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By

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Abstract

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Research has established a strong link between parental social class and individuals' social class later in life, but less is known about the perceptual processes that govern workplace behaviors and "gatekeeping" interactions (such as interviews) which might advance one's social class. I propose that people from a lower social class background (e.g., lower household income growing up, less parental education, lower subjective social class) display fewer agentic nonverbal cues in work contexts, thus observers see them as less agentic, and are less willing to hire and promote them. I conducted a field survey (Study 1) which asked mid-career professionals, as well as a minimum of two colleagues, to report on their career advancement and workplace behaviors (*n* professionals = 215, *n* raters = 547). A pattern emerged such that professionals from a lower social class background earn less, and also see themselves as behaving less agentically in the workplace. Moreover, self-reported agentic work behaviors fully mediated the relationship between household income growing up and current household income. I then conducted a study of mock job interviews in which undergraduates were videotaped conducting a case interview (*n* interviewees = 150). Independent judges were invited to make attributions of those interviewees' underlying traits (*n* ratings = 1,505, or 10 raters per video), and professional hiring managers were asked to rate their worthiness of career advancement (*n* ratings = 450, or 3 hiring managers rating each video). I found that students from a lower social class background were seen as less agentic, and thus as less worthy of hire and promotion, than their counterparts from a higher social class background. This can be explained by their reduced display of agentic nonverbal cues such as expanded posture and a confident and factual vocal tone. These findings contribute to the emergent literature on the psychology of social class, particularly highlighting the relationship between social class background, perceptual processes, and career advancement, and ultimately helping to explain the persistence of inequality in intergenerational social mobility.

Keywords: social class, social class background, career advancement, nonverbal behaviors, diversity

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Chapter 1: Introduction

Fair and unbiased systems of hiring, promotion, and reward are critical for a host of organizational outcomes. These systems can enhance an organization's performance by fully leveraging the talent pool (Bertrand & Mullainathan, 2004; Oreopoulos, 2011; Gaddis, 2015), and motivating employees through equitable pay schemes (Leete, 2000) and opportunities for advancement (Wright & Bonett, 1992; Lemons & Jones, 2001). Maintaining diversity among employees also helps organizations exploit market opportunities that could only be identified by employees from diverse backgrounds (Ely & Thomas, 2001), and helps preserve consistency with stated company values (Cox & Blake, 1991; Lencioni, 2002). Given these long-studied organizational outcomes like employee motivation and innovation, as well as what many would argue to be the ethical and moral obligation of organizations to hire, promote, and reward individuals fairly regardless of demographic characteristics, a great deal of empirical attention in the management literature has been paid to employment discrimination against women and underrepresented racial groups, and how to create fair and unbiased systems for them to advance (Morrison & von Glinow, 1990; Cox, 1994; Kalev, Dobbin & Kelly, 2006; Eagly & Carli, 2007).

Much less attention, however, has been given to discrimination against another large demographic group: those who come from a lower-class background (cf. Côté, 2011; Fiske & Markus, 2012; Rivera, 2016). Social class, like gender, race, and sexual orientation, is a primary dimension of social categorization and a fundamental status characteristic (Anderson, Berger, Cohen & Zelditch 1966; Rivera, 2016). Prior research across social-scientific disciplines has shown that social class affects outcomes ranging

from individual health and well-being (Chen, 2004; Gallo & Matthews, 2003; Krieger, Williams & Moss, 1997; Pappas, Queen, Hadden & Fisher, 1993) to the emergent dynamics of face-to-face social interaction (Kraus & Keltner, 2009) to political movements and collective action (Roy, 1984). Moreover, the effects of individuals' social class while they are growing up affects their outcomes throughout the lifespan: longitudinal research shows that childhood social class leaves a "biological residue" with powerful implications for adult health outcomes (e.g., coronary heart disease, lung cancer, respiratory diseases) that are independent of adult social class (Bosma, van de Mheen & Mackenbach, 1999; Galobardes, Lynch & Davey Smith, 2004; Miller, Chen, Fok, Walker, Lim, Nicholls, Cole & Kobor, 2009).

Some research outside the organizational literature also suggests that discrimination within organizations against individuals lower in social class is likely. Lower-class individuals are generally perceived as less competent and intelligent (Cooper, Baron & Lowe, 1975; Darley & Gross, 1983; Fiske, Cuddy, Glick & Xu, 2002) and social class background is detectable by observers (Kraus & Keltner, 2009; Kraus, Piff, Mendoza-Denton, Rheinschmidt & Keltner, 2012). Yet the organizational literature has paid scant attention to social class as a source of bias in employment processes (c.f., Bapuji, 2015; Côté, 2011; Gray & Kish-Gephart, 2013). A few studies have suggested that labor market discrimination may occur on the basis of class at the hiring stage (Rivera, 2012; Rivera & Tilcsik, 2016) and in promotions (Pfeffer, 1977), and these studies are important first steps because they suggest that discrimination against those lower in social class occurs. Rivera and Tilcsik (2016) and Rivera (2012) both emphasize the importance of perceived fit with elite culture and clientele as a mechanism for labor

market discrimination, while Pfeffer (1977) explains career advancement inequality through firms' reliance on ambiguous performance metrics in white-collar jobs, as well as their employees' connections to elite networks. However, much more research is needed to fully elucidate whether, how, and why social class discrimination emerges, distinct from discrimination based on other attributes. Indeed, many scholars have called for more inquiry into how social class drives employment practices such as hiring, promotion, and salary increases (Côté, 2011; Fiske & Markus, 2012; Rivera, 2016).

In the present research, I aim to address this gap – to examine the kinds of obstacles people from lower-class backgrounds face as they strive to advance in their careers and lift themselves out of their disadvantaged upbringing. More specifically, I examine the erroneous attributions and perceptual biases that emerge in longitudinal and dyadic interactions with individuals from a lower-class background, ultimately limiting their career advancement through cumulative discrimination. These novel research aims connect micro-level interactions to individual career advancement outcomes (e.g., hiring, promotion; Judge, Higgins, Thoresen & Barrick, 1999; Seibert, Kraimer & Linden, 2001) and macro-level phenomena (i.e., perpetuation of inequality) with important consequences for organizational performance (e.g., employee motivation; Leete, 2000; Wright & Bonett, 1992; Lemons & Jones, 2001). In doing so, I advance our theoretical understanding of perceptual biases against those lower in social class background, the attributional mechanisms by which this bias is perpetuated, and ways that these biases may emerge in interpersonal communication. Within the study of social class effects, as distinct from race or gender effects, I propose that biased interpersonal interactions with career gatekeepers including hiring managers, supervisors, and peers (Ridgeway & Fisk,

2012) accumulate over many years to shape career advancement outcomes, ultimately diminishing the prospects of individuals from a lower social class background.

The study of social class is ripe for theoretical advancement because of growing income inequality and declining social mobility in the workforces of many Western nations and developing economies (Dabla-Norris, Kochhar, Suphaphiphat, Ricka, & Tsounta, 2015). Moreover, the mechanisms and micro-level processes of social class bias, which are likely to emerge in career advancement processes that evoke status differences and class competition (Ridgeway, 2014), are not well understood (cf. Bapuji, 2015; Côté, 2011; Gray & Kish-Gephart, 2013). By examining biases against lower-class individuals I hope to elucidate how micro-level processes that emerge in face-to-face interactions, such as person perception and nonverbal communication, can contribute to macro-level phenomena such as perpetuation of inequality and limitations on socioeconomic mobility. If organizations avoid discrimination against those lower in social class, they not only achieve organizational outcomes like those mentioned above (e.g., higher performance or productivity), but also help to ensure socioeconomic mobility for a broader swath of their workforce. Work organizations are a primary vehicle for socioeconomic mobility (Bourdieu, 1983; Stephens, Markus & Phillips, 2014). When organizations are unbiased and avoid limiting the career advancement of those with low social class backgrounds, they allow for socioeconomic mobility among the workforce at large.

In the following sections, I will lay out a theory of behavioral signatures of social class background. I will begin by defining social class background and its measurement, and explain why studying social class background (as opposed to current social class

station) is important in the current research. I will then review the literature on barriers to career advancement faced by those from a lower social class background, with special emphasis on the contribution of the present research, perceptual barriers and stereotypes. Specifically, I will use Brunswik's lens model (1952), which identifies the behavioral cues that are displayed by targets (referred to as "cue display"), and the behavioral cues used by observers to form attributions (referred to as "cue utilization"). According to Brunswik's model, behavioral cues displayed by a target can serve as a kind of lens through which observers indirectly perceive the target's inner characteristics. As such, the lens model will allow me to draw connections between a target's unobservable inner characteristic (i.e., social class background), their behavior (i.e., cues display), and observers' resulting judgments and attributions (i.e., cue utilization). Finally, I will posit specific, agentic behavioral cues that I believe will differ by social class background, and lay out five hypotheses to be tested in subsequent chapters.

Given the foregoing theoretical foundation, the current research pursues the following aims. First, I build on nascent work in the organizational literature to document biases against those lower in social class background – biases that limit their chances for career advancement (distinct from well-researched forms of discrimination that might be associated with class, such as racial bias, LaVeist, 2005). Consistent with prior research, career advancement is defined as the observable and extrinsic career outcomes of hiring and promotion (Judge et al., 1999; Seibert et al., 2001). Second, I examine the mechanisms by which this bias is perpetuated – specifically, I examine the behaviors exhibited by those with a lower-class background, and the attributions others form about them, as well as the attributions they form about themselves (Study 1). Third, I examine

how these attributions emerge from the dynamics of face-to-face interaction using a Brunswik (1952) lens model approach, as outlined below. To do so I studied individuals' behavior during mock job interviews (Study 2). I focus on individuals early in their careers, just before they would enter the workforce (Study 2), as well as later in their careers, after they have been working for a decade or more (Study 1). This range allowed me to examine cross-sectionally whether the interactional dynamics that limit lower-class individuals' career advancement endure over time.

Chapter 2: Theory-Building and Hypotheses

The Measurement and Importance of Social Class Background

Scholars agree that social class, much like race, is a complex construct with many facets (e.g., Adler, Epel, Castellazzo & Ickovics, 2000; APA Task Force on Socioeconomic Status, 2006; Kraus et al., 2012; Krieger et al., 1997; Oakes & Rossi, 2003). The facets most commonly measured are household income in the form of salary, level of education, and perceived prestige of work or job title (Adler & Snibbe, 2003; Goodman, Adler, Kawachi, Frazier, Huang & Colditz, 2001; Twenge & Campbell, 2002). These components are often referred to as "objective" measures of social class (Côté, 2011; Kraus, Piff, & Keltner, 2009). Yet recent conceptualizations also emphasize the subjective components of social class, such as one's perceived rank vis-à-vis others in the social hierarchy (Adler et. al, 2000; Goodman et. al, 2001; Singh-Manoux, Adler & Marmot, 2003). This operationalization of social class as self-rated societal rank is captured by participants' self-rating of their place or standing on a ladder relative to others (Goodman et. al, 2001). Prior work suggests that both objective and subjective components of class shape individuals' behavior (Singh-Manoux, Marmot & Adler,

2005) but are also adequately differentiated (*r*s = 0.10-0.30; Anderson, Kraus, Galinsky, & Keltner, 2012) to justify inclusion of both measures. Therefore, and consistent with recent advances in the field, I incorporate both objective and subjective definitions of social class in examining how it determines the behavior and attributions that emerge from interpersonal interactions.

In particular, the present research focuses on social class *background* – an individual's social class while growing up (Bosma et al., 1999; Galobardes et al., 2004; Miller et al., 2009). I focus on social class background for several reasons. First, studying social class background helps to elucidate an underexplored yet profoundly important phenomenon: how social class imprinted early in life persists throughout the lifespan (Kish-Gephart & Campbell, 2015). Though social class can change over time, researchers have shown that childhood social class leaves a "residue" with powerful implications for adult outcomes that are independent of adult social class (Bosma et al., 1999; Galobardes et al., 2004; Miller et al., 2009). I suggest that a lower-class background, like other concealable stigmas (Goffman, 1963; Sanchez & Schlossberg, 2001), predicts adult career advancement (Pachankis, 2007).

Second, any relationship observed between current social class and current organizational advancement (like rate of promotion) is almost tautological. Individuals who have achieved more career success have been promoted more frequently in organizations and thus are likely to earn a higher income; by definition they are higher in social class. In contrast, individuals' social class during their childhood is conceptually distinct from their career advancement in adulthood.

Third, individuals with lower current social class have attained lower levels of education and have experienced different histories of job training, skill-building, and occupational paths. In many cases those lower in current social class might actually lack the experience and expertise needed to succeed in particular jobs. For example, someone who has only worked at lower levels in the hierarchy might lack the necessary expertise for a Senior Vice President position, and one might argue that no "bias" exists by selecting someone else for that role. Therefore, I am interested in the biases that limit the career advancement of those with lower social class background – namely, the perceptual and attributional biases that stopped them from gaining relevant experience and expertise in the first place.

Finally, by studying social class background, I examine possible processes for the generational effects of social class, or how parents' social class can determine their children's social class (Reeves & Howard, 2013). Intergenerational earnings elasticity in the United States – the correlation between a father's income and his son's income – is roughly three times greater than the neighboring developed country of Canada (Corak, 2012). The mechanisms for this are complex and multidetermined (I examine some possible explanations below), but one I explore is parents' social class, and how that can imprint onto children's interpersonal communication styles.

Social Class Background and Career Advancement

Prior research points to many barriers people of low social class backgrounds face in pursuing career advancement. Fewer material resources make it more challenging for them to pursue higher educational attainment (Shavit & Blossfeld, 1993; Breen & Goldthorpe, 1997; Erikson, Goldthorpe, Jackson, Yaish & Cox, 2005), and attend higher-

prestige schools (for summaries, see Fischer, Hout, Jankowski, Lucas, Swidler & Voss, 1996; Sacks 2007). The inability to access these institutions, and amass attendant cultural capital, can disadvantage them in hiring and promotion processes (Schultz, 1961; Sewell & Hauser, 1975; Ballout, 2007). Furthermore, people of lower social class background are more likely to choose professions that earn less (Solon, 1999), prefer less prestigious jobs (Mullet, Neto & Henry, 1992), and have lower vocational self-efficacy (Ali & McWhirter, 2006; Ng, Haines-Saah, Hilario, Jenkins & Johnson, 2016). Powerful homophily effects also may preclude those from lower-class backgrounds from forming the social networks necessary for career advancement (Reay, Davies, David & Ball, 2001; Mangan, Hughes, Davies & Slack, 2010; Bayer & Timmins, 2005; Lindström, Hanson & Ostergren, 2001; Bourdieu, 1986; Weeden & Grusky, 2005). That is, upper-class individuals network with each other more than they do with lower-class individuals (in exclusive networks such as elite universities, fraternities and sororities, or corporate and non-profit boards), which then limits the information and opportunities accessible to those lower in social class. Indeed, Pfeffer (1977) found that socioeconomic background is particularly predictive of success in industries (e.g., finance) for which a social network of high-class individuals is important, and Behtoui & Neergaard (2011) found a positive relationship between parents' status (i.e., education, job prestige) and employees' social capital (as measured by network mapping) in a Swedish manufacturing firm.

In addition to these barriers, however, individuals with lower-class backgrounds might also face perceptual biases when others form judgments of them, judgments that dampen their prospects for career advancement. This is the specific barrier on which I am focused in the current research, and a primary contribution of this work. There is some

evidence suggesting that observers treat individuals worse when they *perceive* those individuals as lower in social class (Côté, 2011). Lower-class people are stereotyped as incompetent (Cooper et al., 1975; Darley & Gross, 1983; Fiske et al., 2002) and lazy (Cozzarelli, Wilkinson & Tagler, 2001; Fiske et al., 2002; Smedley & Bayton, 1978). Observers assume that lower-class students will read below grade level (Darley & Gross, 1983). However, as far as I know, there is no research on biased perceptions of lower-class individuals in the workplace, and how these perceptions shape hiring and promotion processes that determine career advancement. The aim of the current research is to fill this gap. In the following section, I lay out a Brunswikian (1952) model for how social class background might hinder career advancement through biased perceptions and attributions.

The Current Model: Biased Attributions of Individuals with Lower-Class Backgrounds

I propose that individuals' social class background affects the way they behave in interpersonal interactions, and that it does so throughout the lifespan – consistent with the notion of "residue" in the study of health and longevity (Bosma et. al, 1999; Galobardes et. al, 2004). Moreover, the behavioral signatures exhibited by those with lower social class backgrounds lead others to form more negative attributions of them. These attributions, which may emerge independent of individuals' actual competencies, skills, and personal attributes, can nonetheless affect decisions regarding hiring and promotion that are so critical to career advancement.

I use Brunswik's lens model (1952) as a tool to elucidate how people form negative attributions of those from lower social class backgrounds. Researchers use Brunswik's conceptual framework to identify the process by which judges make

predictions of criteria that are probabilistically related to cues (e.g., a physician examining symptoms to judge probable severity of disease, an analyst examining financial statements to judge probable corporate bankruptcy; Karelaia & Hogarth, 2008). Here I use that framework to determine how people form perceptions of those with lower social class backgrounds by identifying the cues on which observers focus to form those perceptions, and on the cues that those from lower social class backgrounds display. The Brunswik approach is especially useful in addressing this research question because it identifies behavioral signatures that serve as a lens through which observers indirectly perceive the underlying construct or inner characteristic (in this case, social class background). Because social class background is a relatively unobservable demographic characteristic (compared to other highly visible characteristics such as gender and race), but may have observable behavioral signatures, the Brunswik model is most appropriate to draw connections between a target's inner characteristic, their behavior, and observers' resulting judgments and attributions. Of course, a notable exception to the relative opacity of social class background is mode of dress (Schmid, Mast, & Hall, 2004), which may include the relative formality of clothing; I attempt to control for this in the present research by instructing all participants to dress as they would for a job interview.

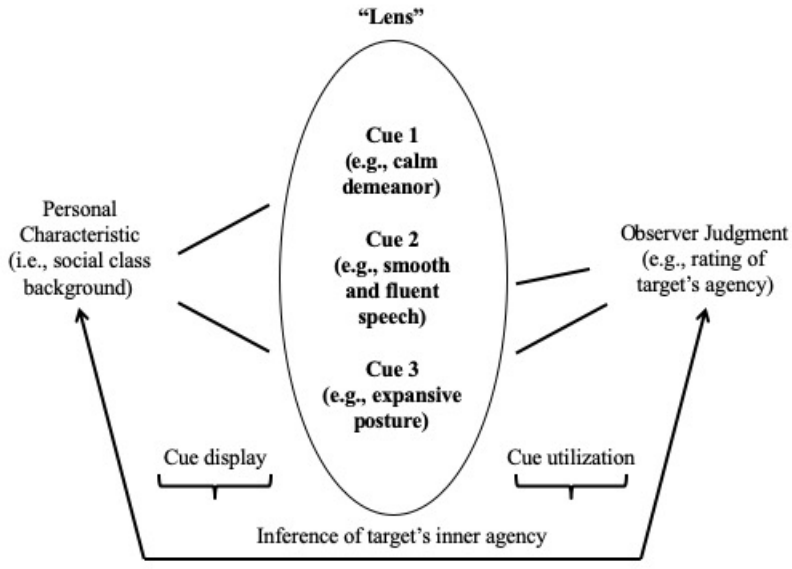
How Person Perceptions Emerge in Face-to-Face Interactions: The Case of Social Class

According to Brunswik (1952), interpersonal perceptions arise in a two-stage process (see Figure 1). First, targets of perceptions *display* particular cues or signals – those of interest in the current investigation are cues affected by social class background. Second, observers *utilize* some combination of cues to form judgments – those of interest

in the current investigation are judgments that inform decisions regarding hire and promotion. Importantly, observers may utilize cues incorrectly, drawing on the wrong cues or combination of cues to make judgments, which in turn can lead to erroneous and inaccurate judgments.

In terms of *cue display*, there is a small but growing body of evidence that people of lower social class display cues that are distinct from those of higher social class. For example, people lower in social class show more engagement cues (e.g., nodding, laughing) than do those of high social class, who show more disengagement cues (e.g., doodling, self-grooming) (Kraus & Keltner, 2009). Moreover, social class is accurately identified in thin-slicing videotapes (Kraus & Keltner, 2009), participant footwear (Gillath, Bahns, Ge, & Crandall, 2012), and even from still facial photographs (Bjornsdottir & Rule, 2017), which suggests individuals lower in social class display cues that differ from those higher in social class.

Figure 1. Brunswik's (1952) lens model, applied to current research question.



Indeed, there is a large literature showing that various forms of status (i.e., respect, admiration, and voluntary deference from others; Anderson, Hildreth & Howland, 2015) are linked to cue display in nonverbal behaviors (e.g., Hall, Coats, & LeBeau, 2005; Sapolsky, 2005; Burgoon, Guerrero & Floyd, 2016), vocal cues (e.g., Gregory & Webster, 1996; Ko, Sadler, & Galinsky, 2015), and "content cues" such as status symbols (Veblen, 1899) and cultural capital (Bourdieu, 1983). Given that social class is, in itself, a form of status, social class should carry with it many of the attending cues of dominance, power, and status (i.e., verticality; Hall et al., 2005), along with potentially unique signatures specific to the social class background of the focal individual (Kraus & Keltner, 2009).

Furthermore, prior research suggests that the effects of social class background on cue display continue through adulthood. The "residue" left by a low social class background is powerful enough to shape adult health and mortality, even after controlling for social class later in life, suggesting that it affects behavior patterns through the lifespan. For instance, low childhood social class predicted poorer self-ratings of health and negative coping styles, independent of adult social class, in a sample of Dutch adults ages 25-74 (Bosma et. al, 1999). Individuals with impoverished childhoods carry a higher risk of overall mortality, regardless of adult socioeconomic status (Galobardes et. al, 2004) – childhood social class is even tied to more specific illnesses like coronary heart disease, lung cancer, and respiratory-related diseases. This work suggests that social class background leaves a powerful imprint on behavior throughout the lifespan. In terms of *cue utilization*, the aforementioned research by Kraus and Keltner (2009) found that observers are able to detect social class, even from thin slices of behavior.

In addition, however, there might be specific attributions made of those with a lower-class background based on the specific behaviors those individuals show. For example, Rivera's (2012) work suggests that perceptions of fit with the organization might emerge in interpersonal interactions. She examined hiring as "cultural matching" in elite professional service firms. Through a deep qualitative investigation of interview processes, she found that employers looked for signs that potential hires are not just competent or skilled but also culturally similar to the firm's existing employees. For example, Rivera notes that employers paid attention to leisure-time activities, a hallmark of upper-class life, in the interview process. In a subsequent paper, Rivera and Tilscik (2016) conducted a resume audit study of the nation's largest law firms, sending identical resumes to potential employers with a "constellation" of higher-class, neutral, and lower-class signals (e.g., last name, extracurricular activities, personal interests), while holding objective human capital signals constant. They found that higher-class male applicants received significantly more callbacks than did higher-class female applicants, or lower-class applicants of either gender. These findings also suggest that employers utilized cues of social class to form judgments of candidates (perhaps particularly of male candidates).

Once observers utilize cues to form attributions of individuals from lower-class backgrounds, there are likely to be consequences – specifically, the attributions formed are likely to affect hiring and promotion decisions regarding those individuals. There is strong evidence that judges or interviewers, in hiring, promotion, and compensation decisions, utilize these kinds of cues to draw conclusions. Intuition and an abundance of research finds that interviewers are less likely to hire and promote individuals whom they view negatively (Gilmore & Ferris, 1989; see also Kulik, Roberson & Perry, 2007, for a

review). Further, nonverbal cues like appearance or mode of dress predict hiring and promotion decisions (e.g., Forsythe, Drake & Cox, 1985; Riggio & Throckmorton, 1988), as do paralinguistic cues like articulation and proper pauses (Parsons & Liden, 1984). Other behavioral cues are also strongly correlated with hiring and promotion decisions: expressed ambition or organizational commitment predicts hiring outcomes (Bretz, Rynes & Gerhart, 1993), as does cultural matching on leisure pursuits and cultural tastes (Rivera, 2012).

Specific Cues Displayed and Utilized

Which cues of social class background might play a role in the cue display and utilization processes? Scholars have identified two fundamental dimensions, agency and warmth, that underlie interpersonal interactions and person-perception (e.g., Fiske et. al, 2002; Foa & Foa, 1974; Horowitz, Dryer & Krasnoperova, 1997; Wiggins, 1982), though different theorists sometimes use slightly different terms. Agency is typically defined as an individual's ability to pursue the task at hand (Fiske et al., 2002) and is composed of traits like intelligence, confidence, and independence. Warmth, on the other hand, is typically defined as an individual's positive intent toward others (Fiske et al., 2002), and is composed of traits like sincerity, tolerance, and trustworthiness.

Fiske et al.'s Stereotype Content Model (2002) particularly emphasizes that these two dimensions are the universal foundation of person-perception, and that different social groups are associated with stereotypes that often mix positive perceptions on one dimension with negative perceptions on the opposite dimension – for instance, lower-class people may be perceived as incompetent but warm. I examine these two dimensions of behaviors that could serve as display cues (agency and, on an exploratory basis,

warmth), and outline possible links between specific behaviors shown and attributions made, in considering whether social class background affects the perceived agency and warmth of close co-workers (Study 1) and job seekers (Study 2). People lower in social class may display fewer agentic and warmth cues because of stereotype threat associated with job-relevant evaluation and performance (Croizet & Claire, 1998), less familiarity with job-relevant norms (Stephens et al., 2014), or uncertainty in person-organization fit (O'Reilly, Chatman & Caldwell, 1991). The current research does not disentangle these possible reasons for *why* people of differing social classes might display different cues, but rather examines the effect of social class directly on display cues.

Nevertheless, social class background is likely to shape whether and to what degree individuals display behaviors associated with agency. Several studies indicate persistent class differences in cue display (Bernstein, 1962; Bjornsdottir & Rule, 2017; Gillath et al., 2012; Kraus & Keltner, 2009; Moe, 1972), even if they do not examine how these differences affect others' perceptions. The possible mechanisms for class differences in cue display are many: those low in social class background have experienced a childhood characterized by material scarcity, greater stress, reduced positive affect, and a focus on urgent problems, to the neglect of other pursuits (Haushofer & Fehr, 2014; Mani, Mullainathan, Shafir, & Zhao, 2013; Shah, Mullinathan, & Shafir, 2012); this "scarcity mindset" may persist even into adulthood (Griskevicius, Tybur, Delton, & Robertson, 2011). Research has indicated that feelings of stress and threat lead to less-agentic behaviors (e.g., reduced visual contact, Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997). Individuals lower in social class also feel a reduced sense of personal control or agency (Kraus et al., 2009) and less confidence in their

abilities (Belmi, Neale, Reiff, & Ulfe, 2019), both of which are associated with the display of less agentic behaviors (Hall et al., 2005).

Therefore, I predict that people from a lower social class background will display fewer agentic cues, relative to their higher social class background counterparts. The cues I will focus on in the present research are overall calm demeanor, overall lack of submissive demeanor, deliberate gestures (Schlenker & Leary, 1982), smooth and fluent speech (Ridgeway, 1987), sustained eye contact while speaking (Ridgeway, 1987), confident and factual vocal tone (Ridgeway, 1987), a louder volume (Ridgeway, 1987), postural flexibility (Carli, LaFleur, & Loeber, 1995), infrequent postural shifts (Jurich & Jurich, 1978), and expansive posture (Tiedens & Fragale, 2003).

Hypothesis 1: People from a lower social class background will display fewer agentic cues or behaviors in work contexts.

Thus far I have focused my attention on the agency axis and ignored the warmth axis. This is largely because prior work and theory suggest opposing hypotheses. Some work suggests that working-class individuals will display more warmth in interpersonal interactions (e.g., nodding, laughter, Kraus & Keltner, 2009; e.g., positive emotion language, Stephens, Townsend, Markus, & Phillips, 2012), for two reasons. First, lower social class people are more dependent on others for their success and thus are more motivated to maintain positive working relationships with them (Kraus & Keltner, 2009). Second, lower-class individuals are more interdependent and collectivistic in their orientation towards others (Stephens et al., 2014), which would spur a warmer interpersonal style (Horowitz et al., 1997).

In contrast, other research suggests that people from a lower-class background will display fewer warmth cues. For instance, employees from a lower social class background could experience cultural mismatch (Stephens, Fryberg, Markus, Johnson & Covarrubias, 2012) or less familiarity with organizational norms (Vance, 2016; Stephens et al., 2014), fueling feelings of disconnection or disidentification (Elsbach & Bhattacharya, 2001), which would in turn reduce display of warmth cues.

Accordingly, I examine the role of warmth as an open research question. I nonetheless believe that examining the warmth axis is important because it could play an important role in the behavior and interpersonal attributional processes that dampen the career advancement of those with a lower social class background. As mentioned earlier, warmth is a fundamental social dimension that underlies virtually all interactions (Fiske et. al, 2002; Foa & Foa, 1974; Horowitz et al., 1997; Wiggins, 1982). Furthermore, there is ample evidence that warmth judgments play an important role in decisions regarding hiring and promotions (Cuddy, Glick, & Beninger, 2011). For example, warmth (or perceived lack thereof) seems to play a critical role in hiring judgments of high-status women (e.g., Masser & Abrams, 2004; Phelan, Moss-Racusin, & Rudman, 2008) and working mothers (Cuddy, Fiske, & Glick, 2004). Members of minority groups are well-served by emphasizing their warmth in job applications to receive interview call-backs (Agerström, Björklund, Carlsson, & Rooth, 2012). Moreover, nonverbal behaviors associated with warmth (e.g., smiling, head shaking and nodding) have been shown to predict hiring decisions (Forbes & Jackson, 1980).

A wealth of empirical research has shown that observers utilize cues displayed by others to in order to form perceptions of that person's underlying traits (e.g., Brunswik,

1952; Gosling, Ko, Mannarelli & Morris, 2002; Juslin, 2000; Rentfrow & Gosling, 2006). Cue utilization can be nearly automatic and implicit (Juslin, 2000; Slovic, 1966), occurring even in "thin slicing" observation (Ambady & Rosenthal, 1993; Borkenau & Liebler, 1992; Kraus & Keltner, 2009) to judge underlying traits like extraversion (Back, Schmukle, & Egloff, 2009) or attachment style (Gillath et al., 2012). Moreover, agency is a central dimension in person-perception (e.g., Fiske et. al, 2002; Foa & Foa, 1974; Horowitz et al., 1997; Wiggins, 1982), thus it seems especially likely that observers will rely on cues to form perceptions of these fundamental perceptual dimensions.

Observers will form attributions or make judgments based on the perceptions formed during cue utilization (e.g., Brunswik, 1952; Gosling et al., 2002; Juslin, 2000; Rentfrow & Gosling, 2006). Because people from a lower social class background display fewer agentic cues, and observers utilize these cues to infer a non-agentic disposition, intuition guides us to the hypothesis that observers will view people from a lower social class background as less agentic.

Hypothesis 2: Observers will view people from a lower social class background as less agentic in work contexts.

Some limited empirical research has suggested that observers or raters may be less willing to hire and promote people from a lower social class background, though these researchers do not identify perceptual mechanisms (e.g., Pfeffer, 1977; Rivera & Tilscik, 2016). I propose that those with a lower social class background will be seen as less hirable and promotable in part because of the attributions of agency others make of them. When observers witness the behavioral signatures of a working-class background (fewer agentic cues, as outlined in Hypothesis 2), they may be less willing to hire or

promote that person due to the inferences they make. Specifically, when people view someone behave in less agentic ways, they assumed the person is less talented, effective, and as having less potential to perform (Anderson et al., 2012; Carli, LaFleur & Loeber, 1995; Driskell, Olmstead, & Salas, 1993; Ridgeway, 1987; Ridgeway & Diekema, 1989). These attributions are devastating to the person's prospects, as few organizations are willing to hire or promote people who are seen as underperforming or ineffective. Interviewers and employers are less likely to hire and promote individuals whom they view negatively (Gilmore & Ferris, 1989; see also Kulik et al., 2007, for a review). Moreover, past research shows that employers rely on these exact kinds of agentic attributions and judgments to make hiring decisions and give performance evaluations – perceived competence (Triandis, 1963) among them.

Hypothesis 3: People from a lower social class background will have diminished career advancement outcomes.

The reduced agency cues that people from a lower social class background display (Hypothesis 1) and that observers form attributions based on (Hypothesis 2) suggests that people from a lower social class background will have diminished career advancement outcomes (Hypothesis 3), either in real-life career attainment (Study 1) or in expert judgment (Study 2). Observers may draw these conclusions unwittingly, without direct consideration of a target's social class background, making this bias potentially subconscious or implicit (John-Henderson, Jacobs, Mendoza-Denton & Francis, 2012), yet the impact of using faulty attributions to make career advancement decisions may be severe.

Based on the theory developed above, after observers form negative agency impressions of a target from a lower social class background, that person will have inferior career advancement outcomes. Accounting for these negative agency impressions should somewhat weaken the relationship between social class background and career advancement. Of course, the many class-driven barriers to career advancement outlined above (e.g., fewer material resources, lacking access to high-quality education) will keep the relationship between social class background and career advancement strong, but accounting for person-perception may partially mediate the statistical relationship between these variables.

Hypothesis 4: Perceptions of agency will mediate the relationship between lower social class background and lower career advancement outcomes.

I have also argued that people from lower social class backgrounds will display observably less-agentic nonverbal behaviors in work contexts, and that observers rely on these cues to make career advancement choices. Accounting for these weaker nonverbal cues should mediate the relationship between social class background and perceptions of lower agency.

Hypothesis 5: Less-agentic nonverbal cues will mediate the relationship between lower social class background and perceptions of lower agency.

It is important to examine the possibility that these effects will hold after controlling for *actual* ability. First, as outlined above, people from lower social class backgrounds are likely to display fewer cues associated with agency, but this may *not* reflect their underlying abilities or traits. For instance, the vast literature on overconfidence makes it clear that displayed confidence (i.e., a facet of perceived

agency) and true ability are empirically distinct, and at times not related strongly at all (e.g., Anderson et al., 2012; Larrick, Burson, & Soll, 2007; Sah, Moore, & MacCoun, 2013). People from lower social class backgrounds could display less confidence in job-relevant contexts due to stereotype threat (Croizet & Claire, 1998), even when they are highly capable.

Second, prior research has shown that the cue utilization process, cue weights, and consequent attributions formed, can be heavily flawed and error-prone (Hartwig & Bond, 2011; Zebrowitz & Rhodes, 2004). In the domain of social class, prior work has also shown that perceptions of lower-class targets can be wrong when observers are given false information about class that leads to stereotyping (Darley & Gross, 1983). Based on this work, I expect that observers will form these negative perceptions of those from lower social class backgrounds even when such perceptions are inaccurate.

Hypothesis 6: The relationship between social class background and career advancement outcomes will persist, even after taking into account objective measures of ability and intelligence.

Overview of Present Research

The present research comprised two complementary studies, both of which were preregistered (links below). Study 1 examined the effects of social class background on career advancement among university alumni who had been in the workforce for between 10 and 20 years. It used self-reports to assess participants' behavior at work, peer-ratings by at least two of their coworkers to assess others' attributions of them, and life-outcome data to assess their career advancement (e.g., income attained, the level in their organization's hierarchy they attained). Participants' social class background was

measured by self-report and validated with university records. This design allowed me to examine the effects of social class background as they unfold and persist over the long course of careers. For example, does social class background predict career advancement even after 10-20 years of one's career? Does it predict one's behavior and others' attributions that far into adulthood, as studies of social class "residue" in the health sciences suggest (Bosma et. al, 1999; Galobardes et. al, 2004)?

Study 2 was a closer look at the effects of social class background at the inception people's careers, just as they were interviewing for jobs near or at the end of their university education. It involved a "mock interview" design in which university students completed a mock job interview and answered a series of questions typical of interviews at elite firms (e.g., consulting firms). Students' social class background was measured with self-report. Their behavioral cue display during the interview was coded by coders who were blind to the study hypotheses. Observers' attributions of them were obtained by having 1,505 independent judges, recruited on Amazon's Mechanical Turk, watch videotapes of the 150 interviews as stimuli (n = 10 raters per video) and rate how they perceived the students. Furthermore, judgments of participants' worthiness of hire and promotion were obtained by having multiple professional recruiters watch videotapes of the interview and make the determination as to whether they, in real life, would recommend hiring and/or promoting each participant.

The present research thus makes a number of contributions to the study of social class. It extends the small number of studies that have demonstrated a link between social class and career advancement (Belmi et al., 2019; Pfeffer, 1977; Rivera, 2012; Rivera & Tilscik, 2016). It examines the effects of social class background on behavioral signatures

in the workplace or in interviews, signatures that might have a prolonged effect on attributional processes important to career advancement. It also examines the effects of social class background on others' attributions – either coworkers (Study 1) or independent judges (Study 2). Finally, it proposes and tests a novel set of hypotheses that might help explain the intergenerational effects of social class, regarding the display of agency cues by the individual and the utilization of those cues by others in forming attributions of them.

Chapter 3: Social Class and Career Advancement

To test how social class background relates to career advancement, I conducted a study in which I surveyed alumni of a large West Coast university, now mid-career professionals who reported on their ascent through various career markers and milestones. These professionals have been working for 10 or more years, which provided the opportunity to study work behavior dynamics, as predicted by social class background, after an individual has progressed in his or her career, and across a variety of industries and functions. Moreover, this study design also allowed me to compare participants' self-reported household income growing up with university registrar records that were gathered at the time of application, giving me an external source of validation.[1]

Building on the small group of studies that have examined the effects of social class on career advancement (Belmi et al., 2019; Pfeffer, 1977; Rivera, 2012; Rivera & Tilscik, 2016), I studied whether social class background predicts a variety of career outcomes, including income, hierarchical position, and perceived power and influence

[1] In considering the longitudinal link between social class background and behavior, it is important to note that both previous findings (Batty, Lawlor, Macintyre, Clark, & Leon, 2005) and the present research demonstrate a high degree of accuracy in how adults recall measures of their social class background, as compared to previously-recorded contemporaneous accounts.

(Hypothesis 3). I also went beyond this prior work to examine the self-reported behavior and peer-reported attributions of individuals from lower social class backgrounds, which may help to explain these outcomes – whether these individuals self-report behaving in less agentic ways (Hypothesis 1) and also are seen by others as less agentic than their counterparts of high social class background (Hypothesis 2). This examination thus provided a first look, within organizational contexts, of the behavioral and perceptual processes that limit the career advancement of those from lower social class backgrounds. I expected that individuals of low social class background will self-report behaving in less agentic ways, that peers will attribute their work behaviors as less agentic than their counterparts of high social class background, and that they will not have achieved the same level of career advancement as their high social class background counterparts, as measured by current household income, place in the organizational hierarchy, and self- and peer-reported power.

Method

I preregistered the larger investigation of career advancement among university alumni (http://aspredicted.org/blind.php?x=uq4x2q).

Participants. Based on Pfeffer (1977), I anticipated a small effect size of social class background on measures of career advancement (e.g., income, hierarchical advancement). Cohen, Cohen, West, & Aiken (2003) recommend a sample size of 200 participants to achieve 80% statistical power if the effect size is small (e.g., the correlation between two variables is expected to be $r = 0.20$); therefore, I targeted a final sample of size of 200 participants, who would have a minimum of two external evaluators each. To attain this desired sample size, and because of the challenges

associated with reaching alumni 10-20 years after graduation, I attempted to reach out to 3,136 alumni for whom I had email contact information provided by the university alumni office. Based on previous pilot studies, I knew that some large proportion of these emails would not be delivered (i.e., bad email address or bounce), another proportion of these emails would go unread, and a final proportion of recruited participants would not click through to the study. As such, the large initial contact pool was necessary for a well-powered final sample.

I was unable to ascertain the exact number of participants who fell into each of these categories (bad email address, unread emails, etc.) due to the limits of our email contact system. I was, however, able to compare non-respondents to respondents on a number of demographic traits, measures of academic achievement, and social class background, as provided by the registrar's office. There was no difference between respondents and non-respondents in terms of gender (65% female among respondents and 62% among non-respondents), $\chi^2(1) = 0.01$, $p = .915$, race (31% white among respondents and 25% white among non-respondents), $\chi^2(1) = 3.74$, $p = .053$, whether the student was an in-state resident (93% in-state students among respondents, 94% in-state students among non-respondents), $\chi^2(1) = 0.23$, $p = .628$, whether the individual was a first-generation college student (19% first-generation students among respondents, 22% first-generation college students among non-respondents), $\chi^2(1) = 0.62$, $p = .433$, SAT score ($M_{respondent} = 1332$, $SD = 185$, $M_{non\text{-}respondent} = 1303$, $SD = 197$), $t = 1.72$, $d = 0.14$, $p = .087$, ACT score ($M_{respondent} = 27.10$, $SD = 4.46$, $M_{non\text{-}respondent} = 25.91$, $SD = 4.34$), $t = 1.39$, $d = 0.27$, $p = .175$, high school GPA ($M_{respondent} = 4.21$, $SD = 0.36$, $M_{non\text{-}respondent} = 4.19$, $SD = 0.34$), $t = 0.67$, $d = 0.06$, $p = .502$, years to graduation ($M_{respondent} = 3.96$, $SD =$

1.34, $M_{non\text{-}respondent}$ = 3.84, SD = 1.41), t = 1.24, d = 0.08, p = .217, or household income growing up ($M_{respondent}$ = $81,718, SD = $81,846, $M_{non\text{-}respondent}$ = $77,215, SD = $76,924), t = 0.60, d = 0.06, p = .548. The sole variable on which I found a significant difference was university GPA ($M_{respondent}$ = 3.42, SD = 0.37, $M_{non\text{-}respondent}$ = 3.29, SD = 0.50), t = 4.82, d = 0.26, p < .001. It is possible that respondents who were more successful as undergraduate students felt more warmth toward the institution and were more willing to open and read university communications; other measures of intellectual ability (high school GPA, SAT scores) showed no difference between respondents and non-respondents.

My final sample was 215 adults (M_{age} = 38.7, SD = 4.3, 65% female, 39% white[2]) who were first incentivized with feedback about their personality. After the first three email invitations to the study, I added a $25 Amazon gift card as an incentive for those who had not yet responded. I also contacted participants who had completed their self-evaluation but had not nominated external evaluators and offered them a $12 Amazon gift card to submit their nominations. Among the study population, 134 participants were not financially compensated in any way (63% of total n), and 80 participants received a financial incentive of some kind (37% of total n). Of these 80 incentivized participants, 70 (33%) received a $25 Amazon gift card for completing their self-reports *and* receiving feedback from two external evaluators, 7 (3%) received a $12 Amazon gift card for nominating two external evaluators, and 3 (1%) received both financial incentives.

[2] There is a slight discrepancy in participant race as recorded by the registrar (31% white) and self-recorded race in the current research (39% white). This is explained by a larger number of racial category options in the registrar data (17) as compared to the current research (8), which led some participants to select a more granular racial group for the registrar's records but a more broad racial group for the current survey. The registrar also records some students' ethnicity as "international," which was not an option in the present research. Moreover, the registrar data does not fully overlap with the present research, as it does not have records for students admitted before the year 1995.

Incentivized and non-incentivized participants did not differ on any independent or dependent variables: household income growing up ($M_{incentivized}$ = \$106,648, SD = \$79,560, $M_{non\text{-}incentivized}$ = \$102,481, SD = \$83,990), t = 0.35, d = 0.05, p = .724, self-reported social class growing up ($M_{incentivized}$ = 2.95, SD = 1.00, $M_{non\text{-}incentivized}$ = 2.83, SD = 1.02), t = 0.86, d = 0.12, p = .391, father's education ($M_{incentivized}$ = 5.18, SD = 2.27, $M_{non\text{-}incentivized}$ = 5.13, SD = 2.56), t = 0.15, d = 0.02, p = .879, mother's education ($M_{incentivized}$ = 4.60, SD = 2.13, $M_{non\text{-}incentivized}$ = 4.31, SD = 2.30), t = 0.90, d = 0.13, p = .370, current household income ($M_{incentivized}$ = \$212,483, SD = \$151,876, $M_{non\text{-}incentivized}$ = \$174,076, SD = \$137,841), t = 1.88, d = 0.26, p = .062, place in the organizational hierarchy ($M_{incentivized}$ = 55%, SD = 25%, $M_{non\text{-}incentivized}$ = 49%, SD = 21%), t = 1.95, d = 0.27, p = .053, power in the organization ($M_{incentivized}$ = 4.72, SD = 1.41, $M_{non\text{-}incentivized}$ = 4.49, SD = 1.24), t = 1.28, d = 0.18, p = .201, or power in the department ($M_{incentivized}$ = 5.65, SD = 1.10, $M_{non\text{-}incentivized}$ = 5.47, SD = 1.13), t = 1.13, d = 0.16, p = .259.

The participants were experienced working professionals who had worked for an average of 4.59 companies in their career (SD = 3.41), had been at their current company for an average of 5.01 years (SD = 4.64), and in their current role for an average of 3.38 years (SD = 3.44 years). Participants reported that their companies had an average of between 101 and 300 employees (M = 5.61, SD = 2.89). A coder blind to independent variables assessed the industries represented in the sample, and found that 28% of participants currently work in the healthcare industry, 20% work in technology, 20% work in education, 13% work in professional services, and 19% work in an industry that falls outside of this coding scheme ("other").

Procedure and Materials. I contacted focal participants via email. The text of recruitment emails can be found in Appendix A. Before beginning their self-evaluations, focal participants were asked to nominate two or more external raters (i.e., work colleagues), who completed measures about the focal participants, which are enumerated in detail below. I gave them instructions on who these raters should be: "When you are trying to think of coworkers to nominate, these can be peers or colleagues in your office that you work with, your supervisor or boss, or people that you supervise. These people should know you well enough to provide background information about you."

Independent Variables. This study was part of a larger investigation of career advancement among alumni of a large West Coast university, and germane to this dissertation, the primary independent variables were measures of participants' social class background. I have chosen to report each independent variable of social class background separately, in order to be consistent with prior literature (e.g., Adler et al., 2000; Kraus et al., 2012), align my findings with scholarly calls for more nuanced measurement of class constructs (Beller, 2009; Diemer et al., 2012) and investigate possibly unique effects of each variable. For instance, in prior literature, a father's socioeconomic status has often been assumed to represent that of the whole family (e.g., Goldthorpe, 1983). However, recent research has shown the importance of mother's education for outcomes such as a child's education and occupational status (Korupp, Ganzeboom, & Van Der Lippe, 2002), as well as differentiable effects of mother and father's education on intergenerational transmission of cultural capital (DiMaggio & Mohr, 1996). Moreover, subjective social class (i.e., MacArthur ladder exercise) may have unique effects above and beyond objective social class measures like household

income growing up (Adler et al., 2000; Singh-Manoux et al., 2005). Therefore, I report all four measures of social class background throughout my findings.

I asked participants to estimate their household income growing up: "What was your total household income when you were growing up (i.e., your family of origin, parent or parents), that is in dollars at that time? If you don't know, or are uncertain, just make your best guess. Please estimate to the nearest 5,000 increment (e.g., if you think your family made about 32,750 when you were growing up, but you're not sure, estimate 35,000)." Next, I asked participants to describe their social class growing up (1 = *lower-class*, 2 = *lower-middle class*, 3 = *middle-class*, 4 = *upper-middle class*, 5 = *upper-class*; a standard measure used in prior work, e.g., Becker, Kraus, & Rheinschmidt-Same, 2017). I also measured mother and father's education: "What is the highest level of education your [mother / father] completed?" (1 = *did not finish high school*, 2 = *high school graduate*, 3 = *some college*, 4 = *trade / technical / vocational training*, 5 = *college graduate*, 6 = *some postgraduate work*, 7 = *master's degree (MA, MS, MBA, or similar postgraduate degree)*, 8 = *doctoral degree (PhD, MD, JD, or similar postgraduate degree)*, 9 = *N/A*; Diemer, Mistry, Wadsworth, Lopez, & Reimers, 2012).

The school registrar did not have records for students admitted before the year 1995. However, for 53% of the sample, I was able to compare participants' estimates of their household income growing up to the university registrar's records of their household income at the time they applied to school (i.e., previous year's combined household salary). The participants' estimates of their own household income growing up were highly accurate, correlating $r = 0.69$ ($p < .001$) with university records gathered up to 20 years before the present research. In subsequent results, I use participants' self-reported

measure of household income growing up as a primary independent variable because I have complete data for the sample on that measure.

Controls. Participants responded to a variety of questions about their company or organization that could serve as possible controls or moderators because of their relationship with career advancement measures (e.g., participants who work in well-paid industries may have higher current household income).

Participants selected from a drop-down menu the number of people working for their current company (1 = *5 or fewer employees*, 2 = *6 to 20 employees*, 3 = *21 to 50 employees*, 4 = *51 to 100 employees*, 5 = *101 to 300 employees*, 6 = *301 to 1000 employees*, 7 = *1001 to 2000 employees*, 8 = *2000 to 7500 employees*, 9 = *7501 to 35,000 employees*, 10 = *35,000 or more employees*). These categories were based on pilot data and aimed to capture as much variation in the sample as possible. Focal participants were asked two free-response questions about their work: "In what industry do you work?" and "What is your current title and role?" Lastly, participants reported the number of organizations they have worked for in their career, and the time (i.e., years and months) they have spent at their current company, and in their current role.

Dependent Variables. To measure career advancement in financial terms, I asked participants to report their current household income: "What was your total household income last year? If you're not certain, try to estimate to the nearest 5,000 increment (e.g., if you think you made about 32,750, but you're not sure, estimate 35,000)." To measure career advancement in terms of placement in the organizational hierarchy, focal participants were asked two numeric drop-down questions about the organizational hierarchy and their placement within it: "How many levels does your organization's

hierarchy have (from the bottom-most entry-level positions, all the way to the CEO)?" and "On what level of your organization's hierarchy are you?" (a standard measure in prior work, e.g., Brass, 1984; Hinings, Hickson, Pennings, & Schneck, 1974; Kennedy & Anderson, 2017). I divided the participant's current hierarchical level by the total number of hierarchical levels, and report this statistic throughout the paper as "percent hierarchy." Then, both focal participants and their peer raters reported participants' power and influence, both in their organization as a whole, and within their department, such as [in my organization / in my local department or subunit], "[I have / this person has] influence over important decisions," "[I have / this person has] a great deal of power in the organization," and "[I have / this person has] a lot of influence in the everyday activities" (1 = *Disagree strongly*, 7 = *Agree strongly*; these questions were adapted from Anderson, Ames, & Gosling, 2008; Anderson, John, & Keltner, 2012; Anderson, Spataro, & Flynn, 2008; Brass & Burkhardt, 1993).

Work behaviors (self-report) and colleague attributions (peer ratings). To examine work behaviors that might be shaped by social class background, both focal participants and their peer raters rated the participant on many dimensions, using the prompt "[I am / this person is] someone who…" (1 = *Disagree strongly*, 7 = *Agree strongly*).

I derived an index of agentic work behaviors ($\alpha_{self} = 0.88$, $\alpha_{evaluator} = 0.90$) from established literature. As noted previously, agency is typically defined as an individual's ability to pursue the task at hand (Fiske et al., 2002) and is composed of traits like intelligence, confidence, and independence. Accordingly, I used items related to facets of agency. First, I examined task competence and contributions to the organization ($\alpha_{self} =$

0.86, $\alpha_{evaluator}$ = 0.89): is highly effective at his / her job; perseveres until the task is finished; is self-confident; makes important contributions to the team's and organization's success; makes things happen and gets things done for the organization; tackles his / her work with great energy or enthusiasm; is highly competent; has a great deal of talent. Then, because political savvy and power accumulation is so important to career advancement, I measured political effectiveness (α_{self} = 0.87, $\alpha_{evaluator}$ = 0.88): seeks to occupy positions of authority; uses connections and networks to make things happen; builds alliances with influential people; has a knack for gaining control over important resources (e.g., projects, budgets, or roles); spends a lot of time and effort networking with others; is assertive; wants to have influence over important decisions; uses organizational politics effectively to get things done; is politically savvy. Lastly, I also included more submissive and deferential behaviors, which may indicate a *lack* of agency (all items reverse-scored; α_{self} = 0.61, $\alpha_{evaluator}$ = 0.40): is deferential, particularly to those with authority (R); is nervous most of the time (R); can seem nervous or timid in important work situations, like performance reviews or presentations (R).

Furthermore, I posed nine exploratory warmth work behaviors derived from previous literature (α_{self} = 0.78, $\alpha_{evaluator}$ = 0.92): cares about others' well-being; is liked by others; is considerate and kind to almost everyone; is very trustworthy; has developed strong relationships with others at work; is good at sensing what other people are thinking and feeling; has good relationships with coworkers; contributes positively to the organization's culture; fits well into the organization's culture.

Peer raters typically agreed with one another on both the overall agency dimension (ICC2 = 0.59) and warmth dimension (ICC2 = 0.50). I also investigated

whether target participants reported similar behaviors compared to their external raters, and found that target participants agreed with their peer raters on both the overall agency dimension (ICC2 = 0.57) and warmth dimension (ICC2 = 0.52). Both self-peer and between-peer inter-rater reliability for each of the 29 agency and warmth items can be found in the Appendices.

Demographics. Lastly, focal participants and their peer raters filled out a variety of other demographic items, including gender (1 = *male*, 2 = *female*, 3 = *other*), age, race, and education level.

Results

To test Hypothesis 3 (people from a lower social class background will have diminished career advancement outcomes), I first analyzed the relationship between social class background and current household income (a measure of career advancement, see Table 1). Importantly, and consistent with decades of economic research showing inter-generational effects of social class (e.g., Chetty, Hendren, Kline, & Saez, 2014; Dunn & Holtz-Eakin, 2000; Solon, 1992, 1999), there was a strong and significant correlation between current household income and household income growing up (r = 0.28, $p < .001$).[3]

To ensure my findings were not due to race or gender, I examined whether race or gender could partially explain the relationship between social class background (i.e., household income growing up, father's education, or self-reported social class growing up) and career advancement (i.e., current household income, place in the organizational

[3] It is interesting to note that this correlation is lower than previously published work (Corak, 2012, estimates intergenerational earnings elasticity around r = 0.47). This diminished correlation might be attributed to the prestigious higher education obtained by study participants, but of course, it does not eliminate the social class background effect.

hierarchy, power in the organization, power in the department). First, I explored whether race or gender predicted career advancement outcomes. Women were significantly more likely to have a lower current household income (r = -0.16, p = .020) but all other correlations between race and gender and career advancement outcomes were non-significant (rs < 0.08, ps > .242). I also examined whether the relationship between household income growing up and current household income remained significant after controlling for race and gender. Indeed, household income growing up remained a significant predictor, and had a greater beta weight (β = 0.54, p < .001) than either race (β = -0.17, p = .388) or gender (β = -0.52, p = .012).

Race and gender did not moderate the relationships between social class background and career advancement. I found no significant differences between white and non-white participants in the relationships between social class background and career advancement across 12 separate interaction analyses, and no significant differences between men and women in the relationships between social class background and career advancement across 12 interaction analyses.

Moreover, in a regression controlling for other potential determinants of current household income (i.e., industry and number of employees), household income growing up was the sole significant predictor of current household income (β = 0.489, p < .001, see Table 2).

Table 1. Means, standard deviations, and correlations between measures of social class background, career advancement outcomes, and self / evaluator ratings (Study 1).

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 – Household income growing up	$105,058	$81,102	--													
2 – Registrar's record of household income	$87,416	$84,471	0.69***	--												
3 – Social class growing up	2.90	1.00	0.70***	0.62***	--											
4 – Father's education	5.16	2.37	0.39***	0.37***	0.48***	--										
5 – Mother's education	4.49	2.20	0.39***	0.31***	0.48***	0.59***	--									
6 – Household income today	$198,035	$147,602	0.28***	0.22*	0.08	0.07	0.03	--								
7 – % hierarchy	53%	24%	0.05	0.06	0.04	0.08	0.01	0.07	--							
8 – Power in the organization (self)	4.64	1.35	0.08	0.08	0.07	0.08	0.04	0.31***	0.47***	--						
9 – Power in the department (self)	5.58	1.11	0.08	0.02	0.08	0.10	0.09	0.31***	0.37***	0.67***	--					
10 – Power in the organization (evaluator)	4.69	1.05	0.00	0.05	0.03	0.05	-0.02	0.24***	0.34***	0.55***	0.54***	--				
11 – Power in the department (evaluator)	5.52	0.98	0.05	0.11	0.10	0.05	0.10	0.32***	0.29***	0.50***	0.67***	0.72***	--			
12 – Agentic work behaviors (self)	5.02	0.83	0.14*	0.18+	0.03	0.11	0.06	0.31***	0.27***	0.55***	0.50***	0.40***	0.36***	--		
13 – Agentic work behaviors (evaluator)	5.92	0.50	0.09	0.16+	0.04	0.00	0.03	0.26***	0.05	0.27***	0.28***	0.47***	0.52***	0.46***	--	
14 – Warmth work behaviors (self)	5.91	0.70	0.11	0.09	0.07	0.09	0.04	0.25***	0.14*	0.37***	0.51***	0.41***	0.40***	0.60***	0.30***	--
15 – Warmth work behaviors (evaluator)	6.13	0.65	-0.04	0.00	-0.06	-0.08	-0.04	0.10	-0.03	0.18*	0.13+	0.36***	0.38***	0.15*	0.53***	0.39***

Notes: n = 214 participants. Have registrar's record of household income (variable 2) for 53% of sample (n = 113 participants). $^{+}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table 2. OLS regression analysis of participants' current household income, predicted by household income growing up, industry, and number of employees (Study 1).

	Model 1	**Model 2**
Intercept (current household income)	100,746	91,555
	(139,319)	(140,582)
Household income growing up	**0.493*****	**0.489*****
	(0.121)	(0.122)
Industry – Education	-12,687	-13,938
	(140,559)	(140,826)
Industry – Healthcare	38,305	36,464
	(139,980)	(140,268)
Industry – Technology	100,947	97,517
	(140,473)	(140,862)
Industry – Professional services	82,656	84,614
	(141,383)	(141,678)
Industry – Other	41,272	41,566
	(140,519)	(140,768)
Number of employees	--	1,915
		(3,516)
Observations	214	214
Adjusted R^2	0.119	0.116
Standard errors in parentheses. $^{+}$ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$		

I did not find a relationship between current household income and self-reported social class growing up ($r = 0.08$, $p = .267$), father's education ($r = 0.07$, $p = .286$), or mother's education ($r = 0.03$, $p = .711$)

As a further test of Hypothesis 3, I then analyzed the relationship between social class background and career outcomes of hierarchical advancement, power within the organization, and power within the department. Surprisingly, I found no correlation between social class background and these career outcomes for power (rs < 0.11, ps > .156).

Next I examined Hypothesis 1 (people from a lower social class background will display fewer agentic cues or behaviors in work contexts). Those from a lower social class background saw themselves as behaving less agentically at work; agentic behavior

is significantly correlated with higher household income growing up ($r = 0.14$, $p = .043$), though this does not hold true for self-reported social class growing up ($r = 0.03$, $p = .645$), father's education ($r = 0.11$, $p = .115$), or mother's education ($r = 0.06$, $p = .353$). There was no relationship between social class background and behaving warmly at work (rs < 0.11, ps > .120). I conducted mediation analyses, examining whether the link between household income growing up and current household income was mediated by self-reports of agentic work behaviors. Indeed, self-reported agentic work behaviors fully mediated the relationship between household income growing up and current household income, 95% CI [0.011, 0.152].

Finally, I tested Hypothesis 2 (observers will view people from a lower social class background as less agentic in work contexts). Despite this participants' apparent self-consciousness on the agency dimension, evaluators did not see lower social class background participants as less agentic (rs < 0.16, ps > .078) or less warm (rs < -0.08, ps > .239).

In Chapter 3, I tested Hypotheses 1-3, through a survey of mid-career professionals who reported on their ascent through various career markers and milestones. I found that Hypothesis 1 was supported: household income growing up was significantly correlated with participants' self-reported agentic work behaviors. However, Hypothesis 2 was not supported: no measures of social class background were associated with colleague attributions of agentic work behaviors. Perhaps most importantly, Hypothesis 3 was supported: participants from a lower social class background had lower current household income. This effect was not explained by a variety of potential control variables (e.g., race, gender, industry, firm size). In order to test my additional

hypotheses, and to look at more micro-level perceptual processes, I designed a second study which is presented in Chapter 4.

Chapter 4: Social Class Signals in Interviews

To test how social class signals emerge in an interview process, and how they are used to make interpersonal attributions and career advancement judgments, I conduct a study in which participants are video-recorded in a mock job interview. Case interviews are conducted in a variety of industries, particularly in elite firms like consulting, research, marketing, consumer product management, and investment banking organizations (e.g., Peterson, monster.com). Case interviews involve live problem-solving of a particular business issue, which simulates realistic on-the-job performance and exemplifies competence in a particular skill. Case interviews also prompt participants to engage in a broader range of job-relevant behaviors (e.g., asking questions, solving problems) than do traditional interviews, enabling researchers to capture more possible cues of social class background. Interviewers are blind to the participant's social class background and to the hypotheses of the study.

I examine whether observers of videotaped case interviews ("raters") will rate interviewees of low social class background more poorly on various cues (i.e., agency cues; Hypothesis 2) that have downstream consequences for career advancement (i.e., judged likelihood of hiring and promotion; Hypothesis 3). I analyze whether these perceptions of agency mediate the relationship between social class background and career advancement outcomes (Hypothesis 4), as well as whether agentic cues mediate the relationship between social class background and perceptions of agency (Hypothesis 5). Moreover, I examine whether these ratings emerge even after controlling for actual

competence – I collect objective tests of interviewees' true ability to demonstrate that these judgments are inaccurate, controlling for intelligence as measured by an IQ test (Cattell & Cattell, 1960) and GPA (Hypothesis 6). Finally, I unpack which discrete behaviors, specifically, cause these effects by coding their behaviors from the interviews (Hypothesis 1).

Method

I preregistered multiple stages of data collection: perceptual attributions (http://aspredicted.org/blind.php?x=ag45fk); non-verbal signals (http://aspredicted.org/blind.php?x=ef4cn9); and hiring manager ratings (http://aspredicted.org/blind.php?x=s54d8v). I preregistered in multiple stages because of dependencies in data collection: for instance, my findings on observers' perceptual attributions informed the non-verbal signals that I chose to code. In the perceptual attributions pre-registration, I posed six possible domains of observer attribution that might vary based on social class background (i.e., task competence, social / leadership skill, warmth, dominance, motivation, anxiety). Then, in the non-verbal signals pre-registration, I hypothesized about 10 agentic non-verbal cues which might vary in display. Lastly, I pre-registered hiring manager ratings in order to specify my hypotheses about the relationship between social class background and the opinion of expert observers.

Participants. Based on Kraus & Keltner (2009), I anticipated a small-to-medium effect size ($r \sim 0.25$) of social class background on cue display (e.g., calm demeanor, confident and factual vocal tone). Cohen et al. (2003) recommend a sample size of 85 participants to achieve 80% statistical power if the effect size is medium (e.g., the

correlation between two variables is expected to be $r = 0.30$); therefore, I approximately doubled this target for a final sample of size of 150 participants as interviewees, in their third or fourth undergraduate year, recruited from a large West Coast university, who received either course credit or payment ($15) for their participation. I recruited third- and fourth-year students who are concurrently preparing for real job interviews in their chosen fields, and likely have some experience with interview processes and / or the case interview method. This recruitment strategy allows me to examine the sample of interest (i.e., early-career professionals) at the critical career milestone of interest (i.e., internship or job interviews). My final sample was 152 undergraduate participants (M_{age} = 21.9, *SD* = 3.5, 63% female).

To examine the unique impact of social class background, I aimed to recruit a sample of undergraduate students reflective of the proportional breakdown of the U.S. population by race, which is 63.7% white, 12.2% black, 16.3% Hispanic / Latino, 4.7% Asian, and 3.1% other. The final demographics of my sample were 69.7% white, 3.3% black, 13.8% Hispanic / Latino, 3.9% Asian, and 9.2% other.

To control for clothing and accessory signals of social class background, and to make the mock interview context as realistic as possible, I asked participants to come to the videotaped case interview in professional dress (from the recruitment materials: “For the interview, you must dress in professional clothing, like you would for a job interview”). I paid a nominal show-up fee to participants not dressed professionally and did not interview them; research assistants gave a $5 bonus to participants who dressed professionally and completed the interview.

Procedure and Materials: Pre-Task Controls. I enrolled participants in an hour-long study in which they knew they would be conducting a videotaped interview. Before having participants come to the lab for the videotaped case interview, I asked them to complete a pre-survey that assessed control variables.

First, to control for objective intelligence, I administered a timed, 12-minute version of the Cattell Culture Fair Test (Scale 3, Form A, 1963), a widely used measure of IQ. I also asked participants to self-report their university GPA (on a four-point scale).

Then, to control for objective socio-emotional skills, I administered the Reading the Mind in the Eyes test (Baron-Cohen, Wheelwright, Hill, Raste & Plumb, 2001), a measure of an individual's ability to decipher or decode others' emotions through nonverbal cues (i.e., facial expressions). This approximately 10-minute test presents 36 photographs of eyes (including the target's eyebrows and nasal bridge) displaying particular emotions (e.g., panic, preoccupation, amusement), and asks participants to judge what emotion is being shown.

Finally, I asked participants a few academic and employment history criterion questions, in order to control for their level of professional experience, which could impact case interview performance. I asked participants to self-report their intended or declared major, how many business courses they have taken, and whether they have ever held a full-time summer internship, a part-time school-year internship, or a full-time job.

Procedure and Materials: Case Interview. Upon arrival to the lab, participants were given a short explanation of the interview. Then, trained research assistants began reading the case interview aloud. The case interview information and questions (read aloud), plus graphs (shared on paper, for the third and final case interview question),

were sourced directly from the website of McKinsey & Company, a well-known consulting firm, and concerned a beverage company client called "SuperSoda." Participants were asked 3 questions about SuperSoda's plan to launch a new electrolyte sports drink ("Electro-Light"). Research assistants were trained to read the questions aloud and answer any reasonable participant questions. The focal questions were: 1) Which factors should SuperSoda consider and act on before launching Electro-Light into the US beverage market? 2) SuperSoda executives believe that the company's position as a top 3 beverage company gives them strategic strengths toward achieving the desired market share. However, they ask us to outline what would be needed to achieve the target of 12.5% share of the electrolyte-drinks market. What would SuperSoda need to do to gain the required market share for Electro-Light following its launch? 3) To help SuperSoda determine how best to launch the new Electro-Light product, the team conducted a consumer-research study. [Participants were given an additional sheet of paper with 2 graphs, available in the Appendices, containing information about the branding of drinks currently on the electrolyte drinks market, and potential distribution channels for Electro-Light]…What can you conclude from this regarding how the new Electro-Light product should be launched? Participants verbally responded to these questions aloud.

Procedure and Materials: Post-Task Survey. After the case interview was completed, participants were asked to fill out a post-task survey.[4]

[4] Simultaneous to participants filling out the post-task survey, in a different room, the undergraduate interviewers rated the participant on a series of perceptual dimensions. I deemed these measures exploratory due to the professional inexperience of the interviewers, and instead recruited experienced hiring managers to rate participants' projected professional outcomes. All results from undergraduate interviewers are reported in the Appendices.

First, participants filled out the MacArthur ladder exercise, which contains the following instructions:

*Think of this ladder as representing where people stand in the United States. At the **top** of the ladder are the people who are the best off – those who have the most money, the most education and the most respected jobs. At the **bottom** are the people who are the worst off – who have the least money, least education, and least respected jobs or no job. The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to people at the very bottom.*

Participants were asked: "Where would you place yourself on this ladder when you were growing up (i.e., the ladder rung you would consider most representative of your family background)?" (1 = *Lowest rung*, 10 = *Highest rung*). Participants then filled out demographics questions that included key measures of social class background (i.e., father's education, mother's education, and family's total household income growing up). The items measuring social class background were highly correlated (rs > 0.43, ps < .001).

Procedure and Materials: Hiring Manager Ratings. After I collected the videotaped case interviews, I uploaded the videos to a private YouTube channel, and shared them with experienced hiring managers (n = 3). These managers had made numerous hiring decisions in professional contexts, including experience in the consulting industry.

After watching participants answer Question 1 in the case interview, the hiring managers reported "How likely would you be to hire the interviewee for a company position?" (1 = *Extremely unlikely*, 7 = *Extremely likely,* α = 0.75, ICC2 = 0.46) and "How much would you recommend to other colleagues that the interviewee be hired?" (1 = *Do not recommend and advocate against hiring*, 7 = *Extremely likely to recommend hiring to others,* α = 0.72, ICC2 = 0.51). I asked similar questions about the hiring

manager's willingness to promote the interviewee: "How likely would you be to promote the interviewee to a higher position in the company? In other words, how much potential does the interviewee show for higher-level roles?" (1=*Extremely unlikely*, 7=*Extremely likely,* $\alpha = 0.79$, ICC2 = 0.67), and "How much would you recommend to other colleagues that the interviewee be promoted to a higher promotion in the company? In other words, would you be likely to share the interviewee's potential for higher-level roles with other colleagues?" (1 = *Do not recommend and advocate against promotion*, 7 = *Extremely likely to recommend promotion to others,* $\alpha = 0.68$, ICC2 = 0.57).

Procedure and Materials: Nonverbal Signals of Agency. A team of research assistants who were blind to study hypotheses ($n = 4$, $\alpha = 0.92$ across all behaviors) rated the interviewees according to established nonverbal signals of agency (i.e., overall calm demeanor, overall lack of submissive demeanor, deliberate gestures (Schlenker & Leary, 1982), smooth and fluent speech (Ridgeway, 1987), sustained eye contact while speaking (Ridgeway, 1987), confident and factual vocal tone (Ridgeway, 1987), a louder volume (Ridgeway, 1987), postural flexibility (Carli, LaFleur, & Loeber, 1995), infrequent postural shifts (Jurich & Jurich, 1978), and expansive posture (Tiedens & Fragale, 2003)). These nonverbal signals effectively operationalize the construct of agentic cue display, because they are observable, agreed-upon by raters, and widely used in prior literature. Given the results from Study 1, which found that social class background predicted agentic behavior, and the fact that behavioral coding is time and labor intensive, I focused the behavioral coding solely on the agency axis and not the warmth axis. I predicted that these behavioral cues would be *less* displayed by participants from lower social class backgrounds. Infrequent postural shifts evinced no relationship with

measures of social class background (rs < 0.13, ps > .110), and is not included in subsequent analyses.

Video coders rated the following statements about each interview's Question 1 posed in the case interview, and drawn from prior research as articulated above:[5] The individual seemed calm and relaxed (as compared to nervous and anxious). (1 = *Strongly disagree, the participant seemed very nervous and anxious*; 7 = *Strongly agree, the participant seemed very calm and relaxed*) (M = 5.09, SD = 1.17). The individual seemed on equal footing with the interviewer (as compared to deferential to the interviewer). (1 = *Strongly disagree, the participant seemed deferential to the interviewer*; 7 = *Strongly agree, the participant seemed on equal footing with the interviewer*) (M = 4.91, SD = 1.20). The individual made calm and deliberate gestures (as compared to nervous and fidgety gestures). (1 = *Strongly disagree, the participant made nervous and fidgety gestures*; 7 = *Strongly agree, the participant made calm and deliberate gestures*) (M = 4.52, SD = 1.00). The individual had consistent, well-paced, and fluent speech (as compared to tripping over his or her words, and seeming to hesitate, stutter, or use filler words). (1 = *Strongly disagree, the participant tripped over his or her words, and seemed to hesitate, stutter, or use filler words*; 7 = *Strongly agree, the participant's speech was consistent, well-paced, and fluent*) (M = 5.16, SD = 1.06). The individual made sustained and frequent eye contact while speaking (as opposed to fragmented and infrequent eye contact while speaking). (1 = *Strongly disagree, the participant's eye contact was fragmented and infrequent while speaking*; 7 = *Strongly agree, the participant's eye*

[5] Video coders originally rated all questions with 1 indicating an agentic behavior and 7 indicating a non-agentic behavior. In order to make the coding system more intuitive for readers, I have reverse-coded all ratings such that 1 indicates a non-agentic behavior and 7 indicates an agentic behavior.

contact was sustained and frequent while speaking) (M = 4.46, SD = 1.31). The individual had a confident and factual vocal tone (as compared to an uncertain and wavering vocal tone). (1 = *Strongly disagree, the participant had a very uncertain and wavering vocal tone*; 7 = *Strongly agree, the participant had a very confident and factual vocal tone*) (M = 4.86, SD = 1.32). The individual spoke loudly (as compared to quietly). (1 = *Strongly disagree, the participant spoke quietly*; 7 = *Strongly agree, the participant spoke loudly*) (M = 4.01, SD = 0.99). The individual's body was loose and flexible (as compared to stiff and stilted). (1 = *Strongly disagree, the participant had a stiff and stilted body*; 7 = *Strongly agree, the participant had a loose and flexible body*) (M = 4.31, SD = 1.22). The individual maintained the same posture over time (as compared to changing their posture often). (1 = *Strongly disagree, the participant changed their posture often*; 7 = *Strongly agree, the participant maintained the same posture over time*) (M = 5.93, SD = 1.23). The individual had an expanded or upright posture that takes up a lot of space (as compared to a constricted or slumped posture that takes up little space). (1 = *Strongly disagree, the participant had a very constricted or slumped posture that takes up little space*; 7 = *Strongly agree, the participant had a very expanded or upright posture that takes up a lot of space*) (M = 4.88, SD = 0.97). Each of these ten items correlated significantly with one another (rs > 0.23, ps < .001), with the exception of the final item regarding postural shifts, which had non-significant correlations with most items ($r_{calm\ demeanor}$ = 0.06, $r_{lack\ of\ submissive\ demeanor}$ = -0.02, $r_{gestures}$ = -0.09, $r_{fluent\ speech}$ = 0.12, $r_{eye\ contact}$ = 0.04, $r_{vocal\ tone}$ = -0.01, r_{volume} = -0.19, $r_{stiffness}$ = -0.45, $r_{expansive\ posture}$ = -0.09). After dropping the postural shifts item, I combined the remaining nine nonverbal behaviors into an index of agentic nonverbal cues (α = 0.91).

Procedure and Materials: Observer Perceptual Attributions. After I collected the videotaped case interviews, I uploaded the videos to a private YouTube channel, and embedded them in a survey that I shared on Amazon's Mechanical Turk. I recruited 10 raters per video, for a total of n = 1,505 raters, each of whom were randomly assigned to view and rate one of the 150 videos. With regard to the stimulus, participants were told "in this study you will watch a short video featuring a question from a case interview - the interviewees are solving a business problem. After the video, you will be asked to make some observations about the interviewee." In order to better standardize content, the videos were clipped such that raters were shown only Question 1 posed in the case interview (i.e., Which factors should SuperSoda consider and act on before launching Electro-Light into the US beverage market?). The clipped videos ranged in length from 59 seconds to 7 minutes 28 seconds (M_{length} = 3 minutes 14 seconds, SD_{length} = 1 minute 23 seconds).

Then, participants were asked to rate interviewees on a series of perceptual dimensions similar to those posed in Study 1, responding to the question "How much do you think he or she exhibits the following traits?" (1 = *Not at all*, 7 = *Extremely*). Here, given the ease with which raters could complete their ratings, I asked them to rate participants along both the agency and warmth axes. The perceptual dimensions were: agentic attributions derived from prior literature on competence, motivation, and anxiety/deference (α = 0.98; competent, intelligent, skilled, effective, has strong leadership skills, would make a good leader, self-assured, assertive, firm, dedicated, hard-working, ambitious, driven, motivated, shy (R), timid (R), meek (R), anxious (R), nervous (R), awkward (R), unconfident (R)) and warmth attributions derived from prior

literature on communion and other-orientation ($\alpha = 0.92$; interpersonally skilled, emotionally intelligent, friendly, kind, honest, trustworthy, helpful, generous). Raters typically agreed on both the overall agency dimension (ICC2 = 0.78) and individual agency attributions (ICC2s > 0.54); raters had slightly lower, but still statistically acceptable, agreement on the overall warmth dimension (ICC2 = 0.45) and individual warmth attributions (ICC2s > 0.21). I control for rater agreement for particular targets in testing Hypothesis 3 (see Table 4).

Next, participants rated the perceived fit of the interviewees: "Please rate the person in the video. Compared to other job candidates, how well would he or she fit into a white-collar company or organization?" (1 = *Not at all*, 7 = *Extremely*). Lastly, participants guessed the social class background of interviewees on the MacArthur ladder (1 = *Lowest rung*, 10 = *Highest rung*) and reported measures of their own social class (household income last year, education level, occupation, and current self-rating on the MacArthur ladder).

Results

Social class background and career advancement outcomes. I first analyzed the relationship between social class background and career advancement measures assessed by experienced hiring managers (Hypothesis 3; see Table 3). In short, there is a significant correlation between measures of social class background and the willingness of experienced hiring managers to hire and promote interviewees, as well as perceptions of fit and leadership abilities. Specifically, self-reported household income growing up was associated with hiring decisions ($r = 0.17$, $p = .047$) and a marginally associated with

promotion decisions ($r = 0.15$, $p = .072$). Moreover, household income growing up was significantly tied to perceived cultural fit ($r = 0.18$, $p = .029$).

Table 3. Means, standard deviations, and correlations between measures of social class background and career advancement outcomes as rated by hiring managers (Study 2).

Variable	*M*	*SD*	1	2	3	4	5	6	7
1 – Ladder growing up	6.33	2.24	--						
2 – Household income growing up	5.22	1.88	0.68***	--					
3 – Father's education	5.18	1.82	0.51***	0.49***	--				
4 – Mother's education	4.76	1.92	0.43***	0.47***	0.52***	--			
5 – Hiring decisions	4.21	1.23	0.06	0.17*	0.18*	0.03	--		
6 – Promotion decisions	4.24	1.19	0.08	0.15^{+}	0.19*	0.04	0.96***	--	
7 – Hiring manager perceptions of fit	4.71	1.15	0.08	0.18*	0.20*	0.06	0.92***	0.91***	--
8 – Hiring manager perceptions of leadership	4.18	0.99	0.03	0.13	0.16^{+}	0.06	0.92***	0.94***	0.90***

Note: n = 152 participants. $^{+}$ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Along the same lines, father's education was significantly correlated with hiring decisions ($r = 0.18$, $p = .037$), but mother's education was not ($r = 0.03$, $p = .704$). Father's education also correlated with promotion decisions ($r = 0.19$, $p = .027$), but mother's education was not associated with these outcomes ($r = 0.04$, $p = .637$). Despite the high correlation between MacArthur ladder rating of social class growing up (i.e., subjective social class background) and household income growing up ($r = 0.68$, $p < .001$), subjective social class background was correlated with neither hiring and promotion outcomes (rs < 0.08, ps $> .351$) nor the hiring managers' fit and leadership perceptions (rs < 0.08, ps $> .324$). Moreover, in a regression controlling for other potential determinants of hiring manager decisions (i.e., participant demographics, video length, and rater agreement on agency and warmth), household income growing up remained a significant predictor of hiring manager decisions ($\beta = 0.14$, $p = .012$, see Table 4).

Table 4. OLS regression analysis of hiring manager decisions, predicted by household income growing up, demographics, video length, and rater agreement (Study 2).

	Model 1	**Model 2**	**Model 3**	**Model 4**
Intercept (hiring manager hiring decisions)	**3.65***** (0.30)	**3.77***** (0.35)	**2.81***** (0.42)	1.49 (1.23)
Household income growing up	**0.11*** (0.05)	**0.12*** (0.06)	**0.13*** (0.06)	**0.14*** (0.05)
White	--	-0.19 (0.25)	-0.16 (0.24)	-0.11 (0.22)
Female	--	-0.11 (0.21)	-0.08 (0.21)	0.06 (0.20)
Video length (seconds)	--	--	**0.00***** (0.00)	**0.00***** (0.00)
Rater agreement – agency	--	--	--	**6.96***** (1.76)
Rater agreement – warmth	--	--	--	**-5.60***** (1.76)
Observations	140	140	140	140
Adjusted R^2	0.02	0.01	0.11	0.19

Standard errors in parentheses. $^{+}$ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Social class background and nonverbal behavior. I next examined whether working-class students behaved differently during their interviews than upper-class students (Hypothesis 1). As predicted, household income growing up was significantly, positively correlated with a calm demeanor ($r = 0.17$, $p = .040$), lack of submissive demeanor ($r = 0.22$, $p = .008$), smooth and fluent speech ($r = 0.21$, $p = .011$), a confident and factual vocal tone ($r = 0.27$, $p = .001$), and postural flexibility ($r = 0.24$, $p = .004$). It had a marginal relationship with a louder volume ($r = 0.16$, $p = .052$) and an expansive posture ($r = 0.16$, $p = .051$), but no correlation with deliberate gestures or sustained eye contact while speaking (rs < 0.00, ps $> .956$).

Father's education was positively and statistically significantly correlated with precisely the same cues: calm demeanor ($r = 0.20$, $p = .019$), lack of submissive demeanor ($r = 0.30$, $p < .001$), smooth and fluent speech ($r = 0.30$, $p < .001$), a confident

and factual vocal tone ($r = 0.27$, $p = .001$), and postural flexibility ($r = 0.17$, $p = .047$). Interestingly, father's education was a marginally associated with sustained eye contact while speaking ($r = 0.15$, $p = .085$), but showed no relationship with deliberate gestures, a louder volume, or an expansive posture (rs < 0.13, ps > .134). Mother's education had no correlation with any particular nonverbal cues (rs < 0.12, ps > .164).

Social class background and observer attributions. Next, I examined how observers perceived participants (Hypothesis 2). Results are reported in Table 5. I analyzed observer perceptual attributions gathered on Amazon's Mechanical Turk (n = 10 raters per video, or 1,505 raters, U.S. citizens). In short, social class background is significantly correlated with a number of attributions. First, consistent with the findings of Study 1, household income growing up was significantly correlated with agency attributions ($r = 0.17$, $p = .047$), as was father's education ($r = 0.22$, $p = .010$). Mother's education had no relationship with agency attributions ($r = 0.04$, $p = .672$). There was no relationship between warmth attributions and measures of social class background (rs < 0.11, ps = .214).

Table 5. Means, standard deviations, and correlations between measures of social class background and observer perceptual attributions (Study 2).

Variable	***M***	***SD***	**1**	**2**	**3**	**4**	**5**
1 – Ladder growing up	6.33	2.24	--				
2 – Household income growing up	5.22	1.88	0.68***	--			
3 – Father's education	5.18	1.82	0.51***	0.49***	--		
4 – Mother's education	4.76	1.92	0.43***	0.47***	0.52***	--	
5 – Observer agency attributions	4.61	0.73	0.12	0.17*	0.22*	0.04	--
6 – Observer warmth attributions	4.88	0.42	-0.04	0.11	0.08	0.01	0.65***

Note: n = 152 participants. $^{+}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

For a closer look at the relationship between measures of social class growing up, observer perceptual attributions, and particular nonverbal behaviors, see Tables 6 and 7.

Table 6. Means, standard deviations, and correlations between measures of social class background, career advancement outcomes, and index of agentic nonverbal behaviors (Study 2).

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1 – Ladder growing up	6.33	2.24	--									
2 – Household income growing up	5.22	1.88	0.68***	--								
3 – Father's education	5.18	1.82	0.51***	0.49***	--							
4 – Mother's education	4.76	1.92	0.43***	0.47***	0.52***	--						
5 – Hiring decisions	4.21	1.23	0.06	0.17*	0.18*	0.03	--					
6 – Promotion decisions	4.24	1.19	0.08	0.15^{+}	0.19*	0.04	0.96***	--				
7 – Hiring manager perceptions of fit	4.71	1.15	0.08	0.18*	0.20*	0.06	0.92***	0.91***	--			
8 – Hiring manager perceptions of leadership	4.18	0.99	0.03	0.13	0.16^{+}	0.06	0.92***	0.94***	0.90***	--		
9 – Observer agency attributions	4.61	0.73	0.12	0.17*	0.22*	0.04	0.60***	0.63***	0.60***	0.67***	--	
10 – Observer warmth attributions	4.88	0.42	-0.04	0.11	0.08	0.01	0.40***	0.41***	0.34***	0.43***	0.65***	--
11 – Index of agentic nonverbal behaviors	4.69	0.88	0.22**	0.21***	0.24**	0.06	0.51***	0.55***	0.54***	0.59***	0.75***	0.44***

Note: n= 152 participants. $^{+}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table 7. Correlation between household income growing up and agentic nonverbal behaviors, observer attributions (Study 2).

	Zero order *r* with household income growing up	Zero order *r* with observer agentic attributions	Zero order *r* with observer warmth attributions
Calm demeanor	0.17*	0.69***	0.36***
Lack of submissive demeanor	0.22**	0.67***	0.33***
Deliberate gestures	0.00	0.57***	0.45***
Smooth and fluent speech	0.21*	0.73***	0.40***
Sustained eye contact while speaking	0.00	0.44***	0.31***
Confident and factual vocal tone	0.27**	0.77***	0.40***
Louder volume	0.16^{+}	0.50***	0.28***
Postural flexibility	0.24**	0.43***	0.34***
Expansive posture	-0.16^{+}	-0.36***	-0.20*

Mediation analyses. I conducted mediation analyses, examining whether the relationship between social class background and hiring decisions was mediated by observers' attributions (Hypothesis 4). In a 10,000-bootstrap sample mediation model examining the effect of household income growing up (dollar amount) on hiring decisions, agency attributions mediated this relationship, 95% CI [0.002, 0.134]. In a separate 10,000-bootstrap sample mediation model examining the same link between household income growing up and hiring decisions, warmth attributions did not mediate this relationship, 95% CI [-0.016, 0.069]. Therefore, this evidence is consistent with the idea that working-class students were seen as less hirable because they were seen as less agentic.

Second, I examined whether the link between social class background and attributions of agency were mediated by the display of more agentic behaviors (Hypothesis 5). Indeed, an index of nine nonverbal behaviors fully mediated the relationship between household income growing up and agency attributions, 95% CI [0.01, 0.11]. This evidence is consistent with the idea that working-class students were seen as less agentic because they displayed less agentic behavior.

Were hiring decisions biased? Lastly, I analyzed the relationship between social class background and hiring decisions, controlling for the criterion variables of university GPA, an IQ test administered in the course of the study (Cattell & Cattell, 1960), and a test of emotional intelligence administered in the course of the study (Baron-Cohen et. al, 2001) (Hypothesis 6; see Tables 7 and 8). These analyses are important because they speak to possible biases based on social class background: if experienced hiring managers viewed participants from lower social class backgrounds as less hirable or promotable,

even after controlling for cognitive and socioemotional skills, this suggests biases against those from lower social class backgrounds.

Table 8. Partial correlations of social class background and attribution items with hiring decision, controlling for criterion variables.

Correlation of items with hiring decision only	Zero order *r*	Controlling for:		
		University GPA	IQ score	EQ score
Ladder growing up	0.07	0.00	0.03	0.04
Household income growing up	0.18*	0.12	0.14+	0.16+
Father's education	0.18*	0.11	0.15+	0.16+
Mother's education	0.04	0.04	0.04	0.05
Agency attributions	0.60***	0.63***	0.62***	0.62***
Index of agentic nonverbal behaviors	0.50***	0.49***	0.52***	0.51***

Note: n = 152 participants. + $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 9. Partial correlations of social class background and attribution items with promotion decision, controlling for criterion variables.

Correlation of items with promotion decision only	Zero order *r*	Controlling for:		
		University GPA	IQ score	EQ score
Ladder growing up	0.08	0.02	0.05	0.05
Household income growing up	0.15+	0.10	0.12	0.13
Father's education	0.19*	0.13	0.16+	0.17*
Mother's education	0.04	0.03	0.04	0.05
Agency attributions	0.63***	0.65***	0.65***	0.65***
Index of agentic nonverbal behaviors	0.55***	0.55***	0.58***	0.58***

Note: n = 152 participants. + $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

As a demonstration of social class background bias beyond objective ability, the predicted correlation between household income and hiring decisions remained marginal even controlling for IQ (r = 0.14, p = .093) and emotional intelligence (r = 0.16, p = .059); this was also true of father's education controlling for IQ (r = 0.15, p = .072) and emotional intelligence (r = 0.16, p = .059). Interestingly, the correlation between household income / father's education and hiring decision became non-significant when controlling for university GPA ($r_{HH\ income}$ = 0.12, $p_{HH\ income}$ = .166, $r_{father's\ education}$ = 0.11, $p_{father's\ education}$ = .198). However, university GPA is likely to be affected by factors such as parental income and ability to pay for tuition without the student's need to work; those from lower social class backgrounds may be required to work more hours and amass more debt, which may have negative impacts on GPA.

Social class background bias also seemed to extend beyond academic and employment history: the predicted relationship between household income and hiring decisions remained marginally significant, even after controlling for number of business classes the interviewee had taken, and whether or not he or she had had a part-time internship, a full-time internship, or a full-time job (β = 0.10, p = .069).

The role of race and gender. One alternative explanation is that other demographic variables, such as race and gender, might have driven the association between social class and hiring managers' decisions. I thus examined whether race or gender could explain the relationship between social class background (i.e., household income growing up, father's education, or subjective social class growing up) and hiring and promotion decisions. I first found that race and gender did not predict hiring and promotion decisions (rs < 0.09, ps > .292, one-way ANOVA for race, $F(1, 140) = 0.02$, p = .898, η_p^2

= 0.00, one-way ANOVA for gender, $F(1, 140) = 0.61$, $p = .435$, $\eta_p^2 = 0.00$). I also examined whether the relationship between household income growing up and hiring decisions remained significant after controlling for race and gender. Indeed, household income growing up remained the sole significant predictor of hiring decisions ($\beta = 0.12$, $p = .041$) after controlling for race ($\beta = -0.19$, $p = .431$) and gender ($\beta = -0.11$, $p = .604$).

I also found no differences between white and non-white participants in the relationships between social class background and hiring manager decisions. In six interaction analyses between three primary measures of social class background and race (0 = *non-white*, 1 = *white*), none predicted hiring manager decisions. Similarly, I found no interactions in six different analyses that examined three primary measures of social class background and gender (0 = *male*, 1 = *female*).

In Chapter 4, I tested Hypotheses 1-6, through a study in which participants were video-recorded in a mock job interview. I found that Hypothesis 1 was supported: participants from a lower social class background displayed significantly fewer agentic nonverbal behaviors. Hypothesis 2 was also supported: observers attributed participants from a lower social class background less agency. Indeed, these two hypothesis were linked, supporting Hypothesis 5: less-agentic nonverbal cues mediated the relationship between lower social class background and perceptions of lower agency. This led to consequences for participants from lower social class backgrounds, supporting Hypothesis 3: they were less likely to be rated as worthy of hire and promotion. Moreover, my findings supported Hypothesis 4: perceptions of agency mediated the relationship between social class background and these diminished career advancement outcomes. Lastly, supporting Hypothesis 6, these consequences seem to evince a social

class background bias that is above and beyond participants' *actual* ability and intelligence.

Chapter 5: General Discussion

Social class background is a consequential demographic characteristic, but its relationship with behavioral and perceptual processes that govern workplace behaviors and "gatekeeping" interactions (such as interviews) is not yet well-understood. Though social class can change over time, researchers have shown that social class background has a "residue" with powerful implications for adult outcomes, independent of adult social class (Bosma et al., 1999; Galobardes et al., 2004; Miller et al., 2009). I proposed that social class patterns of behavior, which imprint early in life, persist throughout the lifespan (Kish-Gephart & Campbell, 2015) to shape behavior, others' perceptions, and ultimately career advancement outcomes.

Two studies examined the relationship between social class background and career advancement. My results showed a consistent correlation between social class background and career advancement outcomes that started early and endured well into people's careers. Study 1 found that mid-career professionals who had grown up lower in social class earned lower incomes than those who grew up in the upper-class. Study 2 found that students from a lower-class background, who were just beginning their work careers, were seen as less worthy of hire and promotion by professional hiring managers. Together, these findings replicate and extend prior work that has shown intergenerational consistency in social class attainment. They show that individuals from a lower social class background already face limitations to career advancement at the beginning of their careers, appearing less worthy of hire and promotion, even when education level is the

same. Then these limitations endure well into the middle of their careers, when they earn lower incomes than those with upper-class backgrounds.

Moreover, I found that these limitations in career advancement were related to lower levels of agency. Specifically, in Study 1, mid-career professionals from a lower social class background reported engaging in fewer agentic work behaviors, and agentic work behaviors fully mediated the relationship between household income growing up and current household income. In Study 2, diminished hiring and promotion prospects for those of lower social class background were explained by others' perception of them as being less agentic, and from those individuals' lack of agentic nonverbal behaviors during the interview. For example, lower-class students exhibited a more anxious demeanor and showed a less confident vocal tone.

Theoretical contributions

The present research offers several contributions to a nascent literature on the psychology of social class background. First, it extends the small number of studies (Belmi et al., 2019; Pfeffer, 1977; Rivera, 2012; Rivera & Tilscik, 2016) that have demonstrated a link between social class and career advancement outcomes. I extend beyond that pioneering research in multiple ways. Going beyond Belmi et al. (2019), research which found a non-significant relationship between social class and hiring rating (mediated by overconfidence), I demonstrate a direct link between social class background and career advancement outcomes. The mechanism behind this link, for the first time, is shown to be perceptions of agency. I also extend beyond important resume audit studies (Rivera & Tilscik, 2016) to look at real-world outcomes of social class background on career advancement (Study 1) and specify the perceptual mechanisms that

might underlie lower call-back rates for lower-class applicants (Study 2) – again, others' evaluations of individual agency. I extend beyond Pfeffer (1977) by using a more diverse sample of participants (Studies 1 and 2), and a more holistic definition of career advancement that considers position in the organizational hierarchy and power in the organization (Study 1), as well as demonstrating the processes responsible for these effects.

Second, this research examines the effects of social class background on behavioral signatures of agency in the day-to-day workplace or in gateway contexts such as interviews. These signatures were then shown to have an effect on attributional processes important to career advancement (i.e., hiring, promotion). Though past research has suggested that observers may *stereotype* lower-class individuals as less competent and intelligent (Cooper et al., 1975; Darley & Gross, 1983; Fiske et al., 2002), my findings are the first to show that observers actually *see* lower-class individuals as less agentic in dyadic interactions, despite knowing nothing about their social class background. Moreover, my findings are the first to connect these perceptual processes to the diminished career advancement outcomes of those from a lower social class background.

Finally, this research uses a novel lens model approach to help explain the intergenerational effects of social class, regarding the display of agency cues by the individual and the utilization of those cues by others in forming attributions of them. Past research has shown that various forms of status and dominance are linked to cue display in nonverbal behaviors (e.g., Hall et al., 2005; Sapolsky, 2005; Burgoon et al., 2016). My research is the first to investigate lower social class background as a low-status

characteristic which results in reduced displays of agentic nonverbal cues (e.g., deliberate gestures, louder volume). Moreover, I found that an index of nine nonverbal behaviors fully mediated the relationship between household income growing up and agency attributions (Study 2), suggesting that working-class students were seen as less agentic because they actually displayed less agentic behavior.

Limitations

These studies offered support for my theory of agentic behavioral signatures as 1) likely to vary by social class background and 2) likely to play a major role in attributional processes and career advancement outcomes. However, certain limitations also point to a number of directions for future research.

First, because of my research design, I am unable to examine the question of *why* individuals from lower social class backgrounds behave less agentically at work and show fewer agentic nonverbal cues. Past research suggests multiple possible mechanisms: having less confidence (Belmi et al., 2019), feeling a diminished sense of personal control (Kraus et al., 2009), growing up in a more collectivistic culture that puts less emphasis on individual agentic behaviors (Stephens et al., 2014), or even anticipating and avoiding backlash for behaving counterstereotypically for a lower-class person (Phelan et al., 2008). Future research can examine these possible mechanisms to determine the proximate causes for less agentic behavior in a work context; specifying these mechanisms will also enable researchers to design more effective interventions to help individuals from lower social class backgrounds succeed.

Second, my study of mid-career professionals tracked career advancement over time, with these professionals having obtained an education from the same institution,

which may have limited the generalizability of these findings to other contexts. For instance, most of the participants attended a public university, and public universities are more accessible to low-income students than their private college counterparts (Haveman & Smeeding, 2006). Future research should thus study individuals from a more diverse range of schools. Furthermore, my findings are focused on the broadly-accepted conceptualization of social class in the United States, which may limit generalizability to other countries' conceptualizations of class such as India's caste system (Blunt, 2010) or Britain's remnants of titled aristocracy (Cannadine, 2000). Future research must examine perceptions of class in other countries, and ways that social class background is more or less predictive of career advancement outcomes; researching class in other cultures may also help to identify how to reduce the strength of this relationship and increase social mobility.

Third, the registrar data I used to independently verify participants' self-reports of their household income growing up was limited to just over half the sample; however, I am reassured of the relative accuracy of these reports by the registrar data I had (53% of total participants) correlating highly with self-reported household income growing up (r = 0.69, $p < .001$). Future research may take a more longitudinal approach to follow current high school students (whose current social class is observable) through higher education institutions and then advancement in early-to-mid careers. More contemporaneous measurements of social class background will allow for more precise specifications of its relationship to career advancement outcomes.

Fourth, I limited my exploration of nonverbal cues to agentic behaviors in Study 2, excluding warmth behaviors. I did this for two reasons: in Study 1, I found no

difference by social class background in self- or peer-reported warmth behaviors in the workplace; in Study 2, I found no difference by social class background in observer-rated warmth attributions. As outlined in the introduction, some research suggests that working-class individuals will display *more* warmth in interpersonal interactions, while other research suggests that people from a lower-class background will display *fewer* warmth cues. I found no evidence to suggest different workplace warmth behaviors based on social class background; however, much more research is needed to expand the number of warmth behaviors investigated and also to consider non-work contexts.

Future Directions

Beyond limitations to the present research, my findings also suggest a number of subsequent or related research questions. First, I did not examine how observers' own class history plays into their perceptions of targets, an effect that may be substantial. Future research may consider the dynamics of cross-class perception and interaction (for more, see Côté, Kraus, Carpenter, Piff, Beermann, & Keltner, 2017) and how the social class background of an observer shapes (or fails to alter) their perception of targets with shared or divergent social class backgrounds. This is particularly important because of previously alluded-to "gateway" interactions. Those from lower social class backgrounds who seek to advance their careers will engage more frequently in cross-class "gateway" interactions (such as a final-round interview with a wealthy law firm partner) than will their counterparts from a higher social class background. Past research suggests that cross-class interactions, like other forms of intergroup contact, will be stress-inducing (Dovidio et al., 1997), but perhaps even moreso for those of a lower social class

background who are both able to and may seek to conceal the stigma of their upbringing (Goffman, 1963).

Second, future research should more closely examine how these perceptual effects endure even after controlling for objective indicators of ability and performance. That is, we found preliminary evidence that lower class are perceived as less hirable even after controlling for things like intelligence, emotional acuity, number of business classes taken, and work history. However, an even more conservative test of this hypothesis would be to control for tests that more directly reflect performance or potential performance at work. For example, one could control for ratings of pre-hire work samples (e.g., scores on software engineers' coding interviews) or ratings of on-the-job performance and show that lower class people still have worse career advancement over time. This would provide strong and convincing evidence that the perceptual biases against those lower in social class background are generally not supported by objective measures of ability.

Third, beyond career advancement outcomes of hire and promotion, one could also examine other consequences of less-agentic behavior by those from lower social class backgrounds. For instance, they may be less likely to be seen as leaders. Ironically, their lack of assertiveness could actually make individuals from lower social class backgrounds *better* leaders, because they are less likely to engage in the command-and-control leadership style that organizations often favor in promotion but that is generally ineffective (Anderson & Brown, 2010). Other consequences might include forming weaker social networks, "choking" in critical evaluative settings (e.g., major presentations), or failing to fight for career-boosting projects (see Belmi & Laurin, 2016).

Fourth, despite the present research findings, it is easy to conjure counter-examples of individuals from a lower social class background who overcame great odds to become independently wealthy and powerful. Future research could isolate these unique cases and consider multiple aspects of this status incongruence: for example, whether lower-class individuals who attain power (perhaps by demonstrating exceptional task competence, and in spite of lack of agency) then become more agentic as a result of the power boost (Keltner, Gruenfeld, & Anderson, 2003) with an effect size that overcomes the limitations of their background. As another example, researchers could consider whether, or at what point, individuals from a lower-class background who earn a high income escape their childhood "scarcity mindset" (Griskevicius et al., 2011).

Finally, the broad construct of "residue" may prove generalizable in future diversity research. Many professionals encounter some form of discrimination early in their careers, which may result in them feeling understandably defensive or distrustful, experiencing impostor syndrome, or otherwise distancing themselves from the institution or group. Later on, stereotyping could abate – through the accumulation of power, demonstration of competence, exit from the firm, or numerous other mechanisms – but the *feeling* of discrimination may linger. This feeling could prove maladaptive in new circumstances where structural or interpersonal discrimination are less likely, or less blatant. For instance, distancing oneself from a discriminatory group is an adaptive response to active stereotyping, but, if the residue of discrimination carries through an individual's career to new situation, expecting similar treatment and distancing oneself from *all* groups could be a maladaptive response.

Practical Implications and Conclusion

The results of this study offered a number of critical and practical insights as to how social class background replicates from generation to generation. Specifically, the study of mid-career professionals suggested that workers from a low social class background engage in fewer agentic workplace behaviors. With that in mind, organizations would benefit from interventions that targets individuals' behavioral signatures. For example, managers might offer concrete examples of successful agentic behavior, which may attenuate variation in employees' behavior driven by their background social class, in essence creating a more "level playing field." Furthermore, the study of interviewees suggested that externalized behavioral signatures of low agency drive diminished hiring and promotion outcomes for those of a low social class background, regardless of true ability. Accordingly, organizations can make hiring managers aware of potential biases against those from lower-class backgrounds, and offer tools to reduce this bias, such as guidelines for cross-class interaction, and rubrics to increase standardization of hiring and promotion judgments. Second, individuals from lower social class backgrounds can be made aware of this tendency toward low-agency behaviors, and consciously attend to their nonverbal behaviors when being evaluated (voluminous research shows that it can be changed or controlled, see Ambady & Weisbuch, 2010, for a review), so as to mitigate the effects of this bias.

Inequality based on social class background is simultaneously a societal challenge, organizational opportunity, and individual source of difference in self-perception and interpersonal interactions. I found that agentic work behavior and behavioral signatures vary by social class background and also play a major role in

attributional processes and career advancement outcomes. Over time and on a macro level, these signatures can contribute to perpetuation of inequality and limitations on socioeconomic mobility. This dissertation study delved deep into the role of class-based behavioral signatures in career advancement processes, as scholarly interest in the psychology of social class grows, and as people from all social class stations strive to advance their careers.

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Appendices

Appendix A: Study 1 Participant Communications

Note: Two emails, from one of two senders (i.e., Oliver John, but not Cameron Anderson) are provided for illustrative purposes. The full set of email communications is available upon request from the author.

Email 1: Initial contact

Hi ${e://Field/FirstName}!

This is a note from Oliver John, a professor in the psychology department at UC Berkeley. Years ago, when you took a psychology class at Berkeley, you participated in research studies for course credit. In case you don't remember or did not take my personality psychology class, here's a picture of me from back then:

Recently, as I was going through hundreds of old files and records to prepare for the move out of Tolman Hall: I found we still have some of the surveys you completed for research participation, like the NEO PI-R personality inventory. I thought, what if we went back to these old records, to find out what you were like then and compare it to what your life is like now? Thus the idea and this project were born: my colleague Prof. Cameron Anderson and I have decided to undertake a longitudinal follow-up of Berkeley students, a project we call ***Berkeley and Beyond: Then and Now***. We hope to learn how students navigate life after Berkeley and how the University could help prepare you better for the tasks and challenges of adulthood. That's why we are contacting you (and your classmates) today.

We invite you to collaborate with us on this amazing project. What's in it for you? If you participate in this unique opportunity, you could find out what your personality was like back then, during your college days, based on my old records. If you decide to participate today and donate 15 minutes of your time, you can find out what your personality is like today and how it has changed in the intervening years.

The survey is short (approx. 15 min), and we will send you an individualized feedback report that tells you:

- Your personality profile from when it was assessed in college
- Your current personality profile
- How your profile has changed over time

If you participate, you'll help us better understand how our personalities shape our work experiences and career decisions, and how those experiences in the workplace, in turn, shape the way our personality develops.

We would also like to hear from a couple of your coworkers. People sometimes have different perspectives on their workplace. And as researchers, we are required to get one other data source: someone who knows you at work and can also speak to your function and place in your work organization (e.g., where you work, your position in the company, and so forth). This should only take them about 5-8 minutes to complete. Your coworkers' answers will be completely confidential, and will not be shared with you or with anyone else. Their ratings will be used solely for research purposes – specifically, to have another source of background information about you at work.

Here is the link to the survey: ${l://ThreeSixtyLink?d=Click here to complete your brief report}
And the login info: ${e://Field/LoginInfo}

Feel free to email us at c.anderson@berkeley.edu (Professor Cameron Anderson, my collaborator in this work) if you have any questions or concerns.

I really hope you will join the ***Berkeley and Beyond Project*** and take the brief survey. I also hope you're doing well!

Best wishes,
Oliver
Oliver P. John
Professor and Research Psychologist

(Below is a more recent photo… still the same guy but now with a lot of gray hair)

Email 2: Financial incentive

Hello ${e://Field/FirstName}!

Thank you for opening this invitation to participate in the ***Berkeley and Beyond*** Study! We realize you must be very busy. As a token of gratitude for your time, we would now like to offer you a **$25 Amazon gift card** for participating in this project. This would involve completing your self-evaluations and having two work colleagues evaluate you (your colleagues will also receive a $12 Amazon gift card for their 5-8 minute survey). This is **in addition to the feedback report** that compares your personality from when you were in college to your personality today!

If you're interested in participating, I'll paste my original invite below. This will provide more information about the project and the link you can click to complete.

Thanks and again, hope to hear from you soon,
Professors John and Anderson

Here is the original email:
<Paste Email 1 above>

Appendix B: Study 1 Nomination Instructions

What's the purpose?
People sometimes have different perspectives on their workplace. And as researchers, we are

required to get one other data source: someone who knows you at work and can also speak to your function and place in your work organization (e.g., including where you work, your position in the company, and so forth). We ask you to nominate below at least two coworkers from your organization to provide information about you; if you can nominate more, terrific! We have provided space for up to 10 coworkers. **Please nominate a minimum of 2 and a maximum of 10 coworkers.**

How long will it take my coworkers?
This should only take them about 5-8 minutes to complete. Your coworkers' answers will be completely confidential, and will not be shared with you or with anyone else. Their ratings will be used solely for research purposes – to have another source of background information about you at work. Their ratings will not be reflected in your feedback report.

Who should I nominate?
When you are trying to think of coworkers to nominate, these can be peers or colleagues in your office that you work with, your supervisor or boss, or people that you supervise. These people should know you well enough to provide background information about you. After we have received your and your coworkers' surveys, we will send you your individualized feedback report. *Note*: If you're currently unemployed, please nominate evaluators from your most recent role and / or organization.

Giving a heads up to my coworkers
Finally, it might help for you to email each of these coworkers and give them a "heads up" that we will be contacting them. Otherwise, our email to them might seem like "spam" or land in their junk folder. Below is a script you can send them.

***

Here is our suggested script to invite your peer informants:

Hello ____

I wanted to give you a "heads up" that you will receive an email from Professors Oliver John and Cameron Anderson (via the Qualtrics 360 system, noreply@qemailserver.com) at the University of California, Berkeley. I am currently participating in a research project called ***Berkeley and Beyond***, which they are leading. The project follows up with former students and looks at what has happened in their lives since their university days.

As part of my participation in the project, I am hoping you can take 5-8 minutes to complete a brief survey about me. Your responses will be entirely anonymous and confidential; they will not be shared with me or anyone else, but will be used solely for research purposes.

Please watch out for an email from them and make sure their invitation does not land in your "junk" folder.

If you have any questions feel free to email Professors John and Anderson (you can reach them directly via c.anderson@berkeley.edu), and thanks so much for your help on this project!

***

The spaces for nominating your coworkers are below. The Qualtrics 360 system calls them "evaluators" but that just refers to the coworkers you would like to nominate.

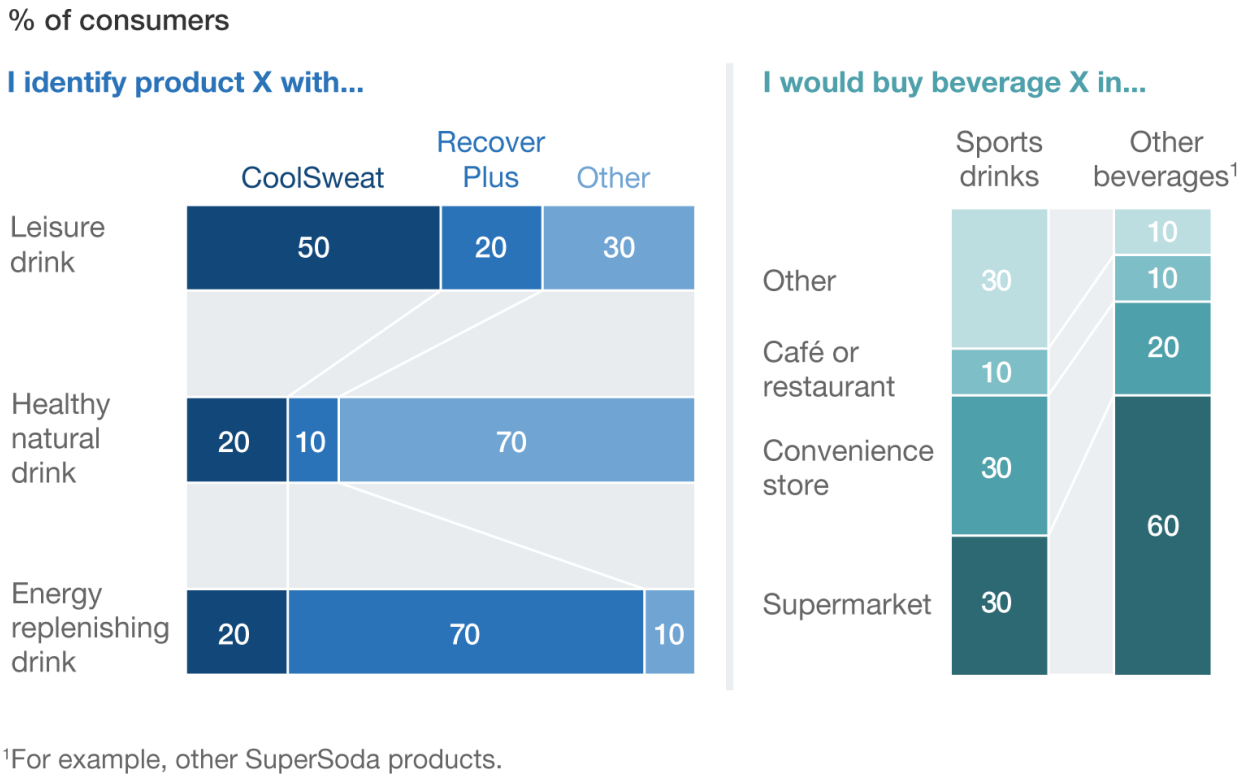
Appendix C: Study 1 Additional Variables Collected

I asked participants about their job status: "Are you responding to these questions about a current job (currently employed) or a previous job (currently unemployed)?" (1 = *current job (currently employed)*, 2 = *previous job (currently unemployed)*).

Focal participants and their peer raters were asked to assess their organization's culture on twelve descriptive dimensions, adapted from Chatman and Spataro (2005). Specifically, they rated whether the organization is collaborative, political, suspicious, criticizing, narcissistic, people-oriented, mean, supportive, aggressive, selfish, harsh, or cooperative (1 = *Extremely uncharacteristic,* 7 = *Extremely characteristic*). The four positively-valenced items correlated with each other, and thus were combined into an index of positive culture ($\alpha = 0.83$). The eight negatively-valenced items also correlated with each other and were thus combined into an index of negative culture ($\alpha = 0.87$). The aggregate measures of positive and negative cultures were negatively correlated ($r = -0.44$, $p < .001$), but not highly enough to combine them into a single measure of positive-negative culture.

I plan to measure job title prestige (to be coded by a research assistant blind to hypothesis) in future iterations of this paper.

Appendix D: Study 2 Case Study Graphs



[1]For example, other SuperSoda products.

Appendix E: Study 2 Additional Variables Collected

Procedure and Materials: Pre-Task Controls. To control for objective intelligence, I asked participants to self-report their high school GPA (on a four-point scale), GPA for any business courses taken (on a four-point scale), verbal SAT score (out of 800), and math SAT score (out of 800).

Procedure and Materials: Post-Task Survey. In the post-task survey, participants were asked about their attempts at self-presentation and the study difficulty, in order to gauge effort and desire to perform well: "How important was it to convey the best possible impression to your interviewer?" (1 = *Not at all important*, 7 = *Extremely important*); "How difficult was it to participate in the study today? (1 = *Not at all difficult*; 7 = *Extremely difficult*); and "How much

effort did it take to participate in the study today?" (1 = *No effort at all*; 7 = *Extreme effort*). Then, participants filled out the Ten-Item Personality Inventory (Gosling, Rentfow & Swann, 2003).

Also in the post-task survey, after filling out the MacArthur ladder exercise, participants were asked to explain in 1-2 sentences why they chose that rung on the ladder. They reported their family's household income last year (in addition to family's household income growing up which is reported in the main text).

Finally, participants filled out two questions to control for previous experiences with case interviews: "Are you a member of any consulting-related extracurricular groups?" (*yes* or *no*) and "Do you have any experience with case interview methodology?" (1 = *I have never practiced and have no prior knowledge of case interviews,* 7 = *I am extremely familiar with the case interview method and have practiced more than 5 case interviews*).

Procedure and Materials: Hiring Manager Ratings. Hiring managers were asked to judge the potential fit of an interviewee: "In the interview you just viewed, how well do you think the interviewee would 'fit in' in a typical company or organization - for example, a consulting firm, bank, high-tech firm, etc.?" (1 = *Not well at all*, 7 = *Extremely well*). Hiring managers were also asked to rate their agreement with the following items about the interviewee's leadership qualities (1 = *Strongly disagree*, 7 = *Strongly agree*): "The interviewee has strong leadership skills" ($\alpha = 0.75$, ICC2 = 0.57) and "The interviewee would make a good leader" ($\alpha = 0.65$, ICC2 = 0.64).

In order to gauge the accuracy of perceptions, hiring managers were asked a series of questions to guess the interviewee's university GPA (2.0-4.0) and relative intelligence and social skills (ranging from 0 = *Worse than 99% of people* to 100 = *Better than 99% of people*): "How

do you think the interviewee compares to other participants in this study in terms of general [intelligence / ability to read others' emotions]?" Lastly, hiring managers guessed the social class background of interviewees on the MacArthur ladder (1 = *Lowest rung*, 10 = *Highest rung*).

Procedure and Materials: Observer Trait Inferences. Below the videos, as an exploratory measure, participants were asked "what are the top 3 words (adjectives, e.g., funny, stylish) you would use to describe this person?"

Appendix F: Study 2 Appendix Tables

Appendix Table A1. Means, standard deviations, and correlations between measures of social class background and career advancement outcomes as judged by undergraduate research assistants (Study 2).

Variable	*M*	*SD*	1	2	3	4	5	6	7
1 – Ladder growing up	6.33	2.24	--						
2 – Household income growing up	5.22	1.88	0.68***	--					
3 – Father's education	5.18	1.82	0.51***	0.49***	--				
4 – Mother's education	4.76	1.92	0.43***	0.47***	0.52***	--			
5 – Research assistant hiring decisions	4.84	1.78	0.18*	0.21*	0.24**	0.19*	--		
6 – Research assistant promotion decisions	4.05	1.70	0.11	0.12	0.20*	0.08	0.78***	--	
7 – Research assistant perceptions of fit	5.26	1.20	0.10	0.18*	0.21*	0.18*	0.69***	0.65***	--
8 – Research assistant perceptions of leadership	4.30	1.58	0.15^{+}	0.16^{+}	0.19*	0.13	0.75***	0.80***	0.70***

Note: n = 152 participants. $^{+}$ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Appendix Table A2. Inter-rater reliability (ICC2) for each strength attribution and overall agentic dimension (Study 1).

Attribution	*M*	*SD*	Self-peer inter-rater reliability	Between-peer inter-rater reliability
Is highly effective at his / her job	6.31	0.94	0.23	0.50
Perseveres until the task is finished	6.24	1.05	0.26	0.37
Is self-confident	5.72	1.30	0.51	0.58
Makes important contributions to the team's and organization's success	6.38	0.91	0.28	0.39
Makes things happen and gets things done for the organization	5.85	1.20	0.47	0.38
Tackles his / her work with great energy or enthusiasm	5.99	1.14	0.24	0.40
Is highly competent	6.44	0.92	0.10	0.38
Has a great deal of talent	6.55	0.78	-0.43	0.40
Seeks to occupy positions of authority	4.12	1.73	0.57	0.49
Uses connections and networks to make things happen	5.65	1.35	0.46	0.38
Builds alliances with influential people	5.43	1.43	0.52	0.47
Has a knack for gaining control over important resources (e.g., projects, budgets, or roles)	4.61	1.63	0.60	0.48
Spends a lot of time and effort networking with others	5.07	1.53	0.44	0.40
Is assertive	5.27	1.40	0.64	0.56
Wants to have influence over important decisions	4.90	1.56	0.44	0.52
Uses organizational politics effectively to get things done	4.57	1.69	0.52	0.43
Is politically savvy	5.11	1.46	0.34	0.52
Is deferential, particularly to those with authority (R)	3.65	1.77	0.28	0.10
Is nervous most of the time (R)	5.84	1.45	0.51	0.40
Can seem nervous or timid in important work situations, like performance reviews or presentations (R)	5.46	1.62	0.54	0.41
Overall agnetic dimension	**5.46**	**0.76**	**0.57**	**0.59**

Note: Means and SDs reported are for external evaluators only and do not include the self.

Appendix Table A3. Inter-rater reliability (ICC2) for each warmth attribution and overall warmth dimension (Study 1).

Attribution	***M***	***SD***	**Self-peer inter-rater reliability**	**Between-peer inter-rater reliability**
Cares about others' well-being	6.32	1.04	0.48	0.39
Is liked by others	6.34	0.94	0.37	0.50
Is considerate and kind to almost everyone	6.27	1.10	0.51	0.37
Is very trustworthy	6.47	0.95	-0.08	0.24
Has developed strong relationships with others at work	6.05	1.13	0.52	0.46
Is good at sensing what other people are thinking and feeling	5.28	1.37	0.49	0.49
Has good relationships with coworkers	6.28	1.03	0.38	0.41
Contributes positively to the organization's culture	6.21	1.05	0.33	0.35
Fits well into the organization's culture	5.91	1.28	0.55	0.38
Overall warmth dimension	**6.13**	**0.84**	**0.52**	**0.50**

Note: Means and SDs reported are for external evaluators only and do not include the self.

Appendix Table A4. Inter-rater reliability (ICC2) for each strength attribution and overall agentic dimension (Study 2).

Attribution	***M***	***SD***	**Inter-rater reliability**
Competent	5.34	1.38	0.56
Intelligent	5.47	1.25	0.54
Skilled	5.03	1.34	0.60
Effective	4.91	1.47	0.61
Strong leadership skills	4.07	1.61	0.69
Would make a good leader	4.17	1.62	0.68
Self-assured	4.38	1.67	0.71
Assertive	3.86	1.64	0.67
Firm	3.87	1.53	0.65
Dedicated	5.07	1.35	0.56
Hard-working	5.23	1.31	0.59
Ambitious	4.79	1.48	0.62
Driven	4.81	1.48	0.67
Motivated	5.10	1.41	0.59
Shy (R)	4.49	1.84	0.74
Timid (R)	4.42	1.88	0.73
Meek (R)	4.55	1.78	0.65
Anxious (R)	4.36	1.85	0.67
Nervous (R)	4.03	1.92	0.74
Awkward (R)	4.52	1.87	0.66
Unconfident (R)	4.70	1.97	0.71
Overall agentic dimension	**4.63**	**1.22**	**0.78**

Appendix Table A5. Inter-rater reliability (ICC2) for each warmth attribution and overall warmth dimension (Study 2).

Attribution	***M***	***SD***	**Inter-rater reliability**
Interpersonally skilled	4.61	1.67	0.60
Emotionally intelligent	4.83	1.34	0.35
Friendly	5.08	1.31	0.51
Kind	4.88	1.26	0.38
Honest	5.30	1.19	0.28
Trustworthy	5.07	1.24	0.23
Helpful	4.99	1.30	0.40
Generous	4.28	1.29	0.21
Overall warmth dimension	**4.88**	**1.00**	**0.45**