Psychological Science OnlineFirst, published on October 3, 2016 as doi:10.1177/0956797616667721

Research Article

Psychological Science
1–11

DOI: 10.1177/0956797616667721
pss.sagepub.com

Social Class and the Motivational Relevance of Other Human Beings: Evidence From Visual Attention

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Abstract
We theorize that people's social class affects their appraisals of others' *motivational relevance*—the degree to which others are seen as potentially rewarding, threatening, or otherwise worth attending to. Supporting this account, three studies indicate that social classes differ in the amount of attention their members direct toward other human beings. In Study 1, wearable technology was used to film the visual fields of pedestrians on city streets; higher-class participants looked less at other people than did lower-class participants. In Studies 2a and 2b, participants' eye movements were tracked while they viewed street scenes; higher class was associated with reduced attention to people in the images. In Study 3, a change-detection procedure assessed the degree to which human faces spontaneously attract visual attention; faces proved less effective at drawing the attention of high-class than low-class participants, which implies that class affects spontaneous relevance appraisals. The measurement and conceptualization of social class are discussed.

Keywords
visual attention, culture, social class, social orientation, open data, open materials

Received 3/9/16; Revision accepted 8/15/16

Despite a surge of interest in the psychology of social class (see Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012), there is little consensus as to how class itself should be conceptualized and measured (APA Task Force on Socioeconomic Status, 2007; Diemer, Mistry, Wadsworth, López, & Reimers, 2013). Recently, however, researchers have unified around a cultural conception of social class, according to which classes are groups characterized by distinct norms, values, and self-construals (Grossmann & Varnum, 2011; Kraus, Piff, & Keltner, 2011; Stephens, Markus, & Townsend, 2007). A cultural analysis of social class implies that membership in a class group can shape cognitive processes in fundamental ways (Bourdieu, 1986; Kitayama & Uskul, 2011; Markus & Kitayama, 1991).

The present article explores the influence of social class on individuals' social-cognitive functioning. We posit that people's class affects their appraisals of others' *motivational relevance*—the degree to which others are seen as potentially rewarding, threatening, or otherwise worth paying attention to (Lang, Bradley, & Cuthbert, 1997). Supporting this account, the results of the present studies demonstrate that lower-class perceivers devote more visual attention to other people than do higher-class perceivers (Studies 1 and 2). Consistent with the notion that culture affects cognition at the most basic levels (Nisbett, 2003), our findings show that class predicts spontaneous processes of attentional selection (Study 3). As a secondary goal, we seek to promote clarity in the measurement of social-class cultures, arguing that individuals' class-group category (e.g., working class) predicts attention better than do other constructs (e.g., subjective social status).

Culture, Cognition, and Social Class

Interdependent cultures emphasize harmony and connection, whereas independent cultures emphasize self-expression

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and autonomy (Markus & Kitayama, 1991). Moreover, interdependent and independent values lead to distinct cognitive styles (Varnum, Grossmann, Kitayama, & Nisbett, 2010). Members of Western cultures tend to process information analytically (e.g., disregarding context and focusing on a single aspect of a stimulus), while East Asians tend to process information holistically (e.g., attending to context and focusing on relational information). Applying a cultural analysis to social class, researchers have found that classes, too, differ in terms of social orientation and, correspondingly, cognitive style. Whereas working-class individuals tend to construe themselves in interdependent terms and exhibit a more holistic cognitive style, members of the middle class tend to have an independent self-concept and analytic cognitive style (Grossmann & Varnum, 2011; Stephens et al., 2007).

Given the existence of class differences in domain-general cognitive processes, we surmised that social class might affect social cognition in ways at least as striking. Specifically, we propose that individuals from higher (and thus more independent) classes regard other people as less motivationally relevant (Lang et al., 1997) than do members of lower classes. Consistent with this idea, studies have shown that social class predicts perceivers' social attunement and sensitivity. Compared with members of higher classes, members of lower classes feel more compassion for others' suffering (Stellar, Manzo, Kraus, & Keltner, 2012), respond to perceptions of chaos by prioritizing community instead of material wealth (Piff, Stancato, Martinez, Kraus, & Keltner, 2012), and display more engagement cues during interactions (Kraus & Keltner, 2009). These findings may reflect not just the momentary activation of relevant values and norms, but also overlearned cultural defaults in the appraisal of other people's motivational relevance. Thus, we propose that social classes differ in their relevance appraisals even at early stages of social-information processing. The arena in which we tested these claims is one closely tied to the construct of motivational relevance: visual attention.

Motivational Relevance and Visual Attention

Organisms must engage in selective attention to successfully navigate the environment. Attentional selection, in turn, is informed by appraisals of nearby objects' motivational relevance—or their assumed potential to advance or thwart the perceiver's goals (Brosch & Van Bavel, 2012; Lang et al., 1997). If we are correct that members of lower social classes regard other people as more relevant than do higher-class perceivers, then lower-class individuals should spend more time looking at other people in the immediate environment. Studies 1, 2a, and 2b tested this hypothesis.

The proposed class difference in visual attention need not reflect perceivers' conscious appraisals of relevance or deliberate attempts to focus on (or ignore) other people. Indeed, the human visual system rapidly and preconsciously distinguishes between inanimate objects and social stimuli, such as human faces and bodies (Fletcher-Watson, Findlay, Leekam, & Benson, 2008). The brain's capacity to quickly and effortlessly distinguish social from nonsocial stimuli opens the door for culture to influence social-cognitive responses that occur outside of conscious control (e.g., neural signals indicative of empathy; Varnum, Blais, Hampton, & Brewer, 2015). We therefore sought to test the notion that social classes differ in the extent to which other human beings act as attentional cues (Pashler & Sutherland, 1998) that spontaneously summon visual attention. Study 3 tested this hypothesis.

Measuring Social Class

Although individuals' class-group membership can, in principle, be assessed using any number of indicators, such as income (e.g., Duncan & Petersen, 2001), education (e.g., Stephens et al., 2007), occupational prestige (e.g., Nakao & Treas, 1994), and self-perceived socioeconomic status (subjective SES; e.g., Piff, Stancato, Côté, Mendoza-Denton, & Keltner, 2012), Americans regard an array of class *categories* as meaningful and can tell researchers which they belong to (Jackman & Jackman, 1983). We venture that if class is culture, and culture is a group phenomenon, then group-based self-report measures of social class are a particularly promising tool for research. We further suspect that popular measures of social class (such as the subjective-SES ladder; Adler, Epel, Castellazzo, & Ickovics, 2000) are at best distant proxies for class culture—just as hair length is a distant proxy for gender—and may be tainted by within-groups individual differences. Indeed, variables that distinguish cultural groups often lack analogous psychological correlates within cultures (Na et al., 2010); thus, researchers may lose statistical power when they forgo group-level measures (such as self-reported social class) in favor of measures that mix between- and within-groups variance. Because we measured multiple class indicators across studies, we were able to empirically assess our expectation that a group-based measure of social class will best predict patterns of visual attention.

Study 1

Participants

Seventy-one pedestrians were recruited from two locations in New York City. An a priori decision was made not to analyze data from participants unfamiliar with the U.S. class system; thus, we excluded non-U.S. citizens who had lived in New York for less than 2 years (7 participants). Three additional participants' were excluded—1 because of a technical malfunction, 1 for leaving the primary measure of social class blank, and 1 for failing to follow the experimenter's instructions. (The results remain substantively unchanged if all the initially recruited participants are included in the analyses.) The final sample consisted of 61 people (53 males, 8 females) between the ages of 18 and 50 years (M = 26.66, SD = 6.94). Thirty-two participants identified as White, 9 as African American, 8 as Latin American, and 4 as Asian American, with 8 participants specifying another ethnicity or declining to answer the question. Participants received no compensation for taking part in the study. The sample size was determined by the number of participants that could be run before the end of the academic term.

Materials and procedure

The study was introduced to participants as a test of Google Glass—an electronic device that positions a small video camera and head-up display near the wearer's right eye (https://developers.google.com/glass/). Participants were asked to walk approximately one block while the Glass recorded video from their perspective; the mean walk duration was 58.50 s (SD = 11.59 s). During the session, participants were instructed to focus on whatever captured their attention or interest, and to do so by turning their heads in the direction of their gaze. A special application (VideoBlack; Martín, 2014) recorded video without displaying anything on the head-up display. The experimenter remained silent and walked several paces behind participants.

After recording their video, participants filled out a questionnaire containing a group-based measure of social class that has been shown to capture intuitively meaningful class distinctions in the United States (Jackman & Jackman, 1983). This question read as follows: "People talk about social classes such as the poor, the working class, the middle class, the upper-middle class, and the upper class. Which of these classes would you say you belong to?" Participants' selections were converted to an ordinal variable ranging from 1 (*poor*) to 5 (*upper class*). Participants also specified their current annual income range and highest level of educational attainment. The questionnaire also included a "ladder" measure of subjective SES, which asked participants to rate their perceived socioeconomic standing on a scale from 1 (*bottom rung*) to 10 (*top rung*; Adler et al., 2000). Several other items were included for exploratory purposes and will not be discussed here (for the full questionnaire, see Fig. S1 in the Supplemental Material available online). For the theoretical reasons discussed in the introduction, our analyses centered on the group-based measure of social class.

Results

Three participants identified as poor, 16 as working class, 19 as middle class, 21 as upper-middle class, and 2 as upper class. Participant gender did not moderate any observed effects and is therefore omitted from the reported analyses.

Six independent coders were trained to identify participants' *social gazes*—glances toward other people—in the Google Glass videos. All coders were blind to participants' social class, ethnicity, and other demographics. Coders were instructed to pinpoint gross movements, in which participants turned their heads or bodies to follow people they passed, and to record the duration of each such gaze in seconds. Interrater reliability for participants' total number of social gazes and mean gaze length were adequate, with average intraclass correlations of .86 and .72, respectively (Cicchetti, 1994). (Raw means for social-gaze duration are given in Fig. S2 in the Supplemental Material.)

Because participants' social class was confounded with their ethnicity—all ethnicities except Asian American reported lower social class than Whites—we adjusted for ethnicity in our analyses. Negative binomial regression, appropriate for count variables, yielded no significant relationship between participants' social-class self-categorization and their total number of social gazes (b = 0.129, SE = 0.086, 95% confidence interval, or CI = [−0.039, 0.297], z = 1.50, p = .133). However, ordinary least squares regression revealed that self-categorization into a higher social class was associated with significantly shorter social gazes (b = −0.113, SE = 0.046, 95% CI = [−0.205, −0.020], β = −0.332, t = −2.45, p = .018). (Full regression results are shown in Tables S1 and S2 in the Supplemental Material.) Thus, while higher- and lower-class participants did not differ in their total number of social gazes—perhaps because navigating the street required all participants, regardless of class, to monitor the location of other people—higher-class participants' gazes were reliably shorter.

Discussion

Study 1 provides preliminary evidence that lower social class is associated with greater visual attention to people in everyday contexts and, by extension, that lower-class individuals find other people more motivationally relevant than do their higher-class counterparts. While informative, the use of Google Glass to track individuals' head movements provided an inexact measure of visual attention. Therefore, in Studies 2a and 2b, we utilized a more precise index of individuals' attentional habits when observing everyday scenes. In these studies, participants viewed photographs of city streets in private while their looking behavior was recorded using an eye-tracking system.

Study 2

Participants

Seventy-seven undergraduates at New York University were recruited for Study 2a. One participant was excluded from analysis because of missing eye-tracking data, which yielded a final sample of 76 participants (18 males, 58 females) between the ages of 18 and 22 years (M = 19.43, SD = 1.25); 19 participants identified as White, 3 as African American, 17 as Latin American, and 26 as Asian American, with 11 participants specifying another ethnicity or declining to answer the question.

Eighty-six undergraduates were originally recruited for Study 2b, but 4 of these individuals correctly guessed our hypothesis in debriefing and were excluded from analysis. (These exclusions did not substantively change our results.) Thus, the final sample in Study 2b consisted of 82 participants (24 males, 58 females) between the ages of 18 and 22 years (M = 19.41, SD = 1.00); 33 participants identified as White, 4 as African American, 10 as Latin American, and 27 as Asian American, with 8 participants specifying another ethnicity or declining to answer the question. In both studies, participants received course credit for completing the study, and sample sizes were determined by the number of participants that could be run before the end of the academic term.

Materials and procedure

Participants were seated at a desk containing a computer monitor and an EyeLink 1000 eye-tracking system (SR Research, Kanata, Ontario, Canada). Participants placed their heads on a chin rest and, after a short calibration procedure, viewed a series of street scenes. Each scene remained on the screen for 7 s. Studies 2a and 2b differed only in terms of the range of street scenes participants viewed. In Study 2a, the stimuli consisted of 41 randomly ordered photographs of New York City. These same photographs were used in Study 2b, along with 41 images of San Francisco and 41 images of London; stimuli were grouped into blocks containing randomly ordered images from one city, and these blocks were presented in random order (for sample images, see Fig. 1 and also Figs. S3–S5 in the Supplemental Material). The photos, taken from Google Street View, were chosen to provide a broad sampling of environments and included a diverse set of people (e.g., construction workers, business people, and homeless people) and things (e.g., cars, trees, and stores). These regions were marked as "interest areas," fixations on which were recorded and timed by the eye-tracking software; other, more diffuse features of the images, such as asphalt and the sky, were not isolated for analysis. Participants were instructed to imagine that they were walking down the street observing their surroundings and to look at whatever captured their attention.

Fig. 1. Example of a New York City street scene used in Studies 2a and 2b. Image © 2014 by Google.

After viewing the street scenes, participants completed the group-based measure of social class used in Study 1 (Jackman & Jackman, 1983), questions concerning their own and their parents' educational attainment and income, the subjective-SES ladder (Adler et al., 2000), and scale measures of their current and childhood SES (Mittal & Griskevicius, 2014). A number of additional measures, included for exploratory purposes, were administered after our primary predictors and will not be discussed here. As in the previous study, our analyses centered on the group-based measure of social class.

Results

In Study 2a, 19 participants identified as working class, 27 as middle class, 27 as upper-middle class, and 3 as upper class on our group-based class measure (Jackman & Jackman, 1983). In Study 2b, 1 participant identified as poor, 10 as working class, 32 as middle class, 37 as upper-middle class, and 2 as upper class. Participant gender did not moderate the observed effects in either study and is therefore omitted from the reported analyses.

The dependent measure in Study 2 was *visual dwell time*—the total time in milliseconds that a participant looked at a given interest area. Because dwell times of zero are psychologically ambiguous—potentially reflecting participants' disinterest in a region of the image or lack of awareness of its content—we retained only non-zero dwell times in our analysis. This approach ensured that dwell times reflected the degree of attention paid to content whose status as a person or thing was known to participants. Dwell times were log-transformed to normalize their highly right-skewed distribution (Ratcliff,

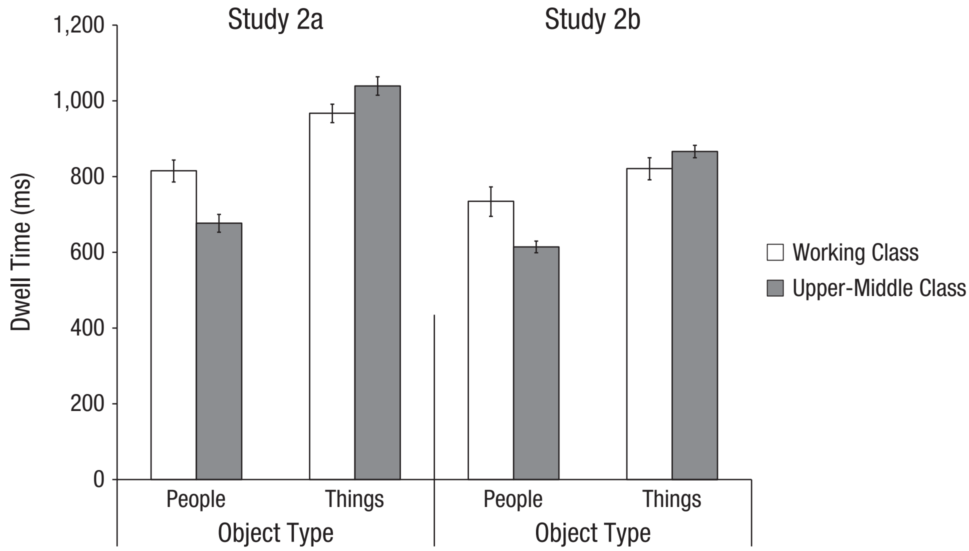

Fig. 2. Total dwell time as a function of object type and social class in Studies 2a and 2b. Data bars represent marginal regression predictions for the working- and upper-middle-class groups. Log-transformed dwell times were converted back to milliseconds for graphing purposes. Error bars correspond to 1 standard error above and below the point estimates.

1993). (Raw dwell-time means for Studies 2a and 2b are reported in Figs. S6 and S7, respectively, in the Supplemental Material.)

For the purposes of regression analysis, object type was coded such that 0 refers to interest areas classified as things and 1 to those classified as people. Because multiple observations were obtained from each participant, we specified a multilevel model that included a random intercept for dwell time, a random slope for object type, an unstructured covariance matrix, and robust standard errors. Dwell times were regressed on participants' social class (z-scored), object type, and the Social Class × Object Type interaction. Because social class and ethnicity were confounded, with all non-White ethnic groups reporting significantly lower class than Whites, we adjusted for participants' ethnicity and all Ethnicity × Object Type interactions (Yzerbyt, Muller, & Judd, 2004) in this model. Interest-area size (i.e., total area in pixels) was also entered as a control variable because of its obvious influence on dwell times.

Significant interactions between social class and object type were observed in both Study 2a (b = −0.129, SE = 0.038, 95% CI = [−0.203, −0.055], z = −3.41, p = .001) and Study 2b (b = −0.116, SE = 0.05, 95% CI = [−0.214, −0.019], z = −2.34, p = .019). These interactions are illustrated in Figure 2. (See Tables S3 and S4 in the Supplemental Material for full regression results.) Analysis of simple slopes revealed that, compared with their lower-class counterparts, higher-class participants spent significantly less time looking at people in both Study 2a (b = −0.093, SE = 0.028, 95% CI = [−0.149, −0.037], z = −3.27, p = .001) and Study 2b (b = −0.090, SE = 0.034, 95% CI = [−0.156, −0.023], z = −2.63, p = .009). No significant class differences were observed for regions coded as things in either Study 2a (b = 0.036, SE = 0.019, 95% CI = [−0.002, 0.074], z = 1.87, p = .062) or Study 2b (b = 0.027, SE = 0.023, 95% CI = [−0.018, 0.071], z = 1.18, p = .236).[1] (Note that because not all parts of the images were considered interest areas, less attention to regions coded as people does not mean that more attention was paid to regions coded as things.)

Discussion

The results of Studies 2a and 2b further support the idea that lower-class perceivers appraise other human beings as more motivationally relevant than do higher-class perceivers. Nonetheless, the results are ambiguous as to the cognitive "depth" of this phenomenon. It may be that class affects only deliberate aspects of attention—such that higher-class individuals consciously choose to devote less attention to other people than do lower-class individuals. Or social class may also influence spontaneous attentional processes that occur independently of voluntary control, consistent with the idea that people's sociocultural backgrounds shape even their most basic cognitive tendencies.

Study 3 tested whether human faces have a greater capacity to rapidly and spontaneously summon visual attention among members of lower social classes than among members of higher social classes. We explored this question using a *flicker paradigm* (Masuda & Nisbett, 2006; Ro, Russell, & Lavie, 2001; Simons, 2000), in which perceivers attempt to identify differences between alternating pairs of visual images. Objects high in motivational relevance spontaneously attract visual attention and should therefore benefit from a detection advantage in the flicker paradigm (Ro et al., 2001). If, as we have theorized, human targets possess greater motivational relevance for members of lower social classes, then lower-class perceivers should be better than higher-class perceivers at detecting changes to faces in their visual environment.

Study 3

Participants

Participants were 397 workers (208 males, 189 females) between the ages of 18 and 70 years (M = 35.8, SD = 11.2) on Amazon's Mechanical Turk crowdsourcing platform (Buhrmeister, Kwang, & Gosling, 2011). Two hundred ninety-five participants identified as White, 38 as African American, 17 as Latin American, 27 as Asian American, with 20 specifying another ethnicity or declining to answer the question. Each participant received $0.51 in compensation. The final sample size was determined on the basis of a power analysis of the first 80 participants' data.

Materials and procedure

Inquisit software (Millisecond Software, 2014) was used to administer the change-detection task online. After clicking on the study, participants read that they would be shown alternating pairs of images that might or might not be identical, and they were instructed to press the space bar as soon as they were certain whether or not a change had occurred. Participants were told that after pressing the space bar, they would be asked to identify any change from a list of possibilities.

Participants completed 10 practice trials with error feedback and 36 test trials without error feedback. At the beginning of each trial, participants were shown an array of pictures arranged radially around a fixation point. This array (A) always included one face and five inanimate objects (i.e., a fruit or vegetable, a houseplant, an item of clothing, an appliance, and a musical instrument). Each picture category consisted of six exemplars (i.e., six different faces, six different fruits and vegetables, etc.), and exemplars of each category were randomly selected from this subset. The screen position of each picture was randomly determined. After 533 ms, array A was replaced by a blank screen lasting for 83 ms. A second object array (A′) then appeared. On most trials, A′ differed from A such that a randomly selected picture was replaced with another exemplar of the same category; three no-change trials were randomly interspersed throughout the experimental session. After remaining on the screen for 533 ms, A′ was replaced by another blank screen lasting 83 ms. This sequence—A, blank screen, A′, blank screen—was repeated until participants pressed the space bar to indicate that they had detected which picture in the stimulus array, if any, had changed (Fig. 3). After pressing the space bar, participants were shown three pictures from array A and an icon that read "no change"; in change trials, one of the displayed objects differed between arrays A and A′, and the other two were randomly selected decoys. Participants were instructed to select the picture they believed had changed or to click the no-change icon.

After completing the change-detection task, participants completed the group-based social-class probe used in Studies 1 and 2 (Jackman & Jackman, 1983), questions concerning their own and their parents' educational attainment and income, the subjective-SES ladder (Adler et al., 2000), and scale measures of their current and childhood SES (Mittal & Griskevicius, 2014). Measures of political ideology and religiosity were also administered for exploratory purposes and will not be discussed here. As in the previous studies, our analyses centered on the group-based measure of social class.

Results

Thirty-seven participants identified as poor, 147 as working class, 173 as middle class, 39 as upper-middle class, and 1 as upper class on our group-based class measure (Jackman & Jackman, 1983). Participant gender did not moderate any observed effects and is therefore omitted from the reported analyses.

Practice and no-change trials were excluded from analysis. Participants were no better than chance at correctly identifying changes after fewer than 1,350 ms; thus, latencies below 1,350 ms were excluded from analysis (6.3% of observations). Of the remaining trials, only those in which participants correctly identified the change were retained (leading to the exclusion of an additional 6.2% of observations). Because the response-latency data contained a number of extreme values, a two-step outlier treatment was applied. First, responses more than 2.5 standard deviations above the grand-mean latency were excluded (1.2% of the previously retained observations; Ratcliff, 1993). This resulted in the loss of 4 participants because all their trials failed the exclusion criteria. Thus, the final sample consisted of 393 participants. Second, because the resulting distribution still had high values for skewing and kurtosis, we submitted the remaining data to a reciprocal transformation (thus converting response latencies into speeds; Ratcliff, 1993). (Raw means for

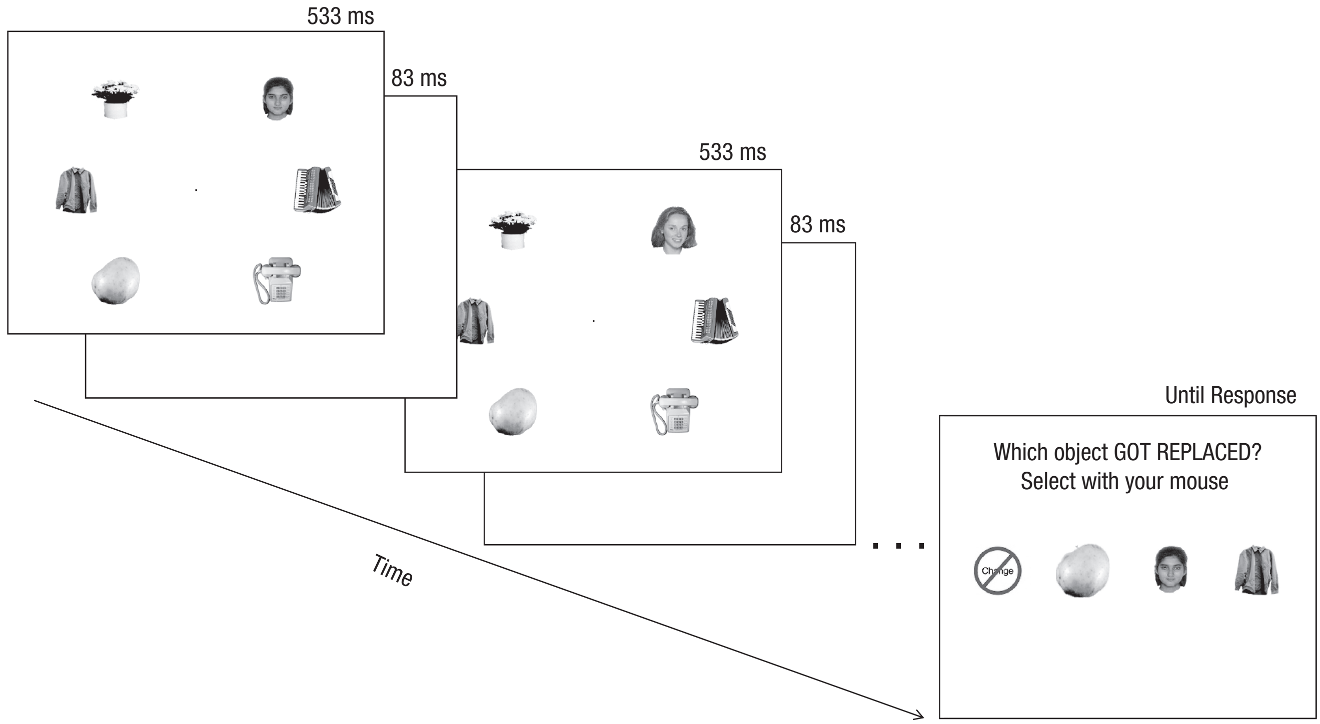

Fig. 3. Example trial sequence from Study 3. Participants saw two sequentially presented arrays separated by blank intervals. Each array contained one face and five inanimate objects around a central fixation point, but on most trials, one object was different between arrays. The trial sequence repeated until participants pressed a space bar, after which they had to identify which object, if any, had changed. In this example, a different face appeared on the second array.

change-detection latencies are presented in Fig. S8 in the Supplemental Material.)

For the purposes of regression analysis, object type was coded such that 0 referred to things and 1 to people. Because multiple observations were obtained from each participant, we specified a multilevel model that included a random intercept for dwell time, a random slope for object type, an unstructured covariance matrix, and robust standard errors. Change-detection speeds were regressed on participants' social class (z-scored), object type, and the Social Class × Object Type interaction. Because social class and ethnicity were confounded, with Asian Americans reporting significantly higher class than all other groups, we adjusted for participants' ethnicity and all Ethnicity × Object Type interactions in this model. A significant interaction between social class and object type was observed (b = −0.012, SE = 0.005, 95% CI = [−0.022, −0.002], z = −2.30, p = .021). This interaction is illustrated in Figure 4. (See Table S6 in the Supplemental Material for full regression results.) Analysis of simple slopes revealed that higher-class participants were significantly slower to detect face changes than were lower-class participants (b = −0.014, SE = 0.006, 95% CI = [−0.026, −0.002], z = −2.27, p = .023). However, the speed with which lower- and higher-class participants detected changes to things did not differ significantly (b = −0.002, SE = 0.005, 95% CI = [−0.013, 0.008], z = −0.46, p = .645).

Discussion

Study 3 suggests that social classes differ in terms of spontaneous processes of attentional selection. In this study, human faces were more effective at cuing lower- than higher-class participants' attention, whereas social class did not moderate the degree to which inanimate objects spontaneously summoned visual attention. In keeping with the notion that the ability of stimuli to summon visual attention outside of voluntary control reflects their motivational relevance (Ro et al., 2001), the current results imply that lower-class individuals find other human beings more motivationally relevant than do higher-class individuals. More broadly, this finding suggests that social class, like other forms of culture (see, e.g., Nisbett, 2003), can shape human cognitive functioning at a deep level.

General Discussion

In naturalistic (Study 1) and laboratory (Studies 2a and 2b) settings, lower-class perceivers devoted more visual

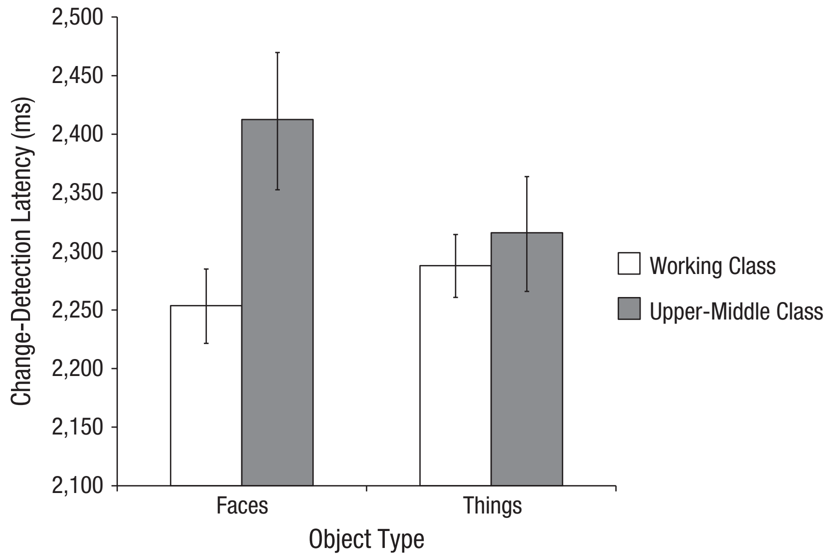

Fig. 4. Change-detection latencies as a function of object type and social class in Study 3. Data bars represent marginal regression predictions for the working- and upper-middle-class groups. Log-transformed dwell times were converted back to milliseconds for graphing purposes. Error bars correspond to 1 standard error above and below the point estimates.

attention to other human beings than did their higher-class counterparts. Study 3 suggests that divergent relevance appraisals occur early in social-information processing: Human targets are more likely to spontaneously draw lower-class perceivers' visual attention than higher-class perceivers' visual attention. Alternative interpretations of the findings are possible—for instance, it may be that members of lower social classes are simply more curious about other people than are higher-class individuals. However, given the tight connection between spontaneous visual attention and motivational-relevance appraisals (Brosch & Van Bavel, 2012; Lang et al., 1997), our findings make a compelling case that social classes differ in their judgments of other people's significance.

Broader implications

Because attention determines the content of much subsequent cognitive processing, class differences in visual attention have a wide range of potential implications for social judgments and behaviors. Our results may suggest a reconsideration of empirical findings in the class literature—for instance, the finding that members of higher social classes show lower accuracy when retrospectively judging the emotions of interaction partners (Kraus & Keltner, 2009) may have as much to do with attentional neglect as it does with reduced empathic ability. Future research must distinguish between upstream (i.e., attentional) and downstream (i.e., interpretive) effects of social class on people's judgments and behaviors.

Measures of social class revisited

Does a group-based proxy for social class predict visual attention better than other measures? To answer this question, we reran the analyses in Studies 1 through 3 using the available measures of social class as individual predictors and as competing predictors. Participants' class group was the most consistent predictor of visual attention to other human beings (Table 1). Table 1 also shows the results of an integrative data analysis (IDA; Curran & Hussong, 2009) of the data across studies. (For methodological details of the IDA, refer to the Supplemental Material.) In this analysis, all of the individual class indicators except for the scale measure of SES (Mittal & Griskevicius, 2014) proved to be significant predictors of visual attention. However, when the indicators competed in the same regression model, only the group-based class measure and educational attainment were independently associated with attention. These results in part reflect the fact that different research contexts benefit from different class indicators (Diemer et al., 2013). They also, however, vindicated our a priori reliance on the group-based operationalization of social class—and by extension the notion that group-based phenomena are best explored using group-based measures (Na et al., 2010).

Table 1. Effects of Social-Class Indicators on Visual Attention to Human Targets

Predictor and model	Social-class measure				
	Class group	Income	Education	SES ladder	SES scale
		Study 1: predicting gaze length			
Social class					
Restricted	−0.113*	−0.023	−0.051	−0.001	—
Full	−0.148*	0.012	−0.087	0.036	—
		Study 2a: predicting dwell time			
Social Class × Object Type					
Restricted	−0.129*	−0.060†	−0.102*	−0.077*	−0.075*
Full	−0.099†	0.022	−0.067*	0.017	−0.010
		Study 2b: predicting dwell time			
Social Class × Object Type					
Restricted	−0.116*	−0.120*	−0.098*	−0.091*	−0.090*
Full	0.003	−0.099*	−0.061†	0.030	−0.020
		Study 3: predicting detection speed			
Social Class × Object Type					
Restricted	−0.012*	−0.004	−0.010*	−0.009*	−0.002
Full	−0.011†	0.002	−0.008†	−0.004	0.005
		Integrative data analysis: predicting social attention			
Social class					
Restricted	−0.202*	−0.057*	−0.194*	−0.064*	−0.039
Full	−0.191*	−0.008	−0.147*	0.028	0.034

Note: The table shows unstandardized regression coefficients. For each sample, results are shown for the effect of each predictor when it is the only social-class measure in the model (restricted model) and for the independent effect of each predictor when it and all other social-class measures were tested simultaneously (full model). In Studies 2a and 2b, in which student samples were used, "income" refers to parents' income, "education" refers to the average of mother and father's highest attainment, and "SES scale" refers to socioeconomic status (SES) during childhood.
$^{\dagger}p \le .10$. $^{*}p < .05$.

Conclusion

Like other forms of culture, social class appears to have a pervasive impact on individuals' cognitive—and social-cognitive—functioning. As a cultural analysis would predict, this influence occurs at the level not only of norms and values, but also of rote attentional processes that occur spontaneously (i.e., independently of voluntary control). Finally, our analysis of different class measures' predictive efficacy suggests that the best way to study a group-level phenomenon such as social-class culture is to employ group-level measures.

Action Editor

Bill von Hippel served as action editor for this article.

Author Contributions

P. Dietze and E. D. Knowles designed the experiments, collected and analyzed the data, and wrote the manuscript.

Acknowledgments

The authors thank Angela Wang, Charles Ray, Eduardo González Martín, Eduardo Rivera Picardo, Feifei Chen, Lena Fliedner, Leah Shaw, Ruchita De, Samantha Preston, Shreyas Ganesh, and William Diaz for helping with data collection, as well as Tony Ro for providing the stimuli used in Study 3.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

Supplemental Material

Additional supporting information can be found at http://pss.sagepub.com/content/by/supplemental-data

Open Practices

All data and materials have been made publicly available via the Open Science Framework and can be accessed at osf.io/zgq7m.

The complete Open Practices Disclosure for this article can be found at http://pss.sagepub.com/content/by/supplemental-data. This article has received the badges for Open Data and Open Materials. More information about the Open Practices badges can be found at https://osf.io/tvyxz/wiki/1.%20View%20the%20 Badges/ and http://pss.sagepub.com/content/25/1/3.full.

Note

1. We reran our analyses using number of fixations to an interest area as the outcome variable. The results remained substantively unchanged: Higher-class participants fixated significantly less often on people than did lower-class participants, and no class difference was observed for things.

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