction based on tightness-looseness theory. However, as explicit biases are amenable to conscious adjustment, it may be that working-class participants took controllability into account and adjusted their perceptions before responding in Study 5. From a practical standpoint, extant implicit biases toward all deviant faces may suggest that working class participants would be likely to exhibit prejudice toward uncontrollable deviance under conditions where implicit biases cannot be easily adjusted—when cognitive load is high, for example (Govorun & Payne, 2006; Bodenhausen, 1990).

Finally, it would also be helpful for future research to examine how economic fluctuations impact social class differences in tightness-looseness. For example, how do the structural variables supporting middle class looseness (e.g., looser workplaces and occupations) interact with the financial threat of a severe economic downturn? Does one have more sway on the strength of norms than the other?

Conclusion

In all, this dissertation makes a number of contributions. First, it introduces the tightness-looseness construct to the study of social class. As demonstrated above, the present research suggests that tightness-looseness is a distinguishing cultural characteristic between the working class and the middle class and may serve to provide a

parsimonious explanation for a variety of social class distinctions in psychological characteristics, perceptions, biases, and behaviors. Second, it's part of an ongoing effort (see Mu, Kitayama, Han, and Gelfand, 2015, for example) to bring tightness-looseness research into the laboratory setting in order to examine relatively unexplored frontiers, such as its manifestation in behavior and cognition. Finally, this is the first study of its kind that examines issues of tightness-looseness and its impact on the behavior of children. Given that culture and social class are an important element impacting the individual throughout the life cycle, it is important for tightness-looseness research to begin examining developmental questions. To sum, the potential contributions of this dissertation abound, and it is my personal hope that its results provide a fruitful source for future research.

Table 1

Study 1 Demographics

	Working Class (N = 149)	Middle Class (N = 151)
Age		
Mean (SD)	48.93 (12.51)	46.87 (14.45)
Range	19 - 72	22 - 78
Gender		
Male	69 (46.3%)	66 (43.7%)
Female	80 (53.7%)	85 (56.3%)
Race		
American Indian/Alaskan Native	0 (0.0%)	2 (1.3%)
Asian	3 (2%)	18 (11.9%)
Black	8 (5.4%)	5 (3.3%)
White	136 (91.3%)	124 (82.1%)
Other	2 (1.3%)	2 (1.3%)
Ethnicity		
Hispanic	7 (4.7%)	13 (8.6%)
Non-Hispanic	142 (95.3%)	138 (91.4%)
Education		
Elementary School	2 (1.3%)	0 (0.0%)
High school, no degree	6 (4%)	0 (0.0%)
High school graduate	141 (94.6%)	0 (0.0%)
Bachelor's degree	0 (0.0%)	89 (58.9%)
Master's degree	0 (0.0%)	44 (29.1%)
Professional degree (e.g., MD, JD)	0 (0.0%)	8 (5.3%)
Doctoral degree	0 (0.0%)	10 (6.6%)
Household Annual Income		
Less than $10,000	2 (1.3%)	0 (0.0%)
$11,000 to $20,000	9 (6.0%)	1 (0.7%)
$21,000 to $30,000	19 (12.8%)	12 (7.9%)
$31,000 to $40,000	26 (17.4%)	8 (5.3%)
$41,000 to $50,000	21 (14.1%)	10 (6.6%)
$51,000 to $60,000	18 (12.1%)	15 (9.9%)
$61,000 to $70,000	11 (7.4%)	13 (8.6%)
$71,000 or more	43 (28.9%)	92 (60.9%)
Marital Status		
Single	34 (22.8%)	37 (24.5%)
Married	84 (56.4%)	95 (62.9%)
Engaged	1 (0.7%)	4 (2.6%)
Separated	3 (2.0%)	0 (0.0%)
Divorced	18 (12.1%)	9 (6.0%)
Widowed	9 (6.0%)	6 (4.0%)
Religion		
Christian	105 (70.5%)	99 (65.6%)
Buddhist	0 (0.0%)	4 (2.6%)
Hindu	0 (0.0%)	5 (3.3%)
Muslim	1 (0.7%)	1 (0.7%)
Jewish	1 (0.7%)	7 (4.6%)

Agnostic	5 (3.4%)	4 (2.6%)
Atheist	5 (3.4%)	11 (7.3%)
No Religious Affiliation	25 (16.8%)	19 (12.6%)
Other	7 (4.7%)	1 (0.7%)
Location		
Urban	47 (31.6%)	63 (41.7%)
Suburban	65 (43.6%)	73 (48.3%)
Rural	37 (24.8%)	15 (10.0%)

Table 2

Study 1 Tightness-Looseness Correlations

	General Life Tightness	Childhood Home Tightness	Childhood School Tightness	Workplace Tightness
Desired Tightness	.41***	.28***	.39***	.29***
Situational Constraint	-14.*	-.03	-.14*	.09
Individual Characteristics				
Prevention Orientation	.42***	.03	-.06	.22***
Self-Monitoring	.17**	.15*	.19**	.11*
Self-Control	.10†	.20***	.29***	.12*
Cautiousness	.01	.16**	.35***	-.05
Dutifulness	.13*	.29***	.50***	.21***
Conscientiousness	.25***	.18**	.16**	.10†
Conventionalism	.13*	.09	.04	.01
Preference for Order	.36***	.29***	.33***	.25***
Need for Structure	.17**	.20***	.29***	.11†
Moral Justifiability				
Cheating and Corruption	.13*	-.15*	-.28***	-.02
"Progressive" Behaviors	-.12*	-.15**	-.16**	-.07
Norm Violation Severity	.23***	.13*	.14*	.15**
Word Valence				
"Rules" – Positive	.19**	.14*	.18**	.15*
"Rules" – Negative	-.08	-.08	-.08	-.01
"Following Rules" – Positive	.07	.05	.15*	.14*
"Following Rules" – Negative	-.01	-.04	-.01	-.05
"Breaking Rules" – Positive	-.18**	-.24***	-.13*	-.04
"Breaking Rules" – Negative	.31***	.23***	.24***	.16*
Creativity				
Fluency (paper clip)	-.20**	-.08	-.09	-.05
Flexibility (paper clip)	-.18**	-.01	-.02	-.06
Fluency (brick)	-.28***	-.07	-.08	-.12*
Flexibility (brick)	-.22***	-.09	-.02	-.09
Objective Threat				
Poverty	.10†	.02	-.08	.06
Deep poverty	.10†	.01	-.09	.09
Unemployment	.12*	.07	.02	.09
Personal crime risk	.08	.01	-.03	.03
Property crime risk	.11†	.03	-.03	.06
Air pollution	.07	.05	.02	.04
Foreign population	.03	-.04	-.14*	-.04
Subjective Threat				
Finances and Poverty	.31***	-.04	-.09†	.14*
Crime and Bodily Harm	.32***	.07	.06	.18**
Societal Problems/Injustice	.29***	-.03	-.15**	.14*

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

Table 3

Study 1 T-test Table

	Working Class Mean (SD)	Middle Class Mean (SD)	t	df	d
Social Class Correlates					
Annual Income Bracket	5.47 (2.07)	6.87 (1.70)	-6.40***	285.94	-.74
Subjective Social Class	3.02 (1.10)	3.85 (0.85)	-7.35***	278.72	-.84
Perceived Social Standing	5.48 (2.00)	6.74 (1.84)	-5.68***	298	-.66
Tightness-Looseness					
General Life	3.98 (0.64)	3.82 (0.67)	2.14*	297.70	.25
Childhood Home	4.55 (0.81)	4.38 (0.72)	1.91†	298	.22
Childhood School	4.78 (0.64)	4.69 (0.66)	1.29	298	-
Workplace	4.40 (0.78)	4.12 (0.79)	3.07**	298	.36
Desired Tightness	5.83 (1.02)	5.52 (0.96)	2.72**	298	.32
Situational Constraint	3.26 (0.95)	3.04 (0.87)	2.04*	298	.24
Individual Characteristics					
Prevention Orientation	5.73 (1.54)	5.60 (1.62)	0.70	298	-
Self-Monitoring	4.43 (0.81)	4.53 (0.71)	-1.14	298	-
Self-Control	4.33 (0.98)	4.51 (1.04)	-1.57	298	-
Cautiousness	4.13 (0.93)	4.18 (0.91)	-0.52	297.65	-
Dutifulness	4.79 (0.84)	4.69 (0.84)	1.06	298	-
Conscientiousness	5.40 (0.99)	4.90 (0.89)	4.60***	298	.53
Conventionalism	5.18 (1.29)	4.46 (1.21)	5.00***	298	.58
Preference for Order	5.76 (0.96)	5.63 (0.97)	1.14	298	-
Need for Structure	4.14 (0.68)	3.94 (0.64)	2.69**	298	.31
Moral Justifiability					
Cheating and Corruption	2.24 (1.37)	2.60 (1.28)	-2.35*	295.78	-.27
"Progressive" Behaviors	3.87 (1.28)	4.16 (1.25)	-1.97*	298	-.23
Norm Violation Severity	3.22 (0.79)	3.33 (0.70)	-1.28	298	-
Creativity					
Fluency (paper clip)	2.84 (1.98)	4.10 (3.69)	-3.51**	205.57	-.49
Flexibility (paper clip)	1.69 (0.70)	1.95 (0.74)	-2.99**	267	-.37
Fluency (brick)	3.22 (2.01)	3.66 (3.00)	-1.43	268	-
Flexibility (brick)	1.83 (0.93)	2.14 (1.01)	-2.58*	268	-.32
Subjective Threat					
Finances and Poverty	4.03 (1.91)	3.68 (1.83)	1.62††	298	.19
Debt	4.46 (2.13)	3.78 (2.14)	2.77**	298	.32
Crime and Bodily Harm	4.51 (1.62)	4.33 (1.47)	-1.11	298	-
Societal Problems/Injustice	3.58 (1.70)	3.79 (1.65)	0.97	298	-

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$, †† $p < .15$

Table 4

Study 1 Mann-Whitney U Table

	Working Class Mean	Middle Class Mean	z
Word Valence (proportion)			
"Rules" – Positive	.48	.38	-3.01**
"Rules" – Negative	.21	.28	2.44*
"Following Rules" – Positive	.61	.59	-0.53
"Following Rules" – Negative	.20	.21	-0.32
"Breaking Rules" – Positive	.75	.71	-1.04
"Breaking Rules" – Negative	.08	.11	-2.02*
Objective Threat			
Poverty (%)	14.58	13.74	-1.65†
Deep poverty (%)	8.24	7.56	-2.03*
Unemployment (%)	8.31	7.30	-2.27*
Personal crime risk	74.16	84.54	-1.55
Property crime risk	76.33	91.91	-0.96
Air pollution	100.92	100.13	-0.78
Foreign population (%)	8.77	17.09	-5.27***

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

Table 5

Study 2 Demographics

Participants (N)	34,104
Social Class Index (z-score)	
Mean (SD)	0.38 (2.29)
Range	-5.31 – 5.40
Age	
Mean (SD)	41.70 (12.54)
Range	18 – 91
Gender	
Male	17,528 (51.4%)
Female	16,576 (48.6%)
Race	
White	22,941 (67.3%)
Black	1,319 (3.9%)
Asian/Pacific Islander	214 (0.6%)
Other	187 (0.5%)
Missing/no data	9,443 (27.7)
Education	
Elementary School	548 (1.6%)
High school, no degree	1,763 (5.2%)
High school graduate	11,378 (33.4%)
Some college	10,249 (30.1%)
Bachelor's degree	5,095 (14.9%)
Post-graduate degree	5,071 (14.9%)
Income	
Under $10,000	1,800 (5.3%)
$10,000 - $19,999	4,742 (13.9%)
$20,000 - $29,999	6,152 (18%)
$30,000 - $39,999	5,935 (17.4%)
$40,000 - $49,999	4,842 (14.2%)
$50,000 - $59,999	3,697 (10.8%)
$60,000 - $69,999	2,378 (7%)
$70,000 - $79,999	1,687 (4.9%)
$80,000 - $89,000	967 (2.8%)
$90,000 - $99,999	603 (1.8%)
$100,000 or more	1,301 (3.8%)
Occupation	
Executive, administrative, and managerial	5,798 (17%)
Professional specialty	5,924 (17.4%)
Administrative support and clerical	6,350 (18.6%)
Technicians and related support	1,271 (3.7%)
Sales	2,745 (8%)
Service	4,036 (11.8%)
Farming, forest, and fishing	602 (1.8%)
Precision production, craft, and repair	3,539 (10.4%)
Operators, fabricators, and laborers	3,839 (11.3)
Marital Status	
Married	17,503 (51.3%)

Widowed	708 (2.1%)
Divorced	2,149 (6.3%)
Separated	292 (0.9%)
Single	3,184 (9.3%)
Missing/no data	10,268 (30.1%)
Religiosity (1 – 6)	
Mean (SD)	4.08 (1.72)
Range	1 - 6
Political Beliefs	
Very conservative	1,089 (3.2%)
Moderately conservative	3,938 (11.5%)
Middle of the road	4,561 (13.4%)
Moderately liberal	1,746 (5.1%)
Very liberal	328 (1%)
Missing/no data	22,442 (65.8%)
Political Affiliation	
Democrat	2,491 (7.3%)
Republican	2,211 (6.5%)
Third-party	83 (0.2%)
No party affiliation	2,571 (7.5%)
Missing/no data	26,748 (78.4%)

Table 6

Study 2 Correlation Table

	1	2	3	4	5	6	7
1. Social Class Index	-						
2. Support for Strong Norm Enforcement	-.12***	-					
3. Support for Traditional Gender Norms	-.15***	.23***	-				
4. Perceived Control	.18***	.13***	.13***	-			
5. Need for Structure	-.07***	.13***	.16***	.24***	-		
6. Prevention-Orientation	-.12***	.19***	.07***	.17***	.23***	-	
7. Conscientiousness	-.26***	.23***	.18***	.26***	.21***	.23***	-
8. Conventionalism	-.17***	.21***	.25***	.18***	.20***	.21***	.32***
9. Satisfaction	.17***	.03***	-.01	.33***	-.08***	.02***	-.13***
10. Self-Confidence	.10***	.01	.02***	-.21***	.12***	-.10***	-.08***
11. Promotion-Orientation	.17***	.04*	.02	-.30***	-.11***	-.04**	-.10***
12. Moral Behavior	.14***	-.22***	-.28***	-.03***	-.06***	-.14***	-.17***
13. Financial and Poverty Concerns	-.35***	.01	.03***	.29***	.06***	.02***	.19***
14. Future Concerns about Finances	-.11***	.05***	.05***	.12***	.08***	.12***	.10***
15. Scarcity of Societal Resources	-.21***	.10***	.10***	.25***	.12***	.12***	.24***
16. Generalized Worries about the Future	-.23***	.16***	.12***	.34***	.19***	.17***	.33***
17. Concerns about Crime	-.10***	.11***	-.01	.20***	.11***	.12***	.20***
18. Desire for Physical Protection	-.19***	.13***	.25***	.07***	.06***	-.01	.09***
19. Trust in Others	.12***	-.03***	-.06***	-.10***	-.04***	.03***	-.10***
20. Stress	-.15***	.11***	.07***	.36***	.21***	.11***	.23***
21. Concerns about External National Threat	-.08***	-.01	-.05**	.08***	.03†	.01	.09***
22. Support for Pollution Standards	.10***	.01	-.11***	-.01	.01	.03***	-.02**
23. Xenophobia and Ethnocentrism	-.28***	.17***	.23***	.12***	.13***	.15***	.21***

	8	9	10	11	12	13	14
8. Conventionalism	-						
9. Satisfaction	-.06***	-					
10. Self-Confidence	-.03***	.19***	-				
11. Promotion-Orientation	-.02	.32***	.38***	-			
12. Moral Behavior	-.20***	-.03***	.06***	-.01	-		
13. Financial and Poverty Concerns	.09***	-.46***	-.15***	-.28***	-.01*	-	
14. Future Concerns about Finances	.07***	-.13***	-.18***	-.23***	-.09***	.09***	-
15. Scarcity of Societal Resources	.15***	-.20***	-.04***	-.08***	.03***	.25***	.06***
16. Generalized Worries about the Future	.20***	-.29***	-.14***	-.17***	-.04***	.25***	.13***
17. Concerns about Crime	.12***	-.10***	-.02*	-.02	.02**	.15***	-.03***
18. Desire for Physical Protection	.13***	-.02***	.09***	.03*	.01*	.04***	-.02**
19. Trust in Others	-.02***	.17***	.03***	.05***	-.01*	-.14***	.01†
20. Stress	.15***	-.26***	-.14***	-.12***	-.01†	.25***	.03***
21. Concerns about External National Threat	.01	-.09***	-.02	.01	.13***	.11***	-.05***
22. Support for Pollution Standards	-.02**	.01*	.02***	.07***	.11***	-.01†	-.08***
23. Xenophobia and Ethnocentrism	.18***	-.04***	-.06***	-.10***	-.15***	.11***	.12***

	15	16	17	18	19	20	21
15. Scarcity of Societal Resources	-						
16. Generalized Worries about the Future	.24***	-					
17. Concerns about Crime	.19***	.20***	-				
18. Desire for Physical Protection	.14***	.09***	.08***	-			
19. Trust in Others	-.17***	-.14***	-.12***	-.09***	-		
20. Stress	.23***	.30***	.22***	.08***	-.12***	-	
21. Concerns about External National Threat	.09***	.13***	.05**	-.10***	-.05**	.10***	-
22. Support for Pollution Standards	.02***	-.01*	.07***	-.08***	.05***	.02**	.14***
23. Xenophobia and Ethnocentrism	.10***	.15***	.08***	.17***	-.07***	.10***	-.03*

	22	23
22. Support for Pollution Standards	-	
23. Xenophobia and Ethnocentrism	-.15***	-

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

Table 7

Study 4 Demographics

	Working Class (N = 405)	Middle Class (N = 428)
Age		
Mean (SD)	46.71 (17.23)	49.74 (16.48)
Range	18 - 88	19 - 87
Gender		
Male	212 (52.3%)	182 (42.5%)
Female	192 (47.4%)	245 (57.2%)
Other	1 (0.2%)	1 (0.2%)
Race		
American Indian/Alaskan Native	6 (1.5%)	3 (0.7%)
Asian	4 (1.0%)	32 (7.5%)
Black	49 (12.1%)	21 (4.9%)
White	333 (82.2%)	358 (83.6%)
Other	13 (3.2%)	14 (3.3%)
Ethnicity		
Hispanic	18 (4.4%)	38 (8.9%)
Non-Hispanic	387 (95.6%)	390 (91.1%)
Education		
No schooling or less than 1 year	1 (0.2%)	0 (0.0%)
Elementary or middle School	5 (1.2%)	0 (0.0%)
High school, no degree	35 (8.6%)	0 (0.0%)
High school graduate	364 (89.9%)	0 (0.0%)
Bachelor's degree	0 (0.0%)	281 (65.7%)
Master's degree	0 (0.0%)	115 (26.9%)
Professional degree (e.g., MD, JD)	0 (0.0%)	16 (3.7%)
Doctoral degree	0 (0.0%)	16 (3.7%)
Household Annual Income		
Less than $10,000	46 (11.4%)	15 (3.5%)
$11,000 to $20,000	85 (21.0%)	22 (5.1%)
$21,000 to $30,000	79 (19.5%)	43 (10.0%)
$31,000 to $40,000	63 (15.6%)	45 (10.5%)
$41,000 to $50,000	46 (11.4%)	41 (9.6%)
$51,000 to $60,000	34 (8.4%)	48 (11.2%)
$61,000 to $70,000	15 (3.7%)	46 (10.7%)
$71,000 or more	37 (9.1%)	168 (39.3%)
Marital Status		
Single	163 (40.2%)	139 (32.5%)
Married	134 (33.1%)	198 (46.3%)
Engaged	9 (2.2%)	3 (0.7%)
Separated	9 (2.2%)	1 (0.2%)
Divorced	65 (16.0%)	63 (14.7%)
Widowed	25 (6.2%)	24 (5.6%)
Religion		
Christian	271 (66.9%)	262 (61.2%)
Buddhist	3 (0.7%)	11 (2.6%)
Hindu	0 (0.0%)	4 (0.9%)

Muslim	1 (0.2%)	3 (0.7%)
Jewish	4 (1.0%)	22 (5.1%)
Agnostic	17 (4.2%)	32 (7.5%)
Atheist	18 (4.4%)	24 (5.6%)
No Religious Affiliation	79 (19.5%)	49 (11.4%)
Other	12 (3.0%)	21 (4.9%)
Political Affiliation		
Democrat	134 (33.1%)	178 (41.6%)
Republican	123 (30.4%)	114 (26.6%)
Independent	136 (33.6%)	124 (29.0%)
Other Party	12 (3.0%)	12 (2.8%)
Location		
Urban	141 (34.8%)	164 (38.3%)
Suburban	151 (37.3%)	207 (48.3%)
Rural	113 (27.9%)	57 (13.3%)

Table 8

Study 4 Tightness-Looseness Correlations

	General Life Tightness	Childhood Home Tightness	Workplace Tightness
Tightness-Looseness			
General Life Tightness	-		
Childhood Home Tightness	.35***	-	
Workplace Tightness	.41***	.35***	-
Desired Tightness	.52***	.31***	.36***
Subjective Threat			
Finances and Poverty	.07*	.09*	.15***
Other	.13***	.08*	.13***
Overall Positivity			
Transgressor (purple triangle)	-.06†	-.14***	-.12**
Punisher (blue triangle)	.01	-.01	-.01
Green triangle	.16***	.16***	.15***
Pink triangle	.21***	.19***	.18***
Punisher Characteristics			
Is trustworthy	-.01	-.04	-.03
Is aggressive	.06†	.06	.06†
Takes others' interests into account	-.01	-.06	-.02
Is a bully	.09*	.05	.05
Sticks to their principles	.02	.03	.02
Is moral	-.03	-.05	-.07†
Has a lot of status	.01	-.05	-.06†
Is cruel	.11**	.02	.01
Punisher Actions			
Will cause more drawbacks than benefits to the group	.06†	.07†	.03
Will prevent future misdeeds by members of the group	.15***	.03	.10**
Were justified	.03	-.05	.03
Were necessary	.02	-.07*	-.01
Will make the group successful	.07*	-.05	-.01
Will make others less committed to the group	.07*	.01	.07*
Were protecting the group	.04	.01	.03
Were wrong	.08*	.08*	.07*
Were unacceptable	.07*	.06	.06†
Identification with Punisher			
I see the person who is the blue triangle as similar to me	.04	-.05	-.04
I would do the same thing as the person who is the blue triangle if I was in this interaction	.04	-.07†	.01
I really don't like what the person who is the blue triangle did	.06†	.03	.06†

Transgressor Harmfulness			
The action by the person who is the purple triangle is harmful	.09*	.12***	.13***
Likelihood to Punish			
I would punish the person who is the purple triangle if I was in this interaction	.10**	.03	.09**
I would forgive the person who is the purple triangle if I was in this interaction	.08*	.03	.06
Most people I know would punish the person who is the purple triangle if they were in this interaction	.12***	.13***	.14***

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

Table 9

Study 4 Two-Way ANOVA: Experimental Condition Main Effects

	df1, df2	*F*	Mean (SD)		
			Control No Punishment	Weak Punishment	Strong Punishment
Overall Positivity					
Transgressor (purple triangle)	1, 824	7.43***	2.92 (1.90)[2,3]	2.52 (1.61)	2.40 (1.59)
Punisher (blue triangle)	1, 824	187.87***	5.63 (1.22)[2,3]	4.04 (1.77)[1,3]	2.97 (1.83)[1,2]
Green triangle	1, 824	4.38*	5.69 (1.21)[3]	5.45 (1.28)	5.40 (1.40)[1]
Pink triangle	1, 824	5.61**	5.65 (1.20)[3]	5.33 (1.33)	5.36 (1.41)[1]
Punisher Characteristics					
Is trustworthy	1, 824	92.52***	5.56 (1.36)[2,3]	4.67 (1.57)[1,3]	3.84 (1.78)[1,2]
Is aggressive	1, 824	251.37***	3.12 (1.79)[2,3]	5.41 (1.54)[1,3]	6.02 (1.41)[1,2]
Takes others' interests into account	1, 824	65.42***	5.20 (1.44)[2,3]	4.36 (1.68)[1,3]	3.71 (1.82)[1,2]
Is a bully	1, 824	108.65***	2.61 (1.78)[2,3]	4.17 (1.84)[1,3]	4.88 (1.92)[1,2]
Sticks to their principles	1, 824	27.52***	5.25 (1.36)[2,3]	4.85 (1.54)[1,3]	4.41 (1.66)[1,2]
Is moral	1, 824	89.65***	5.28 (1.36)[2,3]	4.40 (1.59)[1,3]	3.59 (1.72)[1,2]
Has a lot of status	1, 824	29.29***	4.65 (1.40)[2,3]	4.20 (1.52)[1,3]	3.78 (1.63)[1,2]
Is cruel	1, 824	105.92***	2.49 (1.76)[2,3]	3.74 (1.82)[1,3]	4.68 (1.88)[1,2]
Punisher Actions					
Will cause more drawbacks than benefits to the group	1, 824	105.70***	3.20 (1.70)[2,3]	4.29 (1.66)[1,3]	5.22 (1.57)[1,2]
Will prevent future misdeeds by members of the group	1, 824	8.67***	3.79(1.59)[3]	4.29(1.53)	4.30(1.75)[1]
Were justified	1, 824	45.35***	4.77 (1.37)[3]	4.49 (1.56)[3]	3.61 (1.82)[1,2]
Were necessary	1, 824	47.84***	4.50 (1.40)[3]	4.20 (1.63)[3]	3.24 (1.84)[1,2]
Will make the group successful	1, 824	54.12***	4.58 (1.44)[2,3]	3.98 (1.61)[1,3]	3.23 (1.74)[1,2]
Will make others less committed to the group	1,824	11.01***	3.71 (1.60)[3]	3.95 (1.56)[3]	4.34 (1.74)[1,2]
Were protecting the group	1, 824	10.82***	4.33 (1.43)[3]	4.55 (1.63)[3]	3.95 (1.88)[1,2]
Were wrong	1, 824	95.88***	2.80 (1.68)[2,3]	3.94 (1.84)[1,3]	4.90 (1.88)[1,2]
Were unacceptable	1, 824	57.63***	3.12 (1.84)[2,3]	3.90 (1.82)[1,3]	4.78 (1.86)[1,2]
Identification with Punisher					
I see the person who is the blue triangle as similar to me	1, 824	88.27***	4.74 (1.56)[2,3]	3.54 (1.89)[1]	2.78 (1.86)[1]
I would do the same thing as the person who is the blue triangle if I was in this interaction	1, 824	77.85***	4.71 (1.61)[2,3]	3.64 (1.88)[1]	2.88 (1.96)[1]
I really don't like what the person who is the blue triangle did	1, 824	84.14***	2.98 (1.73)[2,3]	3.90 (1.92)[1]	4.98 (1.92)[1]

Transgressor Harmfulness					
The action by the person who is the purple triangle is harmful	1, 824	0.79	5.07 (1.85)	5.22 (1.62)	5.05 (1.75)
Likelihood to Punish					
I would punish the person who is the purple triangle if I was in this interaction	1, 824	0.64	4.19 (1.61)	4.17 (1.57)	4.05 (1.70)
I would forgive the person who is the purple triangle if I was in this interaction	1, 824	1.32	3.99 (1.64)	3.95 (1.57)	4.15 (1.52)
Most people I know would punish the person who is the purple triangle if they were in this interaction	1, 824	3.02*	4.78 (1.61)	4.68 (1.60)	4.46 (1.63)

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$
[1] Significantly different from control group, $p < .05$.
[2] Significantly different from weak punishment group, $p < .05$.
[3] Significantly different from strong punishment group, $p < .05$.

Table 10

Study 4 Two-Way ANOVA: Social Class Main Effects

	df1, df2	*F*	Mean (SD)	
			Working Class	Middle Class
Overall Positivity				
Transgressor (purple triangle)	1, 824	0.71	2.66 (1.75)	2.57 (1.68)
Punisher (blue triangle)	1, 824	0.22	4.24 (2.02)	4.18 (1.90)
Green triangle	1, 824	8.40**	5.64 (1.28)	5.39 (1.32)
Pink triangle	1, 824	8.16**	5.57 (1.36)	5.32 (1.30)
Punisher Characteristics				
Is trustworthy	1, 824	0.41	4.65 (1.82)	4.72 (1.66)
Is aggressive	1, 824	4.05*	4.76 (2.06)	5.01 (1.97)
Takes others' interests into account	1, 824	0.01	4.42 (1.82)	4.42 (1.73)
Is a bully	1, 824	3.51†	3.76 (2.14)	4.00 (2.01)
Sticks to their principles	1, 824	1.84	4.76 (1.68)	4.90 (1.44)
Is moral	1, 824	0.27	4.40 (1.79)	4.45 (1.64)
Has a lot of status	1, 824	0.17	4.19 (1.67)	4.23 (1.46)
Is cruel	1, 824	2.91†	3.53 (2.09)	3.74 (1.98)
Punisher Actions				
Will cause more drawbacks than benefits to the group	1, 824	0.29	4.21 (1.93)	4.27 (1.76)
Will prevent future misdeeds by members of the group	1, 824	1.14	4.19 (1.69)	4.07 (1.61)
Were justified	1, 824	2.28	4.21 (1.72)	4.37 (1.63)
Were necessary	1, 824	0.69	3.93 (1.78)	4.03 (1.68)
Will make the group successful	1, 824	0.71	3.98 (1.77)	3.89 (1.63)
Will make others less committed to the group	1, 824	1.11	4.06 (1.74)	3.94 (1.58)
Were protecting the group	1, 824	0.81	4.23 (1.72)	4.33 (1.64)
Were wrong	1, 824	0.81	3.94 (2.06)	3.83 (1.94)
Were unacceptable	1, 824	1.54	4.02 (2.03)	3.86 (1.90)
Identification with Punisher				
I see the person who is the blue triangle as similar to me	1, 824	1.01	3.75 (1.99)	3.63 (1.92)
I would do the same thing as the person who is the blue triangle if I was in this interaction	1, 824	0.47	3.70 (2.02)	3.79 (1.94)
I really don't like what the person who is the blue triangle did	1, 824	2.36	4.05 (2.05)	3.86 (2.02)
Transgressor Harmfulness				
The action by the person who is the purple triangle is harmful	1, 824	8.67**	4.92 (1.83)	5.30 (1.64)
Likelihood to Punish				
I would punish the person who is the purple triangle if I was in this interaction	1, 824	2.64	4.05 (1.70)	4.23 (1.56)

I would forgive the person who is the purple triangle if I was in this interaction	1, 824	6.54**	4.17 (1.62)	3.90 (1.52)
Most people I know would punish the person who is the purple triangle if they were in this interaction	1, 824	0.42	4.66 (1.68)	4.62 (1.56)

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

Table 11

Study 4 Two-Way ANOVA: Experimental Condition and Social Class Interactions

	df1, df2	*F*	Mean (SD)					
			Control No Punishment		Weak Punishment		Strong Punishment	
			WC[a]	MC[b]	WC[a]	MC[b]	WC[a]	MC[b]
Overall Positivity								
Transgressor (purple triangle)	2, 824	0.18	3.02 (1.94)	2.83 (1.87)	2.54 (1.56)	2.50 (1.65)	2.43 (1.70)	2.37 (1.49)
Punisher (blue triangle)	2, 824	0.01	5.66 (1.25)	5.59 (1.20)	4.07 (1.82)	4.01 (1.73)	2.99 (1.95)	2.95 (1.73)
Green triangle	2, 824	2.58†	5.69 (1.25)	5.68 (1.17)	5.58 (1.28)	5.33 (1.28)	5.64 (1.30)	5.17 (1.46)
Pink triangle	2, 824	1.22	5.70 (1.28)	5.61 (1.21)	5.54 (1.33)	5.12 (1.31)	5.47 (1.47)	5.24 (1.34)
Punisher Characteristics								
Is trustworthy	2, 824	0.93	5.57 (1.40)	5.61 (1.33)	4.73 (1.64)	4.64 (1.51)	3.66 (1.87)	3.93 (1.70)
Is aggressive	2, 824	0.04	3.06 (1.77)	3.23 (1.82)	5.29 (1.65)	5.54 (1.41)	5.88 (1.56)	6.11 (1.25)
Takes others' interests into account	2, 824	0.46	5.29 (1.45)	5.19 (1.44)	4.39 (1.62)	4.35 (1.75)	3.58 (1.95)	3.73 (1.70)
Is a bully	2, 824	0.10	2.51 (1.82)	2.73 (1.73)	4.07 (1.90)	4.25 (1.78)	4.72 (2.05)	5.03 (1.78)
Sticks to their principles	2, 824	5.09**	5.35 (1.45)	5.21 (1.27)	4.89 (1.51)	4.85 (1.56)	4.05[6] (1.80)	4.65[5] (1.45)
Is moral	2, 824	0.56	5.26 (1.48)	5.36 (1.25)	4.47 (1.63)	4.37 (1.55)	3.47 (1.80)	3.63 (1.65)
Has a lot of status	2, 824	5.52**	4.81 (1.46)	4.58 (1.35)	4.28 (1.60)	4.12 (1.44)	3.47[6] (1.69)	3.99[5] (1.54)
Is cruel	2, 824	1.11	2.24 (1.68)	2.72 (1.81)	3.67 (1.79)	3.76 (1.86)	4.66 (2.03)	4.74 (1.75)
Punisher Actions								
Will cause more drawbacks than benefits to the group	2, 824	0.69	3.07 (1.75)	3.32 (1.65)	4.29 (1.75)	4.29 (1.58)	5.25 (1.63)	5.19 (1.52)
Will prevent future misdeeds by members of the group	2, 824	0.29	3.84 (1.57)	3.74 (1.61)	4.30 (1.57)	4.27 (1.50)	4.41 (1.85)	4.18 (1.66)
Were justified	2, 824	1.74	4.86 (1.45)	4.74 (1.30)	4.36 (1.54)	4.64 (1.57)	3.41 (1.84)	3.75 (1.80)
Were necessary	2, 824	2.13	4.63 (1.43)	4.41 (1.38)	4.02 (1.65)	4.37 (1.60)	3.15 (1.91)	3.31 (1.79)
Will make the group successful	2, 824	0.67	4.74 (1.42)	4.47 (1.45)	3.98 (1.65)	3.97 (1.57)	3.21 (1.86)	3.22 (1.64)
Will make others less committed to the group	2, 824	0.54	3.69 (1.69)	3.72 (1.53)	4.01 (1.62)	3.88 (1.50)	4.48 (1.81)	4.22 (1.67)
Were protecting the group	2, 824	2.14	4.47 (1.44)	4.25 (1.42)	4.37 (1.63)	4.73 (1.62)	3.84 (1.98)	4.00 (1.78)

Were wrong	2, 824	0.50	2.78 (1.81)	2.81 (1.55)	4.08 (1.81)	3.80 (1.86)	4.95 (1.95)	4.86 (1.83)
Were unacceptable	2, 824	0.06	3.22 (1.98)	3.04 (1.69)	3.94 (1.83)	3.85 (1.81)	4.89 (1.91)	4.69 (1.81)
Identification with Punisher								
I see the person who is the blue triangle as similar to me	2, 824	0.61	4.73 (1.65)	4.77 (1.48)	3.60 (1.89)	3.48 (1.90)	2.92 (2.00)	2.63 (1.73)
I would do the same thing as the person who is the blue triangle if I was in this interaction	2, 824	0.29	4.62 (1.68)	4.82 (1.54)	3.59 (1.90)	3.69 (1.87)	2.89 (2.07)	2.85 (1.87)
I really don't like what the person who is the blue triangle did	2, 824	0.22	3.03 (1.80)	2.93 (1.67)	3.98 (1.83)	3.80 (1.99)	5.15 (1.93)	4.85 (1.90)
Transgressor Harmfulness								
The action by the person who is the purple triangle is harmful	2, 824	0.62	4.98 (1.87)	5.15 (1.82)	5.02 (1.70)	5.41 (1.50)	4.81 (1.91)	5.29 (1.57)
Likelihood to Punish								
I would punish the person who is the purple triangle if I was in this interaction	2, 824	0.49	4.16 (1.58)	4.22 (1.64)	4.10 (1.68)	4.25 (1.46)	3.89 (1.82)	4.21 (1.58)
I would forgive the person who is the purple triangle if I was in this interaction	2, 824	2.51†	4.27 (1.61)	3.72 (1.63)	3.92 (1.62)	3.97 (1.53)	4.31 (1.62)	3.99 (1.41)
Most people I know would punish the person who is the purple triangle if they were in this interaction	2, 824	0.14	4.84 (1.53)	4.73 (1.69)	4.71 (1.74)	4.65 (1.45)	4.44 (1.74)	4.48 (1.53)

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$
[a] WC = Working Class
[b] MC = Middle Class
[1] Significantly different from working class control group, $p < .05$.
[2] Significantly different from middle class control group, $p < .05$.
[3] Significantly different from working class weak punishment group, $p < .05$.
[4] Significantly different from middle class weak punishment group, $p < .05$.
[5] Significantly different from working class strong punishment group, $p < .05$
[6] Significantly different from middle class strong punishment group, $p < .05$

Table 12

Study 5 Demographics

	Working Class (N = 155)	Middle Class (N = 156)
Age		
Mean (SD)	56.59 (15.14)	50.13 (14.78)
Range	18 - 82	24 - 80
Gender		
Male	110 (71.0%)	46 (29.5%)
Female	45 (29.0%)	110 (70.5%)
Other	0 (0.0%)	0 (0.0%)
Race		
American Indian/Alaskan Native	2 (1.3%)	1 (0.6%)
Asian	2 (1.3%)	15 (9.6%)
Black	10 (6.5%)	8 (5.1%)
White	139 (89.7%)	128 (82.1%)
Other	2 (1.3%)	4 (2.6%)
Ethnicity		
Hispanic	9 (5.8%)	5 (3.2%)
Non-Hispanic	146 (94.2%)	151 (96.8%)
Education		
No schooling or less than 1 year	0 (0.0%)	0 (0.0%)
Elementary or middle School	1 (0.6%)	0 (0.0%)
High school, no degree	10 (6.5%)	0 (0.0%)
High school graduate	144 (92.9%)	0 (0.0%)
Bachelor's degree	0 (0.0%)	97 (62.2%)
Master's degree	0 (0.0%)	48 (30.8%)
Professional degree (e.g., MD, JD)	0 (0.0%)	3 (1.9%)
Doctoral degree	0 (0.0%)	8 (5.1%)
Household Annual Income		
Less than $10,000	4 (2.6%)	1 (0.6%)
$11,000 to $20,000	16 (10.3%)	5 (3.2%)
$21,000 to $30,000	26 (16.8%)	5 (3.2%)
$31,000 to $40,000	33 (21.3%)	14 (9.0%)
$41,000 to $50,000	22 (14.2%)	10 (6.4%)
$51,000 to $60,000	20 (12.9%)	13 (8.3%)
$61,000 to $70,000	15 (9.7%)	16 (10.3%)
$71,000 or more	19 (12.3%)	92 (59.0%)
Marital Status		
Single	6 (3.9%)	6 (3.8%)
Married	143 (92.3%)	141 (90.4%)
Engaged	3 (1.9%)	5 (3.2%)
Separated	0 (0.0%)	1 (0.6%)
Divorced	1 (0.6%)	3 (1.9%)
Widowed	2 (1.3%)	0 (0.0%)
Religion		
Christian	125 (80.6%)	103 (66.0%)
Buddhist	1 (0.6%)	2 (1.3%)
Hindu	0 (0.0%)	4 (2.6%)

Muslim	0 (0.0%)	2 (1.3%)
Jewish	1 (0.6%)	8 (5.1%)
Sikh	0 (0.0%)	1 (0.6%)
Agnostic	2 (1.3%)	8 (5.1%)
Atheist	5 (3.2%)	12 (7.7%)
No Religious Affiliation	12 (7.7%)	13 (8.3%)
Other	9 (5.8%)	3 (1.9%)
Political Affiliation		
Democrat	46 (29.7%)	62 (39.7%)
Republican	57 (36.8%)	52 (33.3%)
Independent	52 (33.5%)	39 (25.0%)
Other Party	0 (0.0%)	3 (1.9%)
Location		
Urban	34 (21.9%)	49 (31.4%)
Suburban	63 (40.7%)	89 (57.1%)
Rural	58 (37.4%)	18 (11.5%)

Table 13

Study 5 Tightness-Looseness Correlations

	General Life Tightness	Childhood Home Tightness	Workplace Tightness
Tightness-Looseness			
General Life Tightness	-		
Childhood Home Tightness	.38***	-	
Workplace Tightness	.39***	.34***	-
Desired Tightness	.43***	.37***	.31***
Subjective Threat			
Finances and Poverty	.09	-.02	.05
Other	.10†	.06	.08
Explicit Bias			
No deviant features (control)	.23***	.19**	.21***
Uncontrollable deviant features	-.12*	-.06	-.04
Controllable deviant features	-.04	-.04	-.03

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

Table 14

Study 6 Demographics

	Working Class (N = 58)	Middle Class (N = 70)
Age		
Mean (SD)	18.28 (1.75)	18.10 (0.30)
Range	17 - 31	18 - 19
Gender		
Male	16 (27.6%)	28 (40.0%)
Female	42 (72.4%)	42 (60.0%)
Other	0 (0.0%)	0 (0.0%)
Race		
American Indian/Alaskan Native	1 (1.8%)	2 (2.9%)
Asian	17 (29.8%)	13 (18.6%)
Black	13 (22.8%)	4 (5.7%)
Native Hawaiian/Pacific Islander	1 (1.8%)	0 (0.0%)
White	19 (33.3%)	49 (70.0%)
Other	6 (10.5%)	2 (2.9%)
Ethnicity		
Hispanic	11 (19.0%)	3 (4.3%)
Non-Hispanic	47 (81.0%)	66 (95.7%)
Education (first parent)		
Less than a high school degree	7 (12.1%)	0 (0.0%)
High school graduate	25 (43.1%)	0 (0.0%)
Some college, no degree	13 (22.4%)	0 (0.0%)
Associate's degree	13 (22.4%)	0 (0.0%)
Bachelor's degree	0 (0.0%)	24 (34.3%)
Master's degree	0 (0.0%)	27 (38.6%)
Professional degree (e.g., MD, JD)	0 (0.0%)	7 (10.0%)
Doctoral degree	0 (0.0%)	12 (17.1%)
Education (second parent)		
Not applicable	5 (8.6%)	0 (0.0%)
Less than a high school degree	5 (8.6%)	0 (0.0%)
High school graduate	28 (48.3%)	0 (0.0%)
Some college, no degree	13 (22.4%)	1 (1.4%)
Associate's degree	7 (12.1%)	0 (0.0%)
Bachelor's degree	0 (0.0%)	44 (62.9%)
Master's degree	0 (0.0%)	13 (18.6%)
Professional degree (e.g., MD, JD)	0 (0.0%)	7 (10.0%)
Doctoral degree	0 (0.0%)	5 (7.1%)
Parent's Annual Income		
Less than $10,000	2 (3.4%)	1 (0.6%)
$10,000 - $19,000	1 (1.7%)	1 (1.4%)
$20,000 - $29,000	5 (8.6%)	0 (0.0%)
$30,000 - $39,000	5 (8.6%)	2 (2.9%)
$40,000 to $49,000	4 (6.9%)	1 (1.4%)
$50,000 to $59,000	12 (20.7%)	2 (2.9%)

$60,000 to $69,000	8 (13.8%)	1 (1.4%)
$70,000 or more	11 (19.0%)	50 (71.4%)
Don't know	10 (17.2%)	13 (18.6%)
Religion		
Christian	35 (60.4%)	35 (50.0%)
Buddhist	2 (3.4%)	2 (2.9%)
Hindu	1 (1.7%)	3 (4.3%)
Muslim	5 (8.6%)	1 (1.4%)
Jewish	1 (1.7%)	9 (12.9%)
Sikh	1 (1.7%)	1 (1.4%)
Agnostic	9 (15.5%)	7 (10.0%)
Atheist	5 (8.6%)	13 (18.9%)
No Religious Affiliation	1 (1.7%)	1 (1.4%)
Other	0 (0.0%)	1 (1.4%)
Location		
Urban	10 (17.3%)	7 (10.0%)
Suburban	43 (74.1%)	59 (84.3%)
Rural	5 (8.6%)	4 (5.7%)

Table 15

Study 6 Tightness-Looseness Correlations

	Life Tightness Before UMD	Childhood Home Tightness	Childhood School Tightness
Tightness-Looseness			
Life Tightness Before UMD	-		
Childhood Home Tightness	.75***	-	
Childhood School Tightness	.49***	.25**	-
Desired Tightness			
Time 1	.23**	.33***	.31†
Time 2	.20*	.21*	-.04
Preference for Simplicity	-.16†	.10	.24**

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

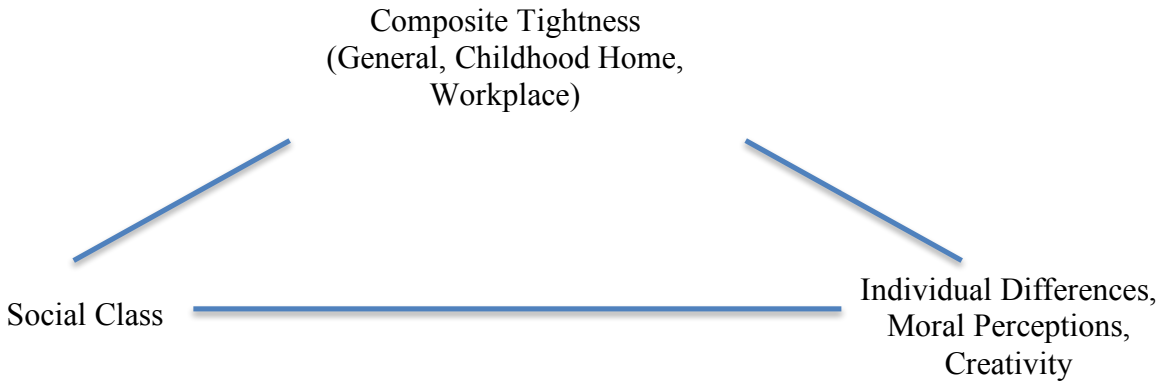


Figure 1. Mediation model for Study 1.

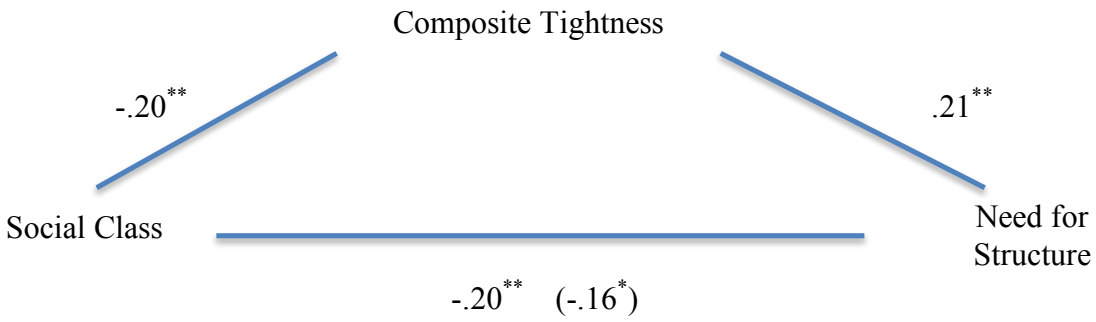


Figure 2. Mediation model between social class and need for structure.

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

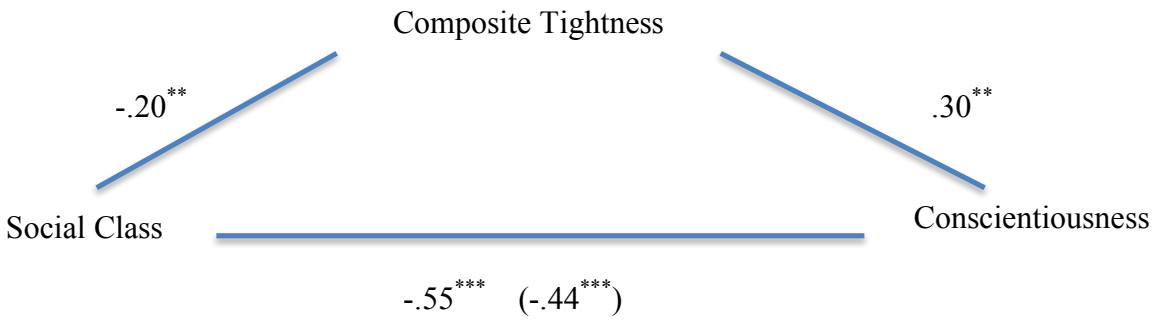


Figure 3. Mediation model between social class and conscientiousness.

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

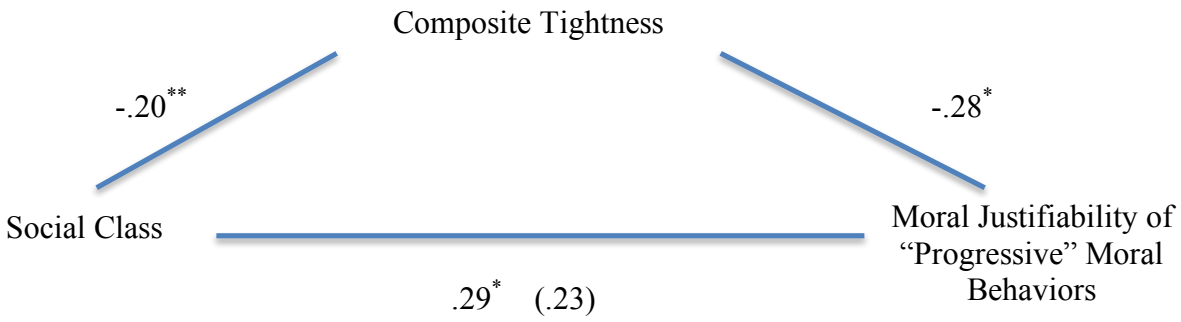


Figure 4. Mediation model between social class and the moral justifiability of "progressive" behaviors.

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

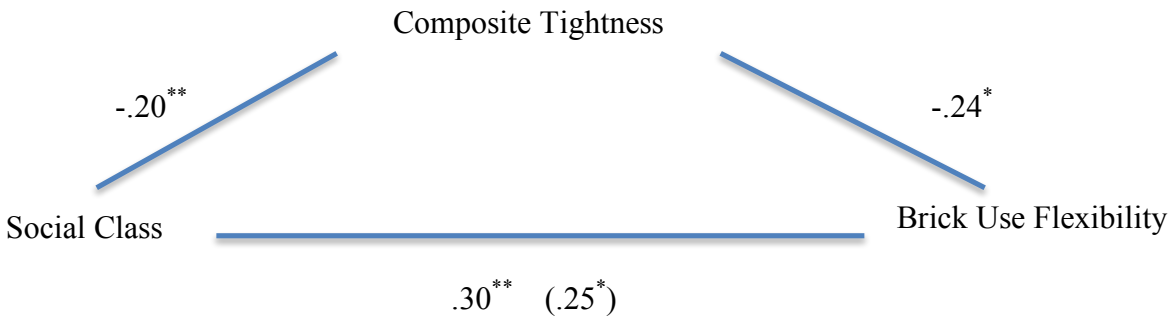


Figure 5. Mediation model between social class and brick use flexibility.

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

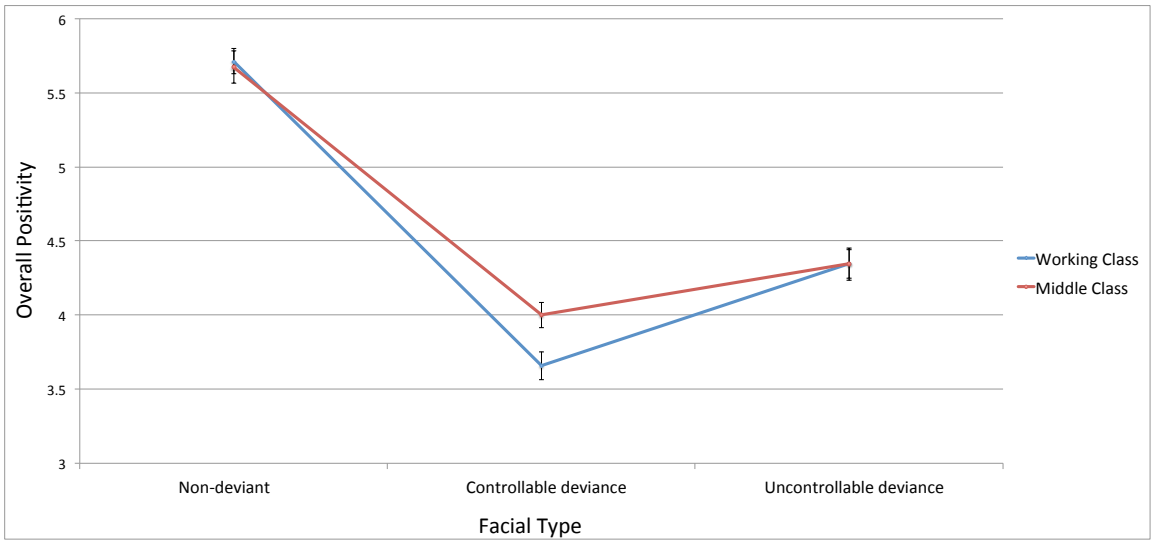


Figure 6. Social class differences in explicit bias toward controllable deviance.

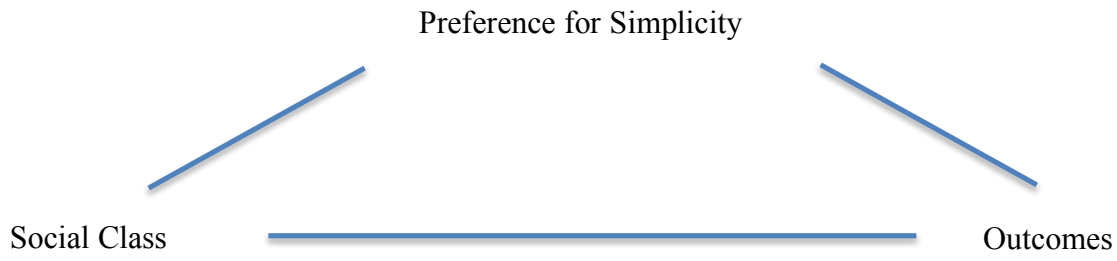


Figure 7. Mediation model for Study 6.

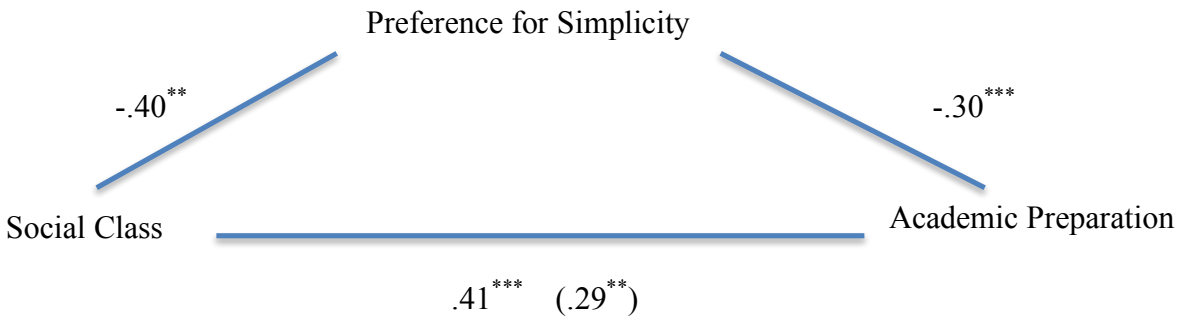


Figure 8. Mediation model between social class and academic preparation.

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

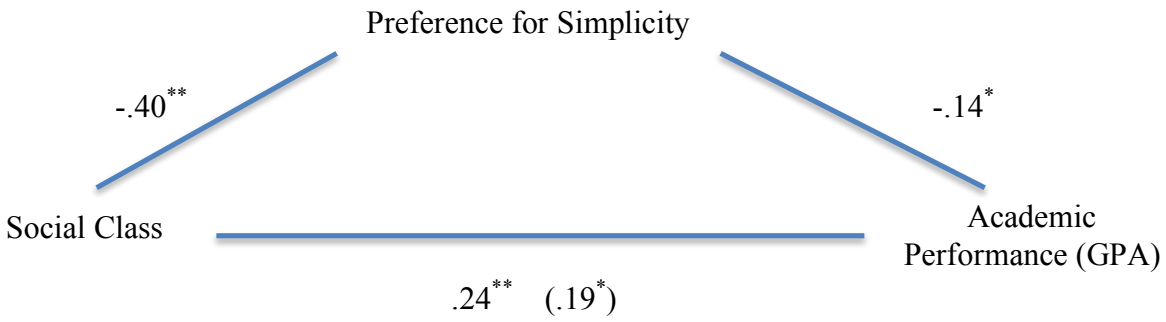


Figure 9. Mediation model between social class and academic performance (GPA).

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

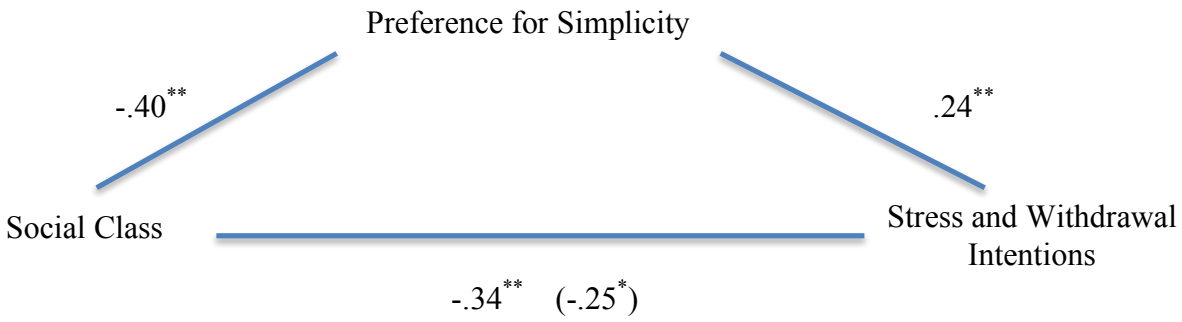


Figure 10. Mediation model between social class and stress and withdrawal intentions.

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

Appendix A
Tightness-Looseness Scales

General Tightness-Looseness Scale

The following statements refer to your life as a whole. Please indicate whether you agree or disagree with the following statements using the following scale.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

1) There are many rules that I am supposed to follow in my life.
2) In my life, there are very clear expectations for how I should act in most situations.
3) It is clear what behaviors are appropriate versus inappropriate in my life.
4) In my life, I have a great deal of freedom in deciding how I want to behave in most situations. (reverse-scored)
5) In my life, if I act in an inappropriate way, others will strongly disapprove.
6) In my life, I almost always follow the rules.
7) In my life, people closely monitor what I do.
8) In my life, there are strong punishments if I don't follow the rules.
9) My life is very structured. I know what I should and should not be doing.
10) In my life, there is a right way and a wrong way to do things.
11) In my life, there is a rule or a proper procedure for most things.
12) I often have a choice in deciding what I want to do in my life. (reverse-scored)
13) I often have a choice in deciding when I want to do something in my life. (reverse-scored)

Childhood Home-Life Tightness-Looseness Scale

The following statements refer to your childhood home-life. Please note that "childhood" indicates the time when you lived with your parent(s) or guardian(s), typically from birth through approximately age 18. Please indicate whether you agree or disagree with the following statements using the following scale.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

1) There are many rules that I was supposed to follow in my childhood home.
2) In my childhood home, there were very clear expectations for how I should act in most situations.
3) It was clear what behaviors were appropriate versus inappropriate in my childhood home.
4) In my childhood home, I had a great deal of freedom in deciding how I wanted to behave in most situations. (reverse-scored)

5) In my childhood home, if I acted in an inappropriate way, my parents or guardians would
strongly disapprove.
6) In my childhood home, I almost always followed my parents' or guardians' rules.
7) In my childhood home, people closely monitored what I did.
8) In my childhood home, there were strong punishments if I didn't follow the rules.
9) My childhood home was very structured. I knew what I should and should not be doing.
10) In my childhood home, there was a right way and a wrong way to do things.
11) In my childhood home, there was a rule or a proper procedure for most things.
12) I often had a choice in deciding what I wanted to do (e.g., chores vs. watching TV) in my
child home. (reverse-scored)
13) I often had a choice in deciding when I wanted to do something (e.g., chores vs. watching
TV) in my childhood home. (reverse-scored)

School Tightness-Looseness Scale

The following statements refer to your childhood experiences at school. Please note that this indicates elementary, middle, AND high school. Please indicate whether you agree or disagree with the following statements using the following scale.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

1) There are many rules that I was supposed to follow in school.
2) In school, there were very clear expectations for how I should act in most situations.
3) It was clear what behaviors were appropriate versus inappropriate in school.
4) In school, I had a great deal of freedom in deciding how I wanted to behave in most situations. (reverse-scored)
5) In school, if I acted in an inappropriate way, others would strongly disapprove.
6) In school, I almost always followed the rules.
7) In school, people closely monitored what I did.
8) In school, there were strong punishments if I didn't follow the rules.
9) School was very structured. I knew what I should and should not be doing.
10) In school, there was a right way and a wrong way to do things.
11) In school, there was a rule or a proper procedure for most things.
12) I often had a choice in deciding what I wanted to do (e.g., work for one course vs. work for another course) in school. (reverse-scored)
13) I often had a choice in deciding when I wanted to do something (e.g., work for one course vs. work for another course) in school. (reverse-scored)

Workplace Tightness-Looseness Scale

The following statements refer to your experiences at your current place of employment. If you are currently unemployed, please refer to your most recent place of employment.

Please indicate whether you agree or disagree with the following statements using the following scale.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

1) There are many rules that I am supposed to follow at my workplace.
2) At my workplace, there are very clear expectations for how I should act in most situations.
3) It is clear what behaviors are appropriate versus inappropriate at my workplace.
4) At my workplace, I have a great deal of freedom in deciding how I want to behave in most situations. (reverse-scored)
5) At my workplace, if I act in an inappropriate way, others will strongly disapprove.
6) At my workplace, I almost always follow the rules.
7) At my workplace, people closely monitor what I do.
8) At my workplace, there are strong punishments if I don't follow the rules.
9) My workplace is very structured. I know what I should and should not be doing.
10) At my workplace, there is a right way and a wrong way to do things.
11) At my workplace, there is a rule or a proper procedure for most things.
12) I often have a choice in deciding what I want to do (e.g., one work task vs. another work task) at my workplace. (reverse-scored)
13) I often have a choice in deciding when I want to do something (e.g., one work task vs. another work task) at my workplace. (reverse-scored)

Appendix B
Thematic Codes

VALENCE (All words should have a valence code)

1) Positive – words that have a positive implication given the prompt
2) Negative – words that have a negative implication given the prompt
3) Neutral – words that have a neutral (no positive or negative implication) given the prompt

THEMES (Not all words will have a thematic code – each word should only have ONE thematic code, choose the one that you think best fits)

1) Authorities (e.g., mom, police, teachers, RA) - Definition: words about figures that are in positions of authority or power

2) Institutions (e.g., prison, school, court, church) – Definition: words about institutions that create and enforce rules

3) Behavioral Codes (e.g., bible, commandment, laws) – Definition: words about particular codes that proscribe specific actions or behaviors that a person should or shouldn't do.

4) Benefits and Importance (e.g., structure, order, necessary, protection) – Definition: words about the benefits, valued qualities, or positive importance associated with the word or phrase in question

5) Drawbacks and Limitations (e.g., oppression, tyranny, no freedom) – Definition: words about the negatives, drawbacks, or limitations associated with the word or phrase in question

6) Positive Affect (e.g., happy) – Definition: words that indicate a positive emotion

7) Negative Affect (e.g., stressed) – Definition: words that indicate a negative emotion

8) Punishment (e.g., punishment, consequences) – Definition: words that indicate punishment or negative outcomes

9) Constraint (e.g., tight, restriction, strict) – Definition: words that indicate restrictiveness
(note: this category differs from **drawbacks and limitations** in that drawbacks/limitations have an inherent negative social/societal outcome, e.g., tyranny is always seen as bad, whereas constraint words simply indicate restriction without the negative societal connotation attached; so something like slavery is a drawback/limitation word, while stringent is a constraint word)

10) Leeway (e.g., loophole, freedom, liberty) – Definition: words that indicative non-restrictiveness

11) Following (e.g., obey, follower) – Definition: words that indicate behaviors or people that follow rules

12) Breaking (e.g., violate, criminals) – Definition: words that indicate behaviors or people that break the rules

13) Pejoratives (e.g., sheep, goody-two-shoes, dumb) – Definition: words that express contempt or disapproval for someone or something

14) Objects (e.g., drugs, alcohol, money) – Definition: words that refer to particular concrete objects

15) Influence of Peers (e.g. peer pressure) – Definition: words that describe the influence on behavior of friends or peers.

Appendix C
Norm and Moral Violation Scales

Perceived Severity of Conventional Norm Violations *(World Values Survey)*
Please indicate whether you think the behaviors below are social norm violations. If yes, please indicate how severe of a violation you think they are.

(1) Not a violation	(2) Slight violation	(3) Moderate violation	(4) Serious Violation	(5) Extreme violation

1) A person litters in public places.
2) A person delays a public bus because he becomes sick from consuming too much alcohol.
3) Two drivers start a fight on a busy intersection and cause a traffic jam.
4) A person makes loud noise and disrupts their neighbors at 3 AM.
5) A person talks on a cell phone in a movie theater.
6) A person does not flush toilets.
7) A person walks on grass where there are paved walkways.
8) A person is being disruptive in class.

Perceived Severity of Moral Norm Violations *(World Values Survey)*
Please indicate how justifiable you find each of the following by using the scale below.

(1) Never Justifiable	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)** Always Justifiable

1) Homosexuality
2) Prostitution
3) Abortion
4) Divorce
5) Euthanasia (ending of life for the incurably sick)
6) Suicide
7) Drinking Alcohol
8) Taking drugs like marijuana or hashish
9) Lying in your own interest
10) Married men or women having an affair
11) Having casual sex
12) Claiming government benefits to which you are not entitled
13) Avoiding paying fare on public transport
14) Cheating on taxes if you have a chance
15) Someone accepting a bribe in the course of their duties

Appendix D
Subjective Threat Scale

When you were growing up, how concerned were you that the following things might negatively affect you or your immediate family? (*1 = not at all concerned*, *7 = very concerned*)

1) Job loss
2) Lack of job opportunity
3) Poverty/lack of income
4) Worry about paying rent or mortgage
5) Loss of housing/eviction
6) Food deprivation due to income
7) Debt
8) Lack of medical care
9) Natural disasters (e.g., hurricanes, earthquakes)
10) Climate change
11) Pollution
12) Traffic accident
13) Workplace accident
14) Violent crime
15) Gun violence
16) Burglary
17) Mugging
18) False conviction
19) Legal injustice
20) Corruption
21) Discrimination
22) Economic recession
23) Illness or disease
24) Mental illness
25) Drug addiction/substance abuse
26) Overcrowding
27) Terrorism
28) Immigration
29) War

Appendix E
Study 4 Video Materials

No Sanction (Control) Condition:
https://www.youtube.com/watch?v=GdEqT08uKwI&feature=youtu.be

Weak Punishment Condition:
https://www.youtube.com/watch?v=xZebtSuSENk&feature=youtu.be

Strong Punishment Condition:
https://www.youtube.com/watch?v=a5iQ3e1eLXs&feature=youtu.be

Appendix F
12-Item Tightness Belief Scale

Please indicate how much you agree with the following statements using the scale below.

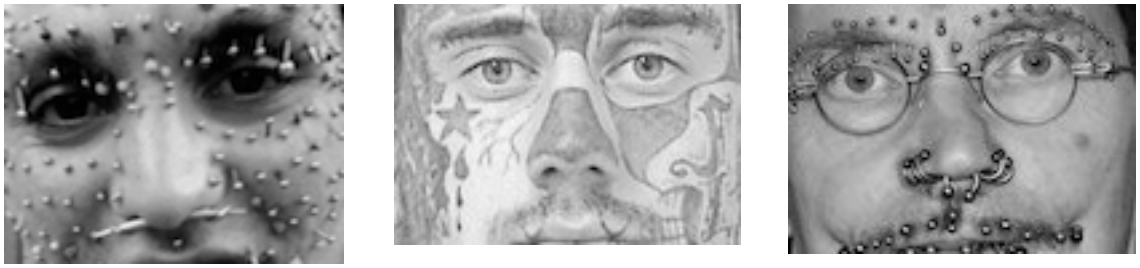
1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

1) A society should make a clear distinction between what's right and what's wrong.
2) People should always follow the rules.
3) A society should have strong punishments for rule breakers.
4) People should be punished if they don't follow the rules.
5) Bad behavior should be corrected through punishment.
6) Life should be structured so that people always know what they should and should not be doing.
7) People should be monitored to ensure that they behave properly.
8) A society should have strong rules.
9) Violating rules should never be permitted.
10) Life should consist of clear expectations about how to behave in most situations.
11) People should make sure that they always behave properly.
12) Rule breakers should be punished harshly, or they will break the rules again.

Appendix G
Study 5 Materials

Non-Deviant Faces

Controllable Deviant Faces



Uncontrollable Deviant Faces

Appendix H
Study 6 Mental Health Checklist

Please select any of the below if you have experienced them to any significant degree since you came to UMD.

- [ ] Anxiety
- [ ] Depression
- [ ] Confusion or spaciness
- [ ] Irrational fears
- [ ] Compulsive behaviors
- [ ] Forgetfulness
- [ ] Feeling overloaded or overwhelmed
- [ ] Hyperactivity - feeling like you can't slow down
- [ ] Mood swings
- [ ] Loneliness
- [ ] Problems with relationships
- [ ] Dissatisfied/unhappy
- [ ] Difficulty concentrating
- [ ] Frequent irritability
- [ ] Restlessness
- [ ] Frequent boredom
- [ ] Frequent worrying or obsessing
- [ ] Frequent guilt
- [ ] Temper flare-ups
- [ ] Crying spells
- [ ] Nightmares
- [ ] Apathy
- [ ] Sexual problems
- [ ] Weight change
- [ ] Overeating

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