WHO IS THE BOSS AND WHO IS NOT? ACCURACY OF JUDGING STATUS

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ABSTRACT: We investigated whether people were accurate at judging other people's status, what behavioral and appearance cues they relied on when assessing status, whether the way those cues were used was accurate, and whether target gender affected any of the results. Targets ($N = 48$) were university employees (faculty and staff) who were photographed while interacting with a coworker. One sample of perceivers (66 females, 42 males) rated the relative status of the two people in the photograph to each other, and another sample (60 females and males) rated each target in the photograph on status. Additionally, an array of behavioral and appearance cues of targets in the photograph was assessed. Results showed that (1) people were able to assess status in others, (2) the cues they used to assess female and male targets were somewhat different, and (3) how much people relied on specific cues corresponded to how status was expressed in these cues.

KEY WORDS: accuracy; interpersonal sensitivity; person perception; status; nonverbal.

In social interactions we constantly assess other people with regard to different personal characteristics and we do surprisingly well given the minimal information available (Ambady, Hallahan, & Conner, 1999; Amb-

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ady, Hallahan, & Rosenthal, 1995; Bernieri & Gillis, 2001; Watson, 1989). Most research on accuracy of interpersonal perception has been concerned with emotion judgments (e.g., Ekman, 1982; Hall & Bernieri, 2001; Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979). A much smaller literature addresses accuracy of judging personal or role characteristics. There is considerable evidence that people can be accurate at better than chance level when forming impressions of others' personality characteristics based on photographs, brief videotapes, or after having interacted with another (Borkenau & Liebler, 1993; Kenny, Albright, Malloy, & Kashy, 1994; Watson, 1989; Zebrowitz & Collins, 1997).

People are also accurate at drawing inferences about the relationship between two interaction partners, e.g., rapport (Bernieri & Gillis, 2001). Within the domain of interpersonal interactions, one of the most important dimensions is status (Gifford, 1991; Wiggins, 1979). However, research has rarely looked at whether we are accurate in assessing hierarchical relationships and status in others, and how we form such impressions. The goal of the present research was to see whether people can assess others' status at better than chance level and to shed light on the mechanisms involved in accuracy of judging status. More specifically, we looked at whether the cues observers use to assess status in targets are the ones that are diagnostic of actual target status and whether target gender moderated these effects.

Status and related concepts such as dominance and power have been defined in many different ways (Ellyson & Dovidio, 1985). In the present article, we define status as having control or influence over another or possessing privileged access to restricted resources. Status is an omnipresent phenomenon. Our relationships in the workplace and in the larger society are characterized by hierarchies (e.g., Hofstede, 1991) with even very young children forming relatively stable status hierarchies (e.g., Pettit, Bakshi, Dodge, & Coie, 1990; Strayer & Strayer, 1976; Weisfeld & Weisfeld, 1984). Under a human ethological perspective, hierarchies are functional because they minimize ingroup aggression and render the group more successful in task completion (Eibl-Eibesfeldt, 1989; Lorenz, 1966). Hierarchies and status have long been recognized as important factors in organizing interpersonal behavior. For instance, people are more obedient and conform more to a higher status authority person than to a lower status authority person (Larsen, Triplett, Brant, & Langenberg, 1979; Milgram, 1965). Due to constant exposure to and experience with hierarchies, it can be expected that people are quite good at judging others' status. We therefore expected that even when observers catch only a glimpse of others engaged in a social interaction they should be able to judge status at a better than chance level.

On an individual level, being able to judge status accurately can bring about distinct advantages; for instance, it can improve effective communication (e.g., being able to spot the person in charge when presenting a request) or prevent social faux-pas and embarrassment (e.g., inappropriately addressing a high status person). Also, when an individual aims at moving up in the status hierarchy it is essential to know who is higher and who is lower status in order to plan the strategic power moves effectively. For instance, it would be costly to affiliate with a person who is perceived as high status (and therefore influential) to push one's own status if this person turns out to actually be low status.

Existing Research on Accuracy of Judging Status

Status is an important dimension on which almost every social interaction can be characterized and there is a wealth of research looking at what perceivers use as indicators of status in others. For instance, height has been found to be used as an indicator of high status by perceivers (Wilson, 1968), in most cultures age is taken as a sign of status (Berger, Cohen, & Zelditch, 1972; Mazur, 1985), attracting the gaze of others has been associated with high status (Chance, 1967), babyfaced individuals are perceived as weak (Zebrowitz & Montepare, 1989), happy, surprised, and angry faces are perceived as high dominant and sad and fearful faces are perceived as low dominant (Montepare & Dobish, 2003), small eyes are perceived as indicators of dominance in contrast to large eyes (Keating & Doyle, 2002), and non-smiling has been viewed as a sign of dominance (Halberstadt & Saitta, 1987; Keating et al., 1981), to mention just a few of the findings. In sum, appearance as well as behavioral cues are important when assessing status in others. Therefore we included both in the present investigation.

Whether or not people are well-advised to rely on these cues when judging status is a different question. Compared to consistent evidence that people believe dominance and status to be related to nonverbal behavior, there is much less evidence demonstrating that nonverbal cues are actually indicative of high or low status (Hall, Coats, & Smith LeBeau, 2004). And, more importantly, not much research has looked directly at accuracy of judging status. In standardized interpersonal sensitivity tasks, the status or dominance dimension is sometimes included as one aspect of interpersonal sensitivity but typically not looked at as a separate dimension. An example is the Interpersonal Perception Task (IPT; Costanzo & Archer, 1989) in which viewers are shown scenes of targets talking about themselves or interacting with others and are asked to make judgments of several different kinds, including judgments about

relationships and status. For example, one item is ''which person is the other person's boss?'' All scenes shown in the IPT have an objective criterion, meaning (for example) that perceivers watch an interaction between an actual boss and his or her subordinate.

In non-standardized tests, there is evidence supporting the claim that people are accurate at judging others' status. Kalma (1991) found that dominance judgments at first glance predicted subsequent speaking time in a group interaction—a dominance behavior (Schmid Mast, 2002)—and dominance ratings after the group interaction. Barnes and Sternberg (1989) presented photographs of a supervisor and his or her supervisee to perceivers and asked them to judge which one was the supervisor. Perceivers were accurate at better than chance level on this task. However, the photographs were posed and not taken during a naturalistic interaction. It is therefore possible that the posers were very conscious about their status and displayed what they assumed to be nonverbal signs of high (or low) status. For instance, the boss might have taken a more erect posture to appear taller because perceivers associate height with high status (Wilson, 1968). Also, bosses might have smiled less because they thought that this is what bosses do, though the evidence for this is very weak (Hall, Horgan, & Carter, 2002; Hall et al., 2004; Hecht & LaFrance, 1998).

For trait dominance, there has been research using more naturalistic stimuli of videotaped targets in social interactions (e.g., Gifford & Hine, 1994; Moskowitz, 1990). Since traits might be expressed less readily in social interactions than states (such as hierarchical roles), it comes as no surprise that Gifford and Hine (1994) found that observers were not accurate at judging dominant-ambitious personality in targets. Moskowitz (1990) reported convergence of targets' self-reported personality dominance (assessed in two different ways) with dominance judgments of uninvolved observers (based on viewing the target in a 20 min interaction) for male targets but not for female targets.

The goal of our research was to assess first-glimpse impressions of status made by observers of conversations between individuals in a hierarchical relationship in a university work setting. In order to capture naturalistic interaction, we used candid photographs taken during a conversation. Thus, the interactants were aware of being photographed but they did not know when the photographs would be taken.

Mechanisms of Attaining Accuracy of Judging Status

If people are able to assess others' status at better than chance levels, the question arises as to how status judgment accuracy is attained. It is

important to uncover the mechanisms behind accuracy of judging status because if we know which cues observers use in their assessments, individuals can be trained to improve their status judgments and status displays.

There is almost no research available on how accuracy is attained. In Kalma's (1991) study, we do not know how perceivers reached their first-glance impressions. Barnes and Sternberg (1989) asked their participants which cues they used to judge status and reported that dress and neatness of appearance contributed most to participants' confidence in their ratings. These findings, however, still do not tell us whether perceivers were right in relying on these appearance cues for their assessment of status. Moreover, if observers are accurate in their cue utilization, they must not only know which cues to rely on but also which cues to ignore. Also, it might be the case that people use different cues when judging women and when judging men (Schmid Mast & Hall, 2004).

We investigated these questions under a lens model perspective (Brunswik, 1956). In a lens model, behavior is related to a personal state or trait in a target-perceiver paradigm. To define the terms, the target is the person being judged and the perceiver is the person judging. The target's self-reported personal state or trait, the target's behavior, and the perceiver's assessment of the target's personal state or trait are the three variables typically used in a lens model approach (e.g., Bernieri, Gillis, Davis, & Grahe, 1996; Gifford, 1991, 1994; Gifford & Hine, 1994; Lippa, 1998; Reynolds & Gifford, 2001). *Encoding* refers to how a target expresses a certain personal state or trait through specific behavioral cues. It is operationalized by the correlation between the self-reported personal state or trait and a specific behavioral cue. *Judgment policy* refers to how a perceiver uses specific behavioral cues to assess a certain personal state or trait in a target. Typically, judgment policy is operationalized by the correlation between the perceived personal state or trait and a specific behavioral cue. *Accuracy* is the correlation between the self-reported and perceived personal state or trait and indicates how well perceivers are able to judge the target's state or trait.

The lens model approach has been criticized for not taking into account configural cues (Zebrowitz & Collins, 1997), meaning that perceivers might not rely on one or several distinct cues to assess status but on the co-occurrence of a specific combination of cues. Each of these cues alone might not necessarily be a significant predictor of perceived status (e.g., leaning forward may not suggest high status unless the target is not smiling much). To take this criticism into account we analyzed whether perceivers used the available array of cues correctly (hereafter called *judgment policy accuracy*, described in more detail in the Method section).

Gender and Accuracy

Target gender and perceiver gender play a role in assessing other people's characteristics. Women score higher than men on sensitivity tasks that assess others' emotional states, personality traits, and intentions (Ambady et al., 1995; Hall, 1984; Rosenthal et al., 1979). Women are also more ''legible,'' meaning that they are judged more accurately than men (Hall, 1984). This is mostly explained by the fact that women are more expressive than men (Buck, 1984; Buck, Baron, & Barrette, 1982; Hall, 1984). Recall that target gender affected accuracy of dominance assessment in a study by Moskowitz (1990); self-reported dominance and third person observer-reported dominance converged in men but not in women. Therefore, we investigated target gender and perceiver gender as potential moderators.

Method

Overview

Perceivers rated targets' status in dyadic interactions based on photographs. Targets were university employees who were asked to have a conversation with a coworker during which photographs were taken. Perceivers either rated the status difference between the two people in the photograph (perceived status difference, Sample 1) or rated the status of the target person in each photograph (perceived individual status, Sample 2). Since the actual status of the people in the photograph was known, the ratings of perceived status difference and perceived individual status could be compared to actual status in order to obtain a measure of accuracy.

Targets

A total of 48 (18 females, 30 males) Northeastern University employees (faculty and staff) served as targets who interacted with 48 (28 female, 20 male) coworkers. With three exceptions, all targets were European American, on average 47 years old. For the analyses of Sample 1, 3 targets were excluded as described in more detail later.

Perceivers

One sample (Sample 1: 108 participants, 66 females, 42 males) rated the status of each target relative to his or her coworker (perceived status

difference) and another sample (Sample 2: 60 female and male participants, gender not recorded) rated the status of each individual target in all photographs (perceived individual status). All perceivers were recruited from the university participant pool. Although no other sociodemographic data were collected, participants in the participant pool typically are 19 years old and, typically, 87% are Caucasian, 5% Asian, 4% African American, 3% Hispanic, and 1% other. Participants received partial course credit for their participation.

Procedure

Forty-eight university employees (18 females, 30 males, hereafter called targets) were contacted at random from the university telephone book and asked to discuss ''work and life at Northeastern'' with a coworker for 4 min, in their own unit or department. To investigate people engaged in a somewhat naturalistic social interaction, a research assistant took four candid photographs of the targets with their coworkers during their conversation at unannounced 40-s intervals. A 35 mm camera was used. In most of the interactions, targets were sitting and in the photographs both interactants were fully visible (from head to toe) unless they were seated behind a desk. Their faces were visible from the side in most cases (sometimes the face was not visible because they were looking away from the person with the camera). For a more detailed description of the recruitment and procedure refer to Hall, Smith LeBeau, Gordon Reinoso, and Thayer (2001), which used the same set of photographs. After the interaction, all 48 targets and all 48 coworkers reported their status relative to each other (*actual status*).

To obtain a *perceived status difference* measure (Sample 1), one of the four candid photographs from each dyad was randomly selected ($N = 48$). To avoid any environmental cues that might influence participants' judgments, the two people in the photograph were cut out with scissors and put against a neutral background (a white sheet of paper) while conserving the distance to each other as shown in the photograph. Appearance cues such as clothing, age, gender, and race were not omitted, however. There were 14 all-male dyads, 14 all-female dyads, and 20 opposite-gender dyads. These 48 photographs were put in a photo album in random order (with person ''A'' always on the left hand side and person ''B'' always on the right hand side; A and B randomly assigned to target and coworker). Participants were informed that the people depicted (targets) worked together and that in some photographs, one has higher status than the other and in other photographs, both are same status.

Participants were asked to rate the relative status of the two people in the photograph with respect to each other on a scale from 1 (person A is much higher status than person B) to 5 (person B is much higher status than person A) with 3 as the middle point indicating no status difference. For each dyad, these ratings were averaged across all perceivers, which means that the analyses are based on dyads ($N = 48$) as the unit of analysis.

To obtain a *perceived individual status* measure (Sample 2), all photographs (48 dyads $\times$ 4 photographs each) were assembled in random order in a photo album (without cutting out the targets, but with the target's coworker covered up). Perceivers then rated each target person in the photographs on status. They rated the status of the target person in relation to his or her coworker (in terms of their hierarchical position in the workplace) on a scale from 1 (lower than the other) to 9 (higher than the other). The ratings were averaged across perceivers (5 perceivers per target photograph) and across the four candid photographs per target. The analyses are based on targets ($N = 48$) because perceived individual status ratings were averaged across perceivers.

Calculating Accuracy of Judging Status

Measurement of actual status. Each target and each coworker indicated his or her status with respect to the interaction partner by answering the following question after their photographed interaction was over: ''How would you describe your hierarchical relation (in terms of rank, authority, or chain of command) to your partner in your office, department, or unit?'' on a scale from 1 (I am much lower than my partner) to 9 (I am much higher than my partner) with 5 indicating that both are about the same.

Accuracy of judging status difference. Three dyads were removed for the calculation of the status difference accuracy measure because in one dyad, the target person and the coworker both claimed to be higher status than the other and in two dyads there were missing values (resulting in a N of 45 instead of 48). For all other cases, if one person reported him- or herself to be either higher or equal status, the other reported him/herself to be either lower or equal status.[1] The difference between the target person's self-reported actual status and the coworker's self-reported actual status was calculated for each dyad (difference could range from -4 to $+4$) and was then correlated with perceived status difference across dyads (separately for male–male, female–female, and male–female dyads)

to obtain a measure of the accuracy with which relative status was judged.

Accuracy of judging individual status. To obtain a measure of the accuracy with which individual status of the targets was judged, targets' self-reported actual status was correlated with perceived individual status of targets, across targets (separately for male and female targets).

Mechanisms of Judging Status Accurately

Rating of behavioral and appearance cues. In the present investigation, we focused on behavioral cues and their relation to status. We used eight behavioral cues as potential indicators of status. These cues were selected because they covered the array of obvious behavioral cues displayed in the photographs and also because they are commonly used in the literature (e.g., Burgoon & Le Poire, 1999; Gifford, 1994).

Because status is a characteristic that is not exclusively conveyed through behavioral cues we included two appearance cues—age and formal dress—as potential status indicators in the list of cues measured. We selected age because it is a ubiquitous sign of status (Berger et al., 1972; Mazur, 1985) and we selected formal dress because Barnes and Sternberg (1989) found for a similar task that participants were most confident about using dress and neatness of appearance as status cues.

For all of the photographs (4 per target), the following target behaviors were rated on a 9-point scale by 5 raters per photograph: head position down/head position up; eyebrows lowered/eyebrows raised; posture slouched-slumped/posture still/erect; leaning backward/leaning forward; not smiling/intensely smiling. Behaviors assessed on a yes/no format were: arms crossed, self-touch, and elbow(s) resting on table, chair arm, or knee. The raters were an independent group from either Sample 1 or Sample 2 and are described in Hall et al. (2001). Each rater rated only one behavior. Interrater reliability (Cronbach's alpha among the five raters) ranged from .60 to .92 (median .76). For details on the ratings and their reliabilities refer to Hall et al. (2001). Also, for all targets in all photographs, two independent coders rated two appearance cues, namely the age of the targets and how formally dressed the targets were on a scale from 1 (very casual) to 6 (very formal). Reliability for age was $\alpha = .84$ and reliability for formally dressed was $\alpha = .87$. For each target, ratings were averaged across raters and the ratings of the four candid photographs were averaged together.

Results

All reported *p*-values are two-tailed.

Accuracy of Judging Status

Accuracy of judging status difference. To answer the question of whether targets and coworkers can be judged accurately in terms of their status relative to each other, perceived status difference was correlated with actual status difference across dyads (for all-male, all-female, and opposite-gender dyads separately). Table 1 shows that no matter what the gender composition of the dyad was, perceivers were significantly accurate in assessing status differences between targets and their coworkers. Combining the three results revealed a mean r of .71 and a weighted (by sample size) mean r of .73 (Rosenthal, 1991; Rosenthal & Rubin, 1982), which was significant according to both a fixed effects approach (Stouffer method, $Z = 4.72$, $p < .001$) and a random effects approach (single-sample t-test, $t(2) = 7.88$, $p = .016$) (Rosenthal, 1995).

Accuracy of judging individual status. Investigating whether individual targets' status can be judged accurately in isolation (i.e., when the interaction partner is not visible), perceived individual status was correlated with actual status (for female and male targets separately). Table 1 shows that female and male targets were both perceived accurately.

TABLE 1

Accuracy of Judging Status Difference and Individual Status

Accuracy	*r*	*p*
Status difference		
Male–male dyads (14)	.61	.02
Female–female dyads (11)	.70	.02
Male–female dyads (20)	.80	.0001
Individual status		
Male targets (30)	.55	.002
Female targets (18)	.64	.004

Note: *n* of targets is in parentheses.

Combining these two results revealed a mean r of .60 and a weighted (by sample size) mean r of .58, which was significant according to a fixed effects approach, $Z = 4.05$, $p < .001$, and marginally significant according to a random effects approach, $t(1) = 9.85$, $p = .064$.

Behavioral and Appearance Cues

Judgment policy. How much perceivers rely on a specific cue to assess status in others is what is called judgment policy of that particular cue. Judgment policy is operationalized by the correlation (across targets) between the cue and perceived individual status (averaged across perceivers, see Method for detailed explanation). Table 2 shows that for female targets, perceivers relied on more downward head tilt, more lowered eyebrows, and more forward lean (marginally so) as indicators of higher status. For male targets, perceivers relied on more formal dress, older age, and more forward lean (marginally so) as indicators of higher status. Perceivers used downward head tilt, lowered eyebrows, and formal dress as indicators of status significantly differently for female and male targets.

Encoding. How much a specific cue conveys actual status is what is called encoding, which is defined as the correlation (across targets) between the cue and actual target status. Table 2 shows that for female targets, more downward head tilt was the only cue significantly associated with higher actual status. For male targets, more formal dress and more forward lean were positively associated with higher actual status. This suggests that women expressed status differently than men.

Judgment policy accuracy. To what extent judgment policy matches encoding is expressed by judgment policy accuracy. Whereas for accuracy of judging status to be high, perceived status has to correspond to actual status, for judgment policy accuracy to be high, the way in which an array of different cues is used to assess status has to correspond to the way those cues were used to convey status. Table 2 shows that, in female targets, only one behavior (downward head tilt) was used by observers correctly in the sense that it was diagnostic for actual status in women. In male targets, formal dress and forward lean (marginally so) were the cues accurately used by perceivers. However, accuracy is not only obtained by using the ''right'' (diagnostic) cues but also by not using the ''wrong'' (not diagnostic) cues. We therefore looked at the pattern of cue utilization. To do so, we correlated judgment policy with encoding for female and male targets separately, across behaviors. This analysis reveals

whether people were able to discriminate correctly between the cues that are and are *not* diagnostic for status. Before doing so, we transformed the correlation coefficients in Table 2 into Fisher's z (a normalizing transformation) (Rosenthal & Rosnow, 1991). Judgment policy was significantly accurate for female targets, $r(8) = .88$, $p < .001$, and for male targets, $r(8) = .83$, $p < .01$. This means that the way perceivers used behavioral and appearance cues to assess status in both women and men was accurate, that is, it corresponded to the way those cues actually reflected women's and men's status.

Additional Effects of Gender

Target gender. Female and male targets did not differ in their actual status, $t(46) = 1.32$, $p > .10$. Also, perceivers did not differ in how they perceived the status of female and male targets, $t(46) = 1.37$, $p > .10$.

TABLE 2

Judgment Policy and Encoding for Perceived Individual Status (Sample 2), Female and Male Targets Separately

Behavioral and appearance cues	Female Targets		Male Targets	
	Judgment policy	Encoding	Judgment policy	Encoding
Upward head tilt	−.64**[a]	−.53**	−.21	−.21
Smiling	−.16	−.29	−.25	−.07
Resting elbows	.06	−.04	.06	−.02
Raised eyebrows	−.54*[b]	−.29	.22	−.12
Crossed arms	.33[a]	.43[c]	−.23	−.14
Erect posture	.25	.32	.13	.19
Forward lean	.41[+]	.24	.34[+]	.41*
Self-touch	−.30	−.16	−.11	.02
Age	.30	−.05	.52**	.22
Formal dress	.13[b]	.07	.64***	.46*

Note: Entries are Pearson correlation coefficients. Female targets $n = 18$, male targets $n = 30$. [+] $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

[a]Judgment policy for female targets and male targets differs at $p < .10$.

[b]Judgment policy for female targets and male targets differs at $p < .05$.

[c]Encoding for female targets and male targets differs at $p < .10$.

Additionally, there were no significant gender differences in any of the measured cues (all t's < 1.85).

Perceiver gender. We analyzed female and male perceivers separately in Sample 1 and results showed no perceiver gender differences. Note that we had no perceiver gender information available for Sample 2. For judgments of status difference (Sample 1), the accuracy results were as follows: male-male dyads and female perceivers, $r(14) = .59$, $p < .05$; male–male dyads and male perceivers, $r(14) = .63$, $p < .05$; female–female dyads and female perceivers, $r(11) = .72$, $p < .05$; female–female dyads and male perceivers, $r(11) = .67$, $p < .05$; male–female dyads and female perceivers, $r(20) = .80$, $p < .0001$; male–female dyads and male perceivers, $r(20) = .80$, $p < .0001$.

Opposite-gender dyads. Although overall, target gender did not show a difference in actual status, in opposite-gender dyads, male targets had marginally more actual status than female targets, $t(18) = 2.02$, $p = .058$. This suggests that using gender as a status cue in opposite-gender dyads might have increased accuracy. Indeed, male targets were perceived as higher status than female targets in opposite-gender dyads, $t(18) = 2.16$, $p = .044$. This could explain why accuracy of judging status was a little higher in male–female dyads as compared to same-gender dyads (Table 1, although this was not a significant difference, $Z = 0.96$, $p > .10$).

Discussion

The goal of the present research was to provide evidence for people's ability to assess status in others and to shed light on the mechanisms of status judgment accuracy. More specifically, we wanted to find out how people use certain behavioral and appearance cues to assess status, whether such an assessment strategy resulted in accuracy, and whether target or perceiver gender moderated the results. As expected, we found that people can assess status among social targets at better than chance levels, regardless of target gender or gender composition of the dyad (also regardless of the gender of the perceiver). In comparison to other domains of interpersonal sensitivity, accuracy of judging status seems high ($r = .55 - .80$). For instance, accuracy of inferring personality characteristics in others typically is around $r = .18–.45$ (Gifford, 1994).[2]

The strong result we found is not surprising given that status has most likely been pointed out as an important dimension of social interactions early on in our lives. Most of us, for instance, have been taught to respect people who have high status. Also, there seems to be ample opportunity to refine one's status judgments in everyday life and consequently attain high status judgment accuracy. Particularly in our workplace environment, we are confronted with people of differing statuses. Not only the opportunity to observe people in different status positions but also the easily available feedback from our first-glance status impressions can contribute to accuracy of judging status. When assessing other people's status, at one point we usually will have access to information about these people's actual status. This constant learning opportunity might result in a refinement of our status assessments and finally in increased accuracy of judging status. This situation differs markedly from the situation of judging others' emotions or personality traits, where we may get weak feedback on our accuracy because evidence for the true state of affairs may not be obvious or forthcoming. Thus, we may never know whether John, whom we just met, is truly sad or fearful, or conscientious, or whatever else we are judging, but we are likely to find out whether he has high or low status in the context.

What are the mechanisms behind such high accuracy? The only information available to perceivers in our study were the behavioral and appearance cues emitted by the interactants. Although perceivers did not differ in how accurately they assessed status in women and in men and how accurately they used the behavioral array to do so, results showed that perceivers differed in how much they relied on specific cues depending on whether the target was female or male. Perceivers used downward head tilt and lowered eyebrows significantly more as a sign of high status in women than in men. And, formal dress was used as a sign of high status in men significantly more so than in women. Note that this result was not due to male targets being more variable in how formally dressed they were than female targets.[3] The predominant role of appearance cues in posed photographs (as in Barnes and Sternberg's study) is not a surprise because in posed photographs people usually just stand side by side and look into the camera (which is exactly what they did in Barnes and Sternberg's study). In our study, however, people interacted in their work environment and were involved in tasks or discussions with much more variability in behavioral cues. Nevertheless, when judging male targets, perceivers mostly relied on appearance cues like formal dress and age. This is in line with findings from Anderson, John, Keltner, and Kring (2001) who could show that a concept related to appearance—attractive-

ness—was associated with higher status in men only. When judging status in women, behavioral cues seem to be more important than appearance cues even though people recall women's general appearance better than men's (Horgan, Schmid Mast, Hall, & Carter, 2004). One possible explanation could be that when assessing men, perceivers rely on the traditional signs of status—age and formal dress. Also, it might be possible that men engage in more status-related impression management than women and that perceivers are well aware of this. When assessing women, however, things are different. Because women have entered the workplace in top managerial positions only relatively recently, there might be less established appearance cues people can rely on when assessing female status. Therefore, perceivers might have focused more on behavior. In this realm, downward head tilt and lowered eyebrows (maybe an expression of looking critically at the other) are reasonable signs to use when gauging status.

The fact that in the present study only very few cues stood out when assessing status may indicate that impression formation of status is generally more of a Gestalt-like process. Under an ecological perspective, perceivers might rely more on configural cues rather than on single cues (Zebrowitz & Collins, 1997). Lending support to this interpretation is the fact that in female targets, only one cue—downward head tilt—was diagnostic of actual status *and* used by observers and that in male targets only two cues—formal dress and forward lean (marginally so)—were used correctly by observers and, nevertheless, overall accuracy was still high. In other words, how can observers be accurate in their judgment if they only rely on one or two cues? The answer to that lies in the fact that to obtain high judgment policy accuracy it is necessary to know what cues to rely on when assessing status and also to know what cues *not* to rely on. Perceivers showed an impressive ability to discriminate between diagnostic and non-diagnostic cues (judgment policy accuracy). Perceivers seemed to know that for male targets, for example, formal dress was more indicative of status than erect posture.

Unlike other studies of accuracy in judging emotion or personality (Ambady et al., 1995; Hall, 1984; Rosenthal et al., 1979), we did not find a perceiver gender difference nor a target gender difference in overall status judgment accuracy. Regarding perceiver gender, it might be the case that because status is a rather male stereotypical characteristic, male perceivers were better than they usually are in correctly assessing others' characteristics. This relative advantage for men might be responsible for the equal performance of men and women on status judgment accuracy under the assumption that women were not hurt by assessing a male

stereotypical characteristic. This question deserves future research attention especially since we could only address the perceiver gender question in Sample 1 because we did not have perceiver gender data for Sample 2.

Although research on emotional expression shows that women are more accurate encoders than men (Hall, 1984), we did not find a difference in the accuracy with which men's and women's status was judged. The finding that women are more legible than men is usually explained by women being more expressive than men. However, most of the interpersonal sensitivity research has focused on emotions, a rather female-typical domain. It might be the case that since status is a more male stereotypical characteristic, men conveyed status in a relatively more salient way than when conveying emotions. This might be the reason why no target gender difference emerged. Alternatively, women might not be so eager to project status as they are to project their emotions. Indeed, women seem to be status-leveling; they have a preference for more egalitarian social structures (Pratto, Stallworth, & Sidanius, 1997), are less willing to take over leadership positions (Megargee, 1969; Nyquist & Spence, 1986), and have a more democratic or participative leadership style than men (Eagly & Blair, 1990). This logic would mean that if women were actually trying to display their status, accuracy at judging them would be higher. More research is needed to shed light on the influence of domain specificity (male versus female stereotypical domain) on interpersonal accuracy and gender.

People in the photographs we used did not pose but were ''caught'' during a real interaction. We deliberately chose to use candid instead of posed photographs because we were interested in judgments of status *during* real social interactions and because we focused on behavioral cues. It needs to be acknowledged, however, that the fact of being photographed at unannounced intervals could have made targets somewhat self-conscious. Therefore, the ''realness'' is not absolute but relative to posing. To increase reliability of the judgments and behavioral and appearance codings, we used four candid photographs taken during a 5-min interaction and averaged ratings across the four photographs. Because our goal was to test whether accurate status assessments can be made in a glimpse (see Kalma, 1991), we refrained from using videoclips and excluded vocal and dynamic cues (speaking time, loudness of voice, etc.). We are, however, aware of the fact that motionless cues can be perceived as less realistic than animated cues (e.g., Zebrowitz & Montepare, 1989).

In terms of broadness of the static cues we used, we think that we used a reasonably comprehensive list because the number of cues significantly

related to actual and perceived status in our study is comparable to the number found in similar studies investigating trait dominance. For instance, in previous research, out of 10 measured verbal cues, none was related to the actual (self-reported) characteristic of ambitious-dominant and nine were related to the perception of ambitious-dominant (Gifford & Hine, 1994). Out of 38 measured nonverbal cues, four were related to the actual (self-reported) characteristic of ambitious-dominant and 12 were related to the perception of ambitious-dominant (Gifford, 1994). The goal of the present research was not to test whether the list of cues we assessed was comprehensive but rather to see how a reasonable selection of potentially important cues (mostly what other researchers on nonverbal behavior generally code and what makes sense for still pictures) affects status accuracy. It goes without saying that there might be more cues worth investigating in this realm, like, for instance, attractiveness (Anderson et al., 2001), height (Wilson, 1968), or babyface (Zebrowitz & Montepare, 1989), to mention just a few.

There is evidence that the cues we assessed can explain status accuracy because we obtained significant results from the judgment policy accuracy calculation. This lends some support to our conclusion that the way the measured cues were used to assess status was also the way those cues were used to convey status. Like other researchers before (e.g., Gifford, 1994; Gifford & Hine, 1994, Hall et al., 2004) we also found more behavioral correlates of perceived status (judgment policy) than of actual status (encoding). This is most likely due to stereotypes being stronger and more pervasive than actual effects.

Being accurate in assessing people's status has many advantages. For instance, it provides a competitive edge (e.g., time saved by quickly finding out who is the high status person one needs to talk to) and facilitates effective communication and smooth social interaction (e.g., knowing whom to direct a request to). The present investigation provided evidence that people were accurate in judging others' status and that target gender did not affect this ability. Moreover, we found that perceivers relied more on behavioral cues when assessing status in women (downward head tilt and lowered eyebrows) and that they relied more on appearance cues when assessing status in men (formal dress) and that in both cases they were right to do so. Also, our results suggest that people might use a more Gestalt-like approach to assess status in that they discriminate between diagnostic and not diagnostic cues and use them accordingly. The present investigation lays the ground for future studies, which could, for instance, aim at improving status judgment accuracy at the level of the individual.

Notes

1. There were some dyads in which one member said he or she was higher (or lower) and the other said equal. We calculated the difference between these ratings in the same way as we did when both agreed on their relative status.
2. Because our focus was not on individual differences in accuracy of judging status, we used aggregated perceiver data (i.e., targets are the unit of analysis) like Gifford (1994) did. It has to be noted, however, that studies on accuracy are not always comparable with each other in this way. For example, anytime we calculate profile correlations per individual judge and report out the average of these (testing it with the single sample *t*-test), these are not comparable because they do not benefit from the aggregation.
3. The standard deviation and range of ratings for formal dress was comparable between women ($SD = 1.15$, range: 1.5 – 5) and men ($SD = 1.13$, range: 1 – 5.38).

References

Ambady, N., Hallahan, M., & Conner, B. (1999). Accuracy of judgments of sexual orientation from thin slices of behavior. *Journal of Personality and Social Psychology, 77*, 538–547.

Ambady, N., Hallahan, M., & Rosenthal, R. (1995). On judging and being judged accurately in zero-acquaintance situations. *Journal of Personality and Social Psychology, 69*, 518–529.

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.

Barnes, M. L., & Sternberg, R. J. (1989). Social intelligence and judgment policy of nonverbal cues. *Intelligence, 13*, 263–287.

Berger, J., Cohen, B. P., & Zelditch, M. (1972). Status characteristics and social interaction. *American Sociological Review, 37*, 241–255.

Bernieri, F. J., & Gillis, J. S. (2001). Judging rapport: Employing Brunswik's lens model to study interpersonal sensitivity. In J. A. Hall & F. J. Bernieri (Eds.), *Interpersonal sensitivity: Theory and measurement* (pp. 67–88). Mahwah, NJ: Erlbaum.

Bernieri, F. J., Gillis, J. S., Davis, J. M., & Grahe, J. E. (1996). Dyad rapport and the accuracy of its judgment across situations: A lens model analysis. *Journal of Personality and Social Psychology, 71*, 110–129.

Borkenau, P., & Liebler, A. (1993). Convergence of stranger ratings of personality and intelligence with self-ratings, partner ratings, and measured intelligence. *Journal of Personality and Social Psychology, 65*, 546–553.

Burgoon, J. K., & Le Poire, B. A. (1999). Nonverbal cues and interpersonal judgments: Participant and observer perceptions of intimacy, dominance, composure, and formality. *Communication Monographs, 66*, 105–124.

Brunswik, E. (1956). *Perception and the representative design of psychological experiments*. Berkeley: University of California Press.

Buck, R. (1984). *The communication of emotion*. New York: Guilford.

Buck, R., Baron, R., & Barrette, D. (1982). Temporal organization of spontaneous emotional expression: A segmentation analysis. *Journal of Personality and Social Psychology, 42*, 506–517.

Chance, M. R. A. (1967). Attention structures as the basis of primate rank orders. *Man, 2*, 503–518.

Costanzo, M., & Archer, D. (1989). Interpreting the expressive behavior of others: The interpersonal perception task. *Journal of Nonverbal Behavior, 13*, 225–245.

Eagly, A. H., & Blair, T. J. (1990). Gender and leadership style: A meta-analysis. *Psychological Bulletin, 108*, 233–256.

Eibl-Eibesfeldt, I. (1989). *Human ethology*, New York: Aldine de Gruyter.

Ekman, P. (1982) *Emotion in the human face* (2nd ed.). Cambridge: Cambridge University Press.

Ellyson, S. L., & Dovidio, J. F. (1985). Power, dominance, and nonverbal behavior: Basic concepts and issues. In S. L. Ellyson & J. F. Dovidio (Eds.), *Power, dominance, and nonverbal behavior* (pp. 1–27). New York: Springer.

Gifford, R. (1991). Mapping nonverbal behavior on the interpersonal circle. *Journal of Personality and Social Psychology, 61*, 279–288.

Gifford, R. (1994). A lens-mapping framework for understanding the encoding and judgment policy of interpersonal dispositions in nonverbal behavior. *Journal of Personality and Social Psychology, 66*, 398–412.

Gifford, R., & Hine, D. W. (1994). The role of verbal behavior in the encoding and judgment policy of interpersonal dispositions. *Journal of Research in Personality, 28*, 115–132.

Halberstadt, A. G., & Saitta, M. B. (1987). Gender, nonverbal behavior, and perceived dominance: A test of the theory. *Journal of Personality and Social Psychology, 53*, 257–272.

Hall, J. A. (1984). *Nonverbal sex differences: Communication accuracy and expressive style*. Baltimore: Johns Hopkins University Press.

Hall, J. A., & Bernieri, F. J. (Eds.) (2001). *Interpersonal sensitivity: Theory and measurement*. Mahwah, NJ: Erlbaum.

Hall, J. A., Coats, E. J., & Smith LeBeau, L. (2004). *Dominance, status, and nonverbal behavior: A meta-analysis*. Manuscript submitted for publication.

Hall, J. A., Horgan, T., & Carter, J. (2002). Assigned status in relation to observer-coded and participant-reported smiling. *Journal of Nonverbal Behavior, 26*, 63–81.

Hall, J. A., Smith LeBeau, L. S., Gordon Reinoso, J., & Thayer, F. (2001). Status, gender, and nonverbal behavior in candid and posed photographs: A study of conversations between university employees. *Sex Roles, 44*, 677–692.

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*, 1332–1342.

Hofstede, G. (1991). *Cultures and organizations: Software of the mind*. New York: McGraw-Hill.

Horgan, T. G., Schmid Mast, M., Hall, J. A., & Carter, J. D. (2004). Gender differences in memory for the appearance of others. *Personality and Social Psychology Bulletin, 30*, 185–196.

Kalma, A. (1991). Hierarchisation and dominance assessment at first glance. *European Journal of Social Psychology, 21*, 165–181.

Keating, C. F., & Doyle, J. (2002). The faces of desirable mates and dates contain mixed social status cues. *Journal of Experimental Social Psychology, 38*, 414–424.

Keating, C. F., Mazur, A., Segall, M. H., Cysneiros, P. G., Divale, W. T., Kilbride, J. E., et al. (1981). Culture and the perception of social dominance from facial expression. *Journal of Personality and Social Psychology, 40*, 615–626.

Kenny, D. A., Albright, L., Malloy, T. E., & Kashy, D. A. (1994). Consensus in interpersonal perception: Acquaintance and the Big Five. *Journal of Personality and Social Psychology, 11*, 245–258.

Larsen, K. S., Triplett, J. S., Brant, W. D., & Langenberg, D. (1979). Collaborator status, subject characteristics, and conformity in the Asch paradigm. *Journal of Social Psychology, 108*, 259–263.

Lippa, R. (1998). The nonverbal display and judgment of extraversion, masculinity, femininity, and gender diagnosticity: A lens model analysis. *Journal of Research in Personality, 32*, 80–107.

Lorenz, K. (1966). On *aggression*. New York: Routledge.

Mazur, A. (1985). A biosocial model of status in face-to-face primate groups. *Social Forces, 64*, 377–402.

Megargee, E. I. (1969). Influence of sex roles on the manifestation of leadership. *Journal of Applied Psychology, 53*, 377–382.

Milgram, S. (1965). Some conditions of obedience and disobedience to authority. *Human Relations, 18*, 57–76.

Montepare, J. M., & Dobish, H. (2003). The contribution of emotion perceptions and their overgeneralizations to trait impressions. *Journal of Nonverbal Behavior, 27*, 237–254.

Moskowitz, D. S. (1990). Convergence of self-reports and independent observers: Dominance and friendliness. *Journal of Personality and Social Psychology, 58*, 1096–1106.

Nyquist, L. V., & Spence, J. T. (1986). Effects of dispositional dominance and sex role expectations on leadership behaviors. *Journal of Personality and Social Psychology, 50*, 87–93.

Pettit, G. S., Bakshi, A., Dodge, K. A., & Coie, J. D. (1990). The emergence of social dominance in young boys' play groups: Developmental differences and behavioral correlates. *Developmental Psychology, 26*, 1017–1025.

Pratto, F., Stallworth, L. M., & Sidanius, J. (1997). The gender gap: Differences in political attitudes and social dominance orientation. *British Journal of Social Psychology, 36*, 49–68.

Reynolds, D. J., & Gifford, R. (2001). The sounds and sights of intelligence: A lens model channel analysis. *Personality and Social Psychology Bulletin, 27*, 187–200.

Rosenthal, R. (1991). *Meta-analytic procedures for social research*. Newbury Park, CA: Sage.

Rosenthal, R. (1995). Writing meta-analytic reviews. *Psychological Bulletin, 118*, 183–192.

Rosenthal, R., Hall, J. A., DiMatteo, M. R., Rogers, P. L., & Archer, D. (1979). *Sensitivity to nonverbal communication: The PONS test*. Baltimore: The Johns Hopkins University Press.

Rosenthal, R., & Rosnow, R. L. (1991). *Essentials of behavioral research: Methods and data analysis* (2nd ed.). Boston: McGraw Hill.

Rosenthal, R., & Rubin, D. B. (1982). Comparing effect sizes of independent studies. *Psychological Bulletin, 92*, 500–504.

Schmid Mast, M. (2002). Dominance expressed in speaking time and inferred dominance based on speaking time: A meta-analysis. *Human Communication Research, 28*, 420–450.

Schmid Mast, M., & Hall, J. A. (2004). When is dominance related to smiling? Assigned dominance, dominance preference, trait dominance, and gender as moderators. *Sex Roles, 50*, 387–399.

Strayer, F. R., & Strayer, J. (1976). An ethological analysis of social agonism and dominance relations among preschool children. *Child Development, 47*, 980–989.

Watson, D. (1989). Strangers' ratings of the five robust personality factors: Evidence of a surprising convergence with self-report. *Journal of Personality and Social Psychology, 57*, 120–128.

Weisfeld, G. E., & Weisfeld, C. C. (1984). An observational study of social evaluation: An application of the dominance hierarchy model. *The Journal of Genetic Psychology, 145*, 89–99.

Wiggins, J. S. (1979). A psychological taxonomy of trait descriptive terms: The interpersonal domain. *Journal of Personality and Social Psychology, 37*, 395–412.

Wilson, P. R. (1968). Perceptual distortion of height as a function of ascribed academic status. *Journal of Social Psychology, 74*, 97–102.

Zebrowitz, L. A., & Collins, M. A. (1997). Accurate social perception at zero acquaintance: The affordances of a Gibsonian approach. *Personality and Social Psychology Review, 1*, 204–223.

Zebrowitz, L. A., & Montepare, J. M. (1989). Contributions of a babyface and a childlike voice to impressions of moving and talking faces. *Journal of Nonverbal Behavior, 13*, 189–203.