

Running head: SIGNALING SOCIOECONOMIC STATUS

Signs of Socioeconomic Status: A Thin-Slicing Approach

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Abstract

Socioeconomic status (SES) is a primary determinant of health vulnerabilities and social affiliations. To ascertain if SES is signaled in brief patterns of nonverbal behavior, the authors had participants of varying SES backgrounds engage in a brief interaction with a stranger. Videos of these interactions were coded for disengagement and engagement nonverbal cues, and estimates of SES were provided by naïve observers. Consistent with analyses of resource dependence and power, upper SES participants displayed more disengagement cues (e.g., doodling) and fewer engagement cues (e.g., head nods, laughs). Consistent with the thin slicing literature, observer's estimates of SES were reliable with each other, and accurately predicted targets' family income, maternal education, and subjective SES. Finally, nonverbal displays of disengagement and engagement predicted observer estimates of SES, suggesting that these cues are systematic signs of SES. Discussion focused on SES and patterns of disengagement and engagement in other realms.

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Socioeconomic status (SES) is defined by material wealth, occupation, and participation in educational and social institutions (Oakes & Rossi, 2003). SES determines the substance of material life, from the foods and arts people enjoy (e.g., Bourdieu, 1985; Snibbe & Markus, 2005), to the schools, social clubs, and activities people engage in (Domhoff, 1998), to the likelihood of health and mood related vulnerabilities (Adler et al., 1994; Link, Lennon, & Dohrenwend, 1993).

In the present research we examine how individuals signal their SES to others. Drawing upon methodological advances in person perception research (Funder, 1999) and theoretical claims concerning resource dependence, we show that SES is signaled by a reliable pattern of disengagement-related nonverbal behavior, that observers reach impressive consensus and accuracy in judging other individuals' SES, and that observers make these judgments based on these SES-related nonverbal displays.

Resources and Status-Related Signaling

The notion that individuals reliably signal their capacity to provide resources to others and are accurate judges of these resource-based displays is supported by research from several literatures (Anderson, Srivastava, Beer, Spataro, & Chatman, 2006; Keltner, Van Kleef, Chen, & Kraus, in press). In non-human species, the ability to accurately assess resource displays leads to preferred mating opportunities and the avoidance of costly, aggressive encounters in negotiations of status (e.g., Krebs, Davies, & Parr, 1993). In humans, nonverbal displays of the capacity to provide resources are likely to have been important in mate selection (see Buss, 1987) as well as in group members' attempts to identify individuals suitable for positions of leadership (e.g., Anderson, et al., 2006).

In the present research, we ask whether this reasoning applies to the signaling of SES. Based on the preceding claims, we expect that SES will be associated with a distinct pattern of nonverbal behavior, that outside observers will reliably and accurately judge other's SES based on minimal exposure to the individual, and that observers will make inferences about a target's SES based on the occurrence of SES-related nonverbal behavior. Our more specific predictions derive from recent theorizing about resource dependence and social disengagement.

SES, Resource Dependence, and Social Disengagement

With increasing resources the individual is less dependent upon others (e.g., Johnson & Krueger, 2006; Lachman & Weaver, 1998; Rusbult, Verette, Whitney, Slovic, & Lipkus, 1991). Upper SES individuals, by implication, should tend to be less dependent upon others, for the simple reason that they have resources to accomplish many tasks of social adaptation (Argyle, 1994). For complementary reasons, lower SES individuals, often lacking basic resources, should tend to be more dependent upon others. Two lines of research suggest that upper SES individuals will signal their relative independence in nonverbal signs of social disengagement, whereas lower SES individuals will signal their relative dependence with displays of greater social engagement.

A first is research regarding the interdependence model of close relationships (Finkel et al., 2006; Rusbult et al., 1991). In this research, relationship-dependent individuals are more likely to show increased engagement-related behaviors towards their relationship partners. These behaviors include reaching consensus decisions in moral dilemmas, making fewer verbally destructive comments during an interaction, and self-sacrificing for the partner's benefit (Rusbult et al., 1991; Wiselquist, Rusbult, Foster, & Agnew, 1999). More independent romantic partners,

by contrast, show patterns of relationship disengagement – less willingness to reach consensus, more destructive comments, and fewer sacrifices.

Studies of social power and nonverbal display serve as a second basis for our prediction concerning SES and social disengagement. In general, powerful individuals are less dependent upon others, and tend to show more nonverbal disengagement. Studies find, for example, that high-power adults, compared to low-power individuals, focus their gaze less on others (particularly on others of high status) (Ellyson, Dovidio, & Fehr, 1981; Hall, Coats, & Smith Lebeau, 2005), whereas high-power individuals are more likely to interrupt and to speak at greater length, reflecting a relative lack of attention to others (DePaulo & Friedman, 1998).

Given these two literatures, we predicted that upper SES would be associated with a disengaged style of nonverbal behavior (e.g., more self-grooming, doodling) in an interaction with a stranger. We expected lower SES, in contrast, to be associated with increased engaged behaviors (e.g., head nods, eyebrow raises). Research relevant to this hypothesis is limited, but suggestive. For example, in a meta-analytic review of status and nonverbal behavior, upper SES individuals were found to speak in ways that are less attentive to the audience, for example, with fewer turn-inviting pauses (Hall et al., 2005).

The Thin Slicing of SES

Thus far we have predicted that upper and lower SES will be associated with patterns of nonverbal disengagement and engagement respectively. Our analysis suggests that these behaviors, in turn, will serve as reliable cues for social observers' inferences about SES.

Within the thin slicing literature, when exposed to brief patterns of nonverbal behavior, observers reach consensus and make accurate judgments about a variety of different characteristics including an individual's personality traits, teaching ability, sexual orientation,

and marital satisfaction (e.g., Albright, Kenny, & Malloy, 1988; Ambady & Rosenthal, 1992; Borkeu & Liebler, 1992). Observers are also capable of judging other group members' social status. For example, members of dormitory residence halls rated the social status (influence, prominence, and respect) of their peers two weeks into their year together, and then four and nine months later (Anderson, John, Keltner, & Kring, 2001). Group members showed impressive consensus in their judgments of status at two weeks, and these judgments predicted students' status in later assessments. Observers have also been found to accurately detect others' social status; that is, group members' assessments of an individual's social status corresponded to that individual's own self assessment (Anderson et al., 2001; Anderson et al., 2006).

In the present research we extend these thin-slicing studies of social status to the domain of SES. We predicted that observers would reach consensus in their SES ratings of relative strangers, and that they would make accurate estimates of a target person's SES based on watching that person engage in a brief interaction. We further expected the SES-related pattern of nonverbal disengagement (versus engagement) to account for observers' judgments of SES (c.f., Brunswik, 1956).

The Present Study

To test our hypotheses, participants engaged in a short interaction with a complete stranger. SES was measured objectively using self-reports of family income and education (e.g., Lachman & Weaver, 1998). Trained coders identified specific disengagement- and engagement-related behaviors. An independent sample of naïve observers then rated the SES of participants based on viewing a video tape of the interaction. With these data, we tested three hypotheses: (1) SES will be reflected in patterns of disengagement and engagement-related nonverbal behavior; (2) SES will be reliably and accurately judged by naïve observers during social interactions; and

(3) nonverbal displays of social engagement and disengagement will predict observer estimates of SES.

Method

Overview

Participants were 106 undergraduates enrolled in psychology classes at a public University. As can be seen in Table 1, our sample consisted of maternal and paternal college graduation levels comparable to levels (67.8%) observed in other studies of SES (Adler et al., 2000). In terms of income, the 27% of our sample falling below state median income (*Mdn* = \$51,312) (Denavas-Walt, Proctor, & Lee, 2005) is comparable to other nationally collected samples (30.9%) (Johnson & Kreuger, 2006).

Participants participated with a complete stranger in a 10' X 14' laboratory room, sitting in chairs facing one another approximately three feet apart. The experimenter explained to participants that they would participate in a hypothetical job interview with the aim of determining effective interview strategies. Participants then engaged in a videotaped get-acquainted interaction for five minutes.

After the get-acquainted interaction, participants took part in a job interview where they were asked several interview questions by the experimenter. Next, to address a separate set of interests related to SES, participants were brought to separate tables where they split a signing bonus of \$5,000 between themselves and their partner based on their perceptions of interview performance. Participants then wrote explanations of their allocation decision. SES was unrelated to money allocation during the economic game. Lastly, participants completed demographic information.

Get-Acquainted Interaction

For the present study, we concentrated on the get-acquainted interaction, for it produced the most unscripted, spontaneous nonverbal behavior. In the interaction, participants were instructed to describe themselves to their partner, and then to interact for the remaining five minutes. Participants were given a set of nine discussion questions meant to help facilitate conversation. An example discussion question was: “How would you describe yourself?” During the interaction, the experimenter sat in an adjacent room. For video-recording, partially concealed video cameras were positioned in bookshelves directly facing each participant. The entire body of each participant was visible to the camera.

Nonverbal Behavior Coding

Disengagement and engagement cues. A standard 60-second slice of nonverbal behavior from the get-acquainted interaction was coded for this study following the coding method developed by Ellyson & Dovidio (1985). The 60-second slice of coding is consistent with similar analyses (e.g., Gonzaga, Keltner, Londahl, & Smith, 2001), and within the timeframe typically considered a thin slice of behavior (Ambady & Rosenthal, 1992). The occurrence and duration of three disengagement and four engagement cues were coded by two different judges who overlapped on 30 cases (15 dyads). The disengagement cues reflected a turning of attention away from the other person, and are impolite or improper (e.g., Brown & Levinson, 1987; Ekman, 1977; Ekman & Freisen, 1969). The cues were self-grooming, object manipulators (i.e, fidgeting with objects during the interaction), and doodling. The engagement cues were head nods, eyebrow raises, laughter, and gazes at the partner. These cues express an interest in the other and affiliative intent (Gonzaga et al., 2001; Reeve, 1993). After inspection of the videotapes we focused on behaviors related to disengagement and engagement that occurred with some regularity. Obvious cues of disengagement (e.g., yawning) and engagement (e.g. affiliative

touching) that did not occur more than 5 times were not included in the analysis. Yawning occurred a total of 4 times (3 times among upper SES participants). Affiliative touch occurred once and was instigated by a lower SES participant.

Behaviors coded as occurring during an overlapping time point were considered an agreement. Overall, judges agreed on 69.3% of all coded behaviors. Table 2 displays the total frequency, duration, and reliability estimates for each cue.

Observer ratings of SES. A group of seven undergraduates (3 male and 4 female) rated the SES of participants after watching videotapes of each get-acquainted interaction. Observers were instructed to make their best estimates of participant SES using the MacArthur Scale of subjective SES (Adler, Epel, Castellazo, & Ickovics, 2000). Observers placed an “X” on a 10-rung ladder representing student SES at the University campus. The mean of the observer ratings ($M = 6.30$, $SD = .87$) was used as our estimate of observer SES ($\alpha = .71$).

SES Self-Report Measures

Parental education and income were assessed as in prior work (see Table 1) (Adler et al., 2000; Lachman & Weaver, 1998). Parental education and income were assigned values of 1 to 3 and 1 to 7 respectively, with higher numbers indicating greater education and income. The scores for both parental education measures and for household income were standardized, and then summed to create a composite measure of overall SES ($M = 0.00$, $SD = 2.49$), ($\alpha = .78$). Subjective SES was also self-reported by participants using the same scale as observer SES ($M = 5.90$, $SD = 2.36$).

Results

Four participants were excluded because of missing video data due to experimenter error and one was excluded because of a revealed awareness of the hypotheses. To ensure that both

members of each dyad were included in the analyses, the partner of the excluded participant was also excluded. The final analyses were conducted with the remaining 50 dyads (100 participants). Dyads were indistinguishable, and gender, ethnicity, and SES were allowed to vary freely within each dyad. Of the dyads, 16 were all female, 12 were all male, 22 were mixed gender, 12 were all European American, 11 were all non-European American, and 27 were mixed ethnicity.

Because one may expect that certain personality dimensions (e.g., agreeableness, neuroticism) may be associated with engagement and disengagement behavior, we initially examined correlations between SES and the Big-Five (e.g., Vazire & Gosling 2004). Only extraversion was correlated with SES, $r(99) = .17, p = .08$. The subsequent results are reported without controlling for personality.

Nonverbal Signs of SES

For our first hypothesis, we predicted that upper SES would be associated with a pattern of nonverbal social disengagement, whereas lower SES would be associated with nonverbal signs of engagement¹. To test these two predictions, cue usage was entered as an outcome variable, and actor and partner SES, gender, and ethnicity were entered as predictor variables. Gender was added because previous research suggests that women tend to show more engagement in social interactions than men (e.g., Hecht & La France, 1998; Hall, Carter, & Horgan, 2001). We accounted for ethnicity to determine if SES relates to cue usage independent of ethnic differences. In addition, the interactions of actor and partner SES, gender, and ethnicity were used as predictors to determine dyad-level effects (e.g., same gender versus mixed gender dyads).

Disengagement Cues. As predicted, actor SES was significantly and positively associated with increased disengagement cues $t(84.45) = 2.63, p = .01, \beta = .26, d = .58$. Upper SES individuals were more likely than lower SES individuals to self-groom, fidget with nearby objects, and doodle during the 60-second slice of their conversation with their interaction partners. Interestingly, *partner* SES was also significantly positively associated with increased disengagement cues $t(84.45) = 2.01, p < .05, \beta = .20, d = .44$. Finally, a marginally significant interaction between actor and partner gender also emerged, $t(43) = 1.81, p = .08, \beta = .19, d = .40$, suggesting that same-gender male ($M = .16, SD = .78$) and female ($M = .06, SD = .63$) dyads had more disengagement-related nonverbal behavior than mixed gender dyads ($M = -.15, SD = .34$). No other effects were significant.

Engagement Cues. Also in line with our first hypothesis, actor SES was significantly and negatively associated with engagement cues $t(88.40) = -2.16, p < .05, \beta = -.21, d = .45$. Upper SES individuals were less likely to look at their partners, laugh, nod their heads, and raise their eyebrows. Actor gender was also significantly and positively associated with greater engagement cues $t(90.00) = -2.87, p < .01, \beta = -.27, d = .60$, revealing women to be more frequent practitioners of socially engaged behavior, replicating previous research (e.g., Hecht & LaFrance, 1998). In addition, a partner effect emerged for ethnicity $t(89.30) = -2.12, p < .05, \beta = -.21, d = .44$, but this effect was qualified by an actor by partner ethnicity interaction $t(43) = -2.10, p < .05, \beta = -.21, d = .44$, suggesting that dyads with European American participants ($M = -.27, SD = .35$) displayed less engagement-related nonverbal displays than dyads with all non-European American participants ($M = .10, SD = .57$), and mixed ethnicity dyads ($M = .10, SD = .68$). Overall, the results support our hypothesis suggesting that upper SES individuals display

their SES through a nonverbal style of social disengagement, whereas lower SES is associated with a pattern of social engagement (see Figure 1)².

Reliability and Accuracy of Observer Estimates of SES

Our second prediction held that naïve observers would be able to make reliable and accurate estimates of SES despite having no information other than the participant's behaviors during the get-acquainted interaction. Such results would suggest that observers perceive SES based on thin slices of behavior³.

Observer consensus. We computed consensus for observer SES using two indices: an ICC (2,1) which assesses reliability by comparing the variability of different ratings of the same participant to the total variation across all ratings and all participants (e.g., Vazire & Gosling, 2004), and an average of pairwise correlations between observers. Both the average pairwise correlation $r(99) = .31, p < .01$, and the ICC $r_I = .34, F(99, 594) = 3.47, p < .01$ were significant for naïve observer estimates of SES. Observers quickly and readily reached agreement in judgments of targets' SES based on viewing the get-acquainted interaction.

Observer accuracy. For accuracy, we correlated participant SES ratings with the average of naïve observer estimates of SES. As we predicted, naïve observer estimates of SES, using a ladder ranking, positively correlated with targets' self-reports of overall SES $r(99) = .25, p < .05$, family income $r(99) = .27, p < .01$, maternal education $r(99) = .24, p < .05$, and subjective SES $r(99) = .23, p < .05$. Observer estimates were unrelated to targets' paternal education $r(99) = .12, ns$. Overall, the results support our second hypothesis and show that observers, viewing only the get-acquainted interaction, were able to identify objective and subjective measures of SES with greater-than-chance accuracy.

Observer Inferences of SES Using Disengagement and Engagement Cues

For our third and final hypothesis, we predicted that observers would use participant disengagement and engagement cues when making their estimates of SES. This prediction implies that observers made accurate judgments of SES based on their perception of disengagement-related displays during the get-acquainted interaction.

Disengagement cues. We conducted a hierarchical linear regression analysis with participant gender and ethnicity entered at step 1, and disengagement cues entered at step 2. The model entered at step 1 was not significant $F(2, 97) = 2.38, p = .10$, as only ethnicity predicted observer estimates of SES $t(99) = 2.05, p < .05, \beta = .21$: European Americans were judged as higher in SES. The model entered at step 2 was significant $F(3, 96) = 3.96, p < .05$ and explained 6.3% of the additional variance in observer ratings of SES $F(1, 96) = 6.84, p < .05$. As expected, an examination of the coefficients revealed that displays of disengagement cues predicted observer estimates of SES $t(99) = 2.62, p < .05, \beta = .28$. No other effects were significant.

Engagement cues. For engagement cues, model 2 was significant $F(3, 96) = 2.89, p < .05$ and explained 3.6% additional variance in observer ratings of SES $F(1, 96) = 3.76, p = .06$. As expected, an examination of the coefficients revealed that displays of engagement cues predicted observer estimates of SES $t(99) = -1.94, p = .06, \beta = -.20$, though the effect was marginal. Ethnicity was again related to observer SES $t(99) = 1.96, p = .05, \beta = .19$.

A Brunswik Model of our analysis is displayed in Figure 2. In the Figure, the correlation between overall participant and observer-rated SES indicates observers made accurate estimates of participant SES during the get-acquainted interaction. SES was also associated with a reliable set of nonverbal disengagement and engagement cues. Finally, observers made their accurate inferences about the SES of participants using these same disengagement and engagement cues.

Discussion

Informed by recent advances in person perception research, and theoretical analyses of resource dependence and power, we examined how SES is signaled in a face-to-face interaction. Consistent with our first prediction, SES was associated with a reliable set of nonverbal cues: upper SES individuals exhibited more disengagement and less engagement displays during a get-acquainted interaction. Consistent with our second prediction, naïve observers reached consensus and identified participant family income, maternal education, and subjective SES with greater-than-chance accuracy, despite only being exposed to participants' behavior during the get-acquainted interaction. Finally, naïve observers based their judgments of targets' SES, rightly so, on targets' disengagement and engagement-related nonverbal behavior. This evidence is the first to reveal relations between SES and engagement, and it is the first to show that SES can be readily "thin sliced" by naïve observers.

Before turning to the conceptual limitations and implications of the present findings, a few other findings warrant discussion. Gender was also related to increased engagement displays, independent of SES. This finding dovetails with the well-documented tendency for women to show more engagement during social interactions (e.g., Hecht & La France, 1998; Hall et al., 2001). Moreover, same-gender pairs also had the most displays of social disengagement. It is possible that disengagement displays are most likely between same-gender interactions where, in contrast to mixed-gender interactions, attraction cues are less salient. Still future research in this area is warranted.

The relationship between the interaction of actor and partner ethnicity and engagement cues is also noteworthy: having a non-European American partner led participants to display increased social engagement during the interaction. It is possible that the more interdependent

orientation of the non-European partners may have evoked more engaged social behaviors. This possibility merits further empirical attention.

Limitations and Implications

Notwithstanding the promise of the findings from the present investigation, it is important to bear in mind certain limitations of the data. A first is that the present study involved an interaction between strangers. This context, where the individuals had no history of interdependence, may amplify SES-related patterns of engagement and disengagement, and anticipates future research questions concerning whether SES would predict similar patterns of social behavior across different contexts, for example, amongst friends or romantic partners.

A second limitation pertains to the sample of this study – students at a University. Notably, SES measures referred to participants' parents. This characteristic raises questions about whether the present study's findings would generalize to samples with an established class identity.

A separate concern related to the present sample is that students are similar in age, educational achievement, and shared social identity. While these similarities could potentially make SES-based differences in social behavior less pronounced—particularly for disengagement displays, since the in-group similarities of students might even increase the likelihood of engagement related behaviors—it will be essential for future work to test our hypotheses with more representative samples. In particular, ethnically diverse samples can better examine how nonverbal displays are impacted by the interaction between SES and ethnicity.

Finally, there are likely to be other reliable cues of SES. Obvious candidates include style of dress, clothing quality, accent, and telling accessories. Less obvious candidates might include tone of voice, the acoustics of the laugh, or particular kinds of smiles.

The present research has documented a clear signal of upper SES – nonverbal disengagement – and a clear signal of lower SES – nonverbal engagement. These findings follow from recent analyses of social status and nonverbal behavior (e.g., Hall et al., 2005), and they point to interesting research questions. For example, it is known that people tend to marry people from similar class backgrounds (Sweeney & Cancian, 2004). Perhaps initial patterns of attraction are driven by these SES-related displays. It will be important to examine whether SES-related patterns of disengagement and engagement are related to SES differences in other realms, for example in health and mood related vulnerabilities associated with SES (e.g., Adler et al., 1994).

Recent empirical studies suggest that it is difficult to find a facet of social behavior or life outcome that is not colored by SES. The present research adds to this literature, suggesting that SES imbues the briefest interactions, both in what people are signaling nonverbally, and how they are perceived.

References

- Adler, N.E., Boyce, T., Chesney, M.A., Cohen, S., Folkman, S., Kahn, R.L., & Syme, S.L., (1994). Socioeconomic status and health: The challenge of the gradient. *American Psychologist*, *49*, 15-24.
- Adler, N.E., Epel, E.S., Castellazzo, G., & Ickovics, J.R., (2000). Relationship of subjective and objective social class with psychological functioning: preliminary data in healthy White women. *Health Psychology*, *19*, 586-592.
- Albirght, L., Kenny, D. A., & Malloy, T. E. (1988). Consensus in personality judgments at zero acquaintance. *Journal of Personality & Social Psychology*, *55*(3), 387 – 395.
- Anderson, C., John, O. P., Keltner, D., & Kring, A. M. (2001). Who attains social status? Effects of personality and physical attractiveness in social groups. *Journal of Personality and Social Psychology*, *81*, 116-132.
- Anderson, C., Srivastava, S., Beer, J. S., Spataro, S. E., & Chatman, J. A. (2006). Knowing your place: Self-perceptions of status in face-to-face groups. *Journal of Personality and Social Psychology*, *91*(6), 1094-1110.
- Ambady, N., & Rosenthal, R. (1992). Thin slices of expressive behavior as predictors of interpersonal consequences: A meta-analysis. *Psychological Bulletin*, *111*(2), 256 – 274.
- Argyle, M. (1994). *The Psychology of Social Class*. New York, NY, US: Routledge.
- Borkenau, P., & Liebler, A. (1992). Trait inferences: Sources of validity at zero acquaintance. *Journal of Personality and Social Psychology*, *62*, 645- 657.
- Bourdieu, P. (1985). The social space and the genesis of groups. *Theory and Society*, *14*(6), 723-744.

- Buss, D. M. (1987). Love acts: The evolutionary biology of love. In R. J. Sternberg & M. F. Barnes (Eds.), *The Psychology of Love*. New Haven: Yale University Press (pp. 100-118).
- Brown, P., & Levinson, S. C. (1987). *Politeness: Some universals in language usage*. New York, NY, US: Cambridge University Press.
- Brunswik, E. (1956). *Perception and the representative design of psychological experiments*. Berkeley, CA: University of California Press.
- Depaulo, B. M., Friedman, H. S. (1998). Nonverbal communication. In D. T. Gilbert, S. T. Fiske, & L. Gardner (Eds.), *The handbook of social psychology, Vols. 1 and 2 (4th ed.)* (pp. 3 – 40). New York: McGraw-Hill.
- Domhoff, G.W. (1998). *Who rules America*. Mountain View, CA: Mayfield Publishing.
- Ekman, P., & Friesen, W. V. (1969). A tool for the analysis of motion picture film or video tape. *American Psychologist*, 24(3), 240 – 243.
- Ellyson, S. L., & Dovidio, J. F. (Eds.). (1985). *Power, dominance, and nonverbal behavior*. New York: Springer-Verlag.
- Ellyson, S. L., Dovidio, J. F., & Fehr, B. J. (1981). Visual behavior and dominance in women and men. In C. Mayo & N. M. Henley (Eds.), *Gender and nonverbal behavior* (pp. 63-79). New York: Springer-Verlag.
- Feenstra, C. (1996). *The relationship of parental gender, age, education, and socio-economic status to parent-newborn communication*. Unpublished doctoral dissertation, Michigan State University.

- Finkel, E.L., Campbell, W.K., Brunell, A.B., Dalton, A.N., Scarbeck, S.J., & Chartrand, T.L. (2006). High-Maintenance Interaction: Inefficient social coordination impairs self-regulation. *Journal of Personality and Social Psychology, 91*(3), 456-475.
- Funder, D. C. (1999). *Personality judgment: A realistic approach to person perception*. San Diego, CA: Academic Press
- Gaertner, S. L., & Dovidio, J. F. (1986). The aversive form of racism. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 61–89). Orlando, FL: Academic Press.
- Gonzaga, G. C., Keltner, D., Londahl, E. A., & Smith, M. D. (2001). Love and the commitment problem in romantic relations and friendship. *Journal of Personality & Social Psychology, 81*(2), 247 – 262.
- Hall, J. A., Carter, J. D., & Horgan, T. G. (2001). Status roles and recall of nonverbal cues. *Journal of Nonverbal Behavior, 25*(2), 79 – 100.
- Hall, J. A., Coats, E. J., & Smith LeBeau, L. (2005). Nonverbal behavior and the vertical dimension of social relations: A meta-analysis. *Psychological Bulletin, 131*(6), 898-924.
- Hecht, M. A., & Lafrance, M. (1998). License or obligation to smile: The effect of power and sex on amount and type of smiling. *Personality and Social Psychology Bulletin, 24*(12), 1332-1342.
- Hore, T. (1970). Social class differences in some aspects of the nonverbal communication between the mother and preschool child. *Australian Journal of Psychology, 22*, 21 – 27.
- Johnson, W., & Krueger, R. F. (2006). How money buys happiness: Genetic and environmental processes linking finances and life satisfaction. *Journal of Personality and Social Psychology, 90*(4), 680-691.

- Keltner, D., Van Kleef, G. A., Chen, S., & Kraus, M. W. (in press). A reciprocal influence model of social power: Emerging principles and lines of inquiry. *Advances in Experimental Social Psychology*.
- Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic Data Analysis*. New York: The Guilford Press.
- Krebs, J. R., Davies, N. B., & Parr, J. (1993). *An Introduction to Behavioural Ecology (3rd ed.)*. Cambridge, MA, US: Blackwell Scientific Publications.
- Lachman, M. E., & Weaver, S. L., (1998). The sense of control as a moderator of social class differences in health and well-being. *Journal of Personality and Social Psychology*, 74, 763-773.
- Link, B. G., Lennon, M. C., & Dohrenwend, B. P. (1993). Sociometric status and depression: The role of occupations involving direction, control, and planning. *American Journal of Sociology*, 98, 1351 – 1387.
- Oakes, J.M., & Rossi, R.H., (2003). The measurement of SES in health research: Current practices and steps toward a new approach. *Social Science and Medicine*, 56, 769-784.
- Reeve, J. (1993). The face of interest. *Motivation and Emotion*, 17(4), 353 – 375.
- Rusbult, C. E., Verette, J., Whitney, G. A., & Slovik, L. F. (1991). Accommodation processes in close relationships: Theory and preliminary empirical evidence. *Journal of Personality and Social Psychology*, 60(1), 53-78.
- Snibbe, A.C., & Markus, H.R., (2005). You can't always get what you want: Educational attainment, agency, and choice. *Journal of Personality and Social Psychology*, 88, 703-720.

- Sweeney, M.M., & Cancian, M. (2004). The Changing Importance of White Women's Economic Prospects for Assortative Mating. *Journal of Marriage and Family*, 66, 1015-1028.
- Vazire, S., & Gosling, S. D. (2004). E-perceptions: Personality impressions based on personal websites. *Journal of Personality & Social Psychology*, 87(1), 123 – 132.
- Wieselquist, J., Rusbult, C. E., Foster, C. A., & Agnew, C. R. (1999). Commitment, pro-relationship behavior, and trust in close relationships. *Journal of Personality and Social Psychology*, 77(5), 942 – 966.
- U.S. Department of Commerce. (2006). *Income, poverty, and health insurance coverage in the United States: 2005 (P60 – 231)*. Washington, DC: Denavas-Walt, C., Proctor, D., Lee, C. H.

Footnotes

¹ To account for significant dyad-level variance in disengagement ($r_I = .38$), $F(50, 51) = 2.22$, $p < .20$ and engagement cues ($r_I = .14$), $F(50, 51) = 1.32$, $p < .20$ we used the actor partner interdependence model (Kenny, Kashy, & Cook, 2006).

² Participants above median SES significantly differed from participants below the median for all nonverbal behaviors ($ps < .05$) except doodling and gaze ($ps > .10$), though the mean patterns were in line with our predictions.

³ The consensus and accuracy analysis and the observer cue-usage analysis are conducted at the individual level because observer SES did not vary significantly by dyad ($r_I = .00$), $F < 1$.

Author Note

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Table 1: Frequency of measures of family income, parental education, ethnicity, and gender

Family income	
Below \$15,000	2
\$15,001 - \$25,000	5
\$25,001 - \$35,000	9
\$35,001 - \$50,000	11
\$50,001 - \$75,000	12
\$75,001 - \$100,000	13
Above \$100,000	48
Maternal education	
Less than high school grad	6
High school grad	34
College grad	60
Paternal education	
Less than high school grad	7
High school grad	22
College grad	71
Ethnicity	
Asian American	42
European American	46
Latino, African American, and Native American	8
Other	4
Gender	
Male	46
Female	54

Table 2: Mean, Frequency, and Inter-judge Reliability of Disengagement and Engagement Cues Displayed During One Minute of a Social Interaction

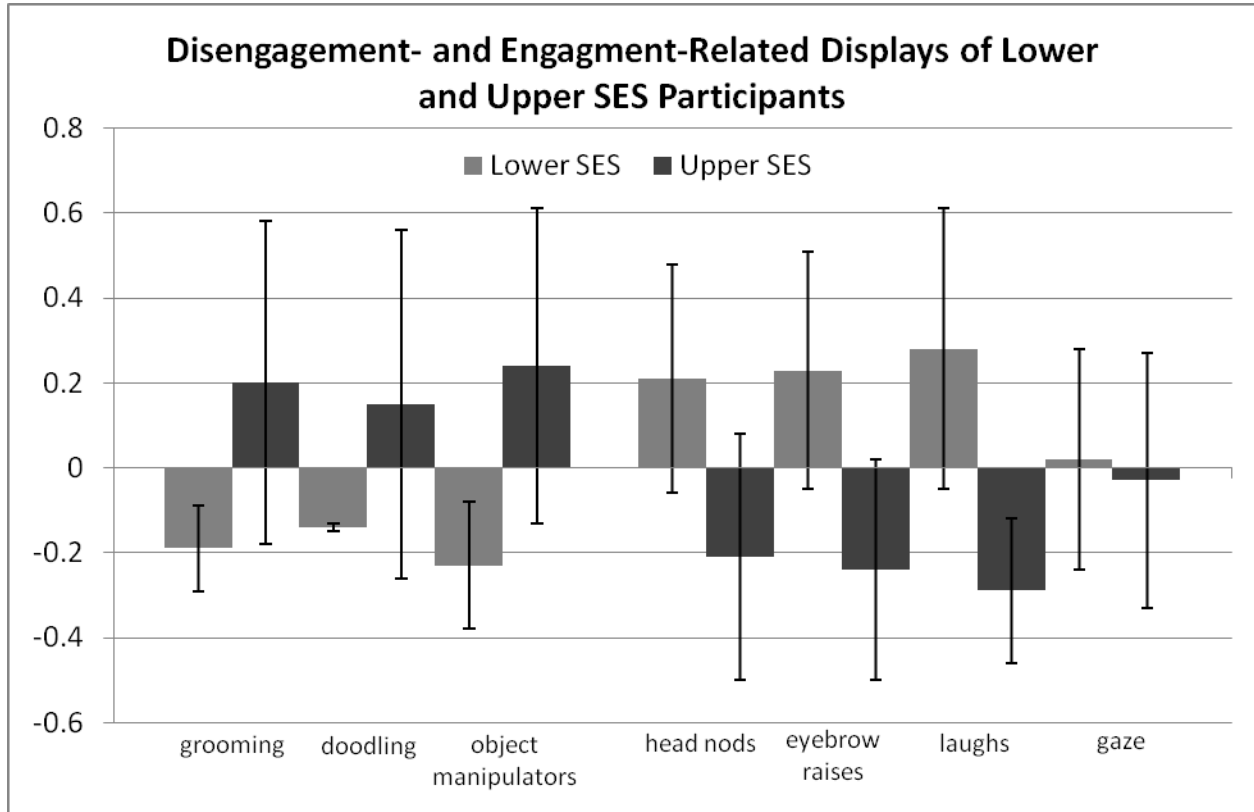
Cue Type	Mean (seconds)	SD	Total Frequency	Reliability Estimates	
				Alpha	R
Disengagement Cues					
Grooming	.49	1.60	20	.83	.70
Object Manipulators	1.11	3.00	30	.89	.80
Doodling	.10	.71	7	.96	.93
Engagement Cues					
Head Nods	4.83	3.47	411	.90	.81
Eyebrow Raises	1.98	1.84	263	.82	.71
Laughs	.59	1.25	47	.92	.86
Gaze	34.94	10.53	267	.82	.71

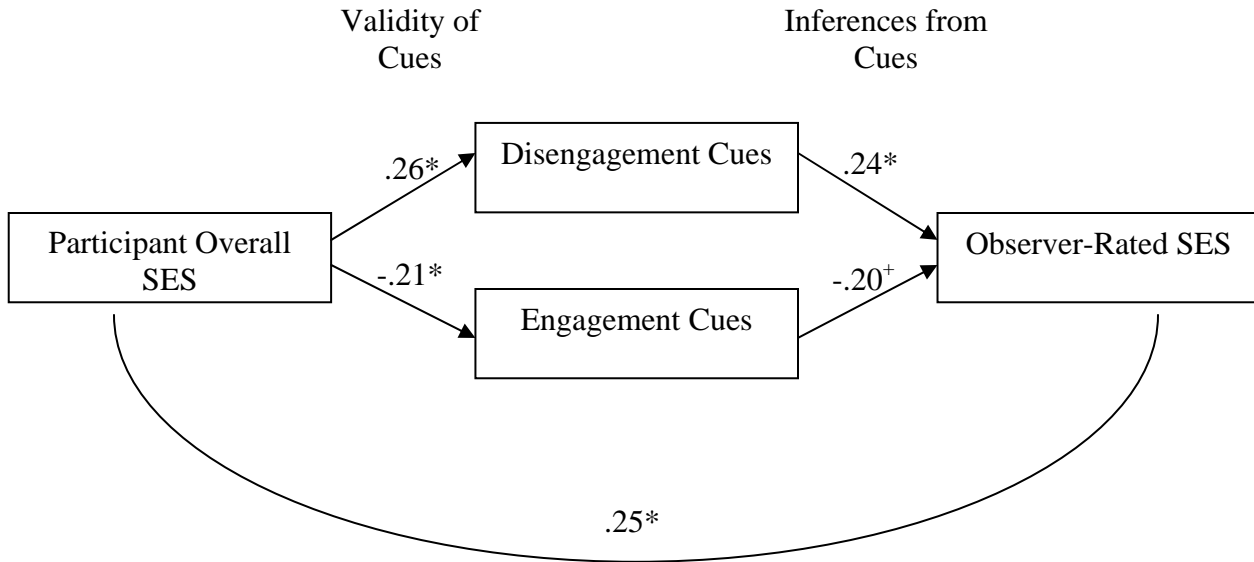
Note. SD = standard deviation; R = inter-correlation of cue-frequency between the two coders.

Figure Captions

Figure 1. Standardized duration of specific disengagement and engagement cues for participants above and below the median overall SES.

Figure 2. Model of the relationship between participant overall SES, disengagement and engagement cues, and observer SES.





* $p < .05$, + $p < .10$