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The Spotlight Effect in Social Judgment: An Egocentric Bias in Estimates of the Salience of One's Own Actions and Appearance

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This research provides evidence that people overestimate the extent to which their actions and appearance are noted by others, a phenomenon dubbed the *spotlight effect.* In Studies 1 and 2, participants who were asked to don a T-shirt depicting either a flattering or potentially embarrassing image overestimated the number of observers who would be able to recall what was pictured on the shirt. In Study 3, participants in a group discussion overestimated how prominent their positive and negative utterances were to their fellow discussants. Studies 4 and 5 provide evidence supporting an anchoring-and-adjustment interpretation of the spotlight effect. In particular, people appear to anchor on their own rich phenomenological experience and then adjust—insufficiently—to take into account the perspective of others. The discussion focuses on the manifestations and implications of the spotlight effect across a host of everyday social phenomena.

Most of us stand out in our own minds. Whether in the midst of a personal triumph or an embarrassing mishap, we are usually quite focused on what is happening to us, its significance to our lives, and how it appears to others. Each of us is the center of our own universe.

Because we are so focused on our own behavior, it can be difficult to arrive at an accurate assessment of how much—or how little—our behavior is noticed by others. Indeed, close inspection reveals frequent disparities between the way we view our performance (and think others will view it) and the way it is actually seen by others. Whether making a brilliant point in a group discussion, contributing to a successful project, or executing the perfect jump shot on the basketball court, we sometimes find that the efforts we view as extraordinary and memorable go unnoticed or underappreciated by others. The same is true of the actions we wish to disown because they reflect poorly on our ability or character. They too may have less impact on our audience than we might think. An "obvious" social gaffe on a first date, an awkward stumble at the front of a line, or the misreading of a crucial passage of a prepared speech—each may seem shameful and unforgettable to us, but they often pass without notice by others.

The thesis we present in this article is that these disparities are frequent and predictable and reflect an egocentric bias in people's assessments of the extent to which their actions and appearance are salient to others. People tend to believe that more people take note of their actions and appearance than is actually the case. We dub this putative phenomenon the *spotlight effect*: People tend to believe that the social spotlight shines more brightly on them than it really does.

Several lines of research hint at the existence of such a spotlight effect. M. Ross and Sicoly's (1979) important work on responsibility allocation demonstrated that people are often so focused on their own contributions to a joint enterprise that their assessments of "who did how much" tend to be biased in their own favor. Ross and Sicoly's research dealt with egocentric biases in people's assessments of what transpired, but a similar effect may exist with respect to people's judgments of how salient their own efforts are to others. Actions that stand out in one's own mind and give rise to egocentric distortions in allocations of responsibility may likewise generate biased assessments of how salient one's actions are to others. The present research, then, picks up where Ross and Sicoly left off and explores how egocentric tendencies akin to those they examined tend to distort people's assessments of the extent to which their efforts are the subject of others' attention.

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Another intellectual tradition that makes contact with the spotlight effect is the work on naive realism (Gilbert & Gill, 1997; Piaget, 1929; L. Ross & Ward, 1996). *Naive realism* refers to the common tendency to assume that one's perception of an object or event is an accurate reflection of its objective properties, not a subjective interpretation or construal. This often entails the concomitant belief that because one's own perception is veridical, what one perceives oneself should be similarly perceived by most everyone else (Asch, 1952; Ichheiser, 1951; Piaget, 1926, 1928). Applied to the spotlight effect, this implies that it might be easy to confuse how salient something is to oneself with how salient it is to others. Precisely because our own behavior stands out in our own minds, it can be hard to discern how well (or even whether) it is picked up by others.

A third phenomenon relevant to the spotlight effect is the *self-as-target bias,* or the sense that actions or events are disproportionately directed toward the self (Fenigstein, 1984; Zuckerman, Kernis, Guarnera, Murphy, & Rappoport, 1983): "I'm not prepared today and I just *know* she's going to call on me"; "I bet those people giggling over there are laughing at me"; "The lead actress seems to be directing her lines primarily in my direction." The effect may be particularly familiar to academics, some of whom may have had an uninspiring athletic history: Little Leaguers who are "hidden" by their coaches in right field (where the ball is least often hit) nonetheless feel certain that the next fly ball will be hit their way. Not only that, but they are convinced that the opposing team has sensed their questionable talents and is *trying* to hit to right field. Like naive realism, then, the self-as-target bias reflects a confusion between what is available to oneself and what is likely to be available to (and hence guide the actions of) others. In Lewinian terms, it represents a failure to recognize fully that the representation of oneself in one's own "life space" is unlikely to be matched by an equally strong representation in the life space of others (Lewin, 1935).

As these different bodies of research suggest, the spotlight effect appears to arise largely from the same sort of egocentrism that Piaget argued pervades the thinking of young children (Flavell, Botkin, & Fry, 1968; Piaget, 1926, 1928, 1929). To be sure, adults are generally not as egocentric as they were as children, and they do not assume, as children often do, that everyone shares their perspective on the world. Still, it can be difficult for people to get beyond their own experience even when they recognize that they must. People know that others may see things differently than they do, and so they try to adjust from the anchor of their own experience (Jacowitz & Kahneman, 1995; Quattrone, 1982; Tversky & Kahneman, 1974) or correct from an initial characterization of how the episode feels to them (Gilbert, 1989). But, as is typically the case with such processes, the adjustment or correction tends to be insufficient, and so estimates of how one appears to others are overly influenced by how one appears to oneself (Kenny & DePaulo, 1993).

The research reported here examines the strength and pervasiveness of the spotlight effect and investigates its underlying causes. In the first three studies, participants' estimates of how prominent their actions and appearance are to others are compared with how they actually appeared to those present. The final two studies link the spotlight effect to the proposed process of anchoring and adjustment. The discussion focuses on a number of corollaries of the spotlight effect in everyday life.

Study 1

As an initial test of the spotlight effect, we conducted an experiment in which our target participants were required to don a potentially embarrassing T-shirt before briefly entering a room in which other participants were assembled. We then asked the target participants to estimate the number of people who noticed their shirt, and we compared the participants' estimates with the actual number who noticed. We predicted that people would be so consumed with their own knowledge of the shirt and the embarrassment it engendered that they would be unable to accurately assess how noticeable it was to others. In particular, we predicted that they would overestimate the number of people who noticed their shirt.

Method

Participants. One hundred nine Cornell University undergraduates volunteered to participate in exchange for extra credit in various lower-division psychology classes. Fifteen served as target participants (8 women, 7 men), 64 as observers, and 30 as controls in one of two conditions.

Procedure. The observers were scheduled for a time 5 min before each target participant was due to arrive. We scheduled 6 observers for each session, hoping that 5 would actually show up. The nonattendance rate was a bit higher than anticipated, however, resulting in one session with 6 observers, five sessions with 5, seven sessions with 4, and one session each with 3 and 2. On arrival, the observers were led to a laboratory room and asked to take a seat at a long table in the center of the room. Because chairs had been placed on one side of the table only, all participants took seats facing the doorway. The experimenter explained that they would begin by simply filling out a questionnaire, which the participants then worked on as the experimenter sat idly by.

Meanwhile, 5 min after the observers' arrival, the target participant arrived at another part of the lab. A second experimenter informed the target that the experiment would take place in another room, but, before going there, the target needed "to put on this T-shirt." The experimenter then handed the target a shirt with a large (21 cm × 24 cm) picture of the head and neck of singer Barry Manilow (a musician who is not terribly popular among college students) on the front. Interviews with pretest participants supported our intuition that a majority of Cornell undergraduates would be embarrassed by wearing a T-shirt depicting Barry Manilow's image. All participants nonetheless donned the shirt.

The second experimenter then directed the target to the room with the observers, and instructed him or her to knock on the door so that another experimenter could "guide you through the rest of the experiment." The target was then invited into the room and encouraged to sit in a chair that the first experimenter pulled up to the table on the side facing the observers. Just as the target was about to sit, however, the experimenter hesitated, appeared to mull something over, and stated that "on second thought," the others were too far ahead, and perhaps it would best if the target waited outside for a moment.

A moment later the other experimenter (the one who had greeted the target initially) emerged and joined the target in the hallway. The experimenter explained that the focus of the investigation was on "incidental memory, or people's awareness of things they are not told to pay attention to. . . . I would like to begin by asking you a number of questions to assess your incidental memory and your intuitions about other people's incidental memory." The experimenter explained that they would start with the target's intuitions about incidental memory, and asked the target "How many of the _____ people in the room you were just in would be able to tell me who is on your T-shirt?" It was made clear to participants that their estimates should not include the experimenter. After the target re-

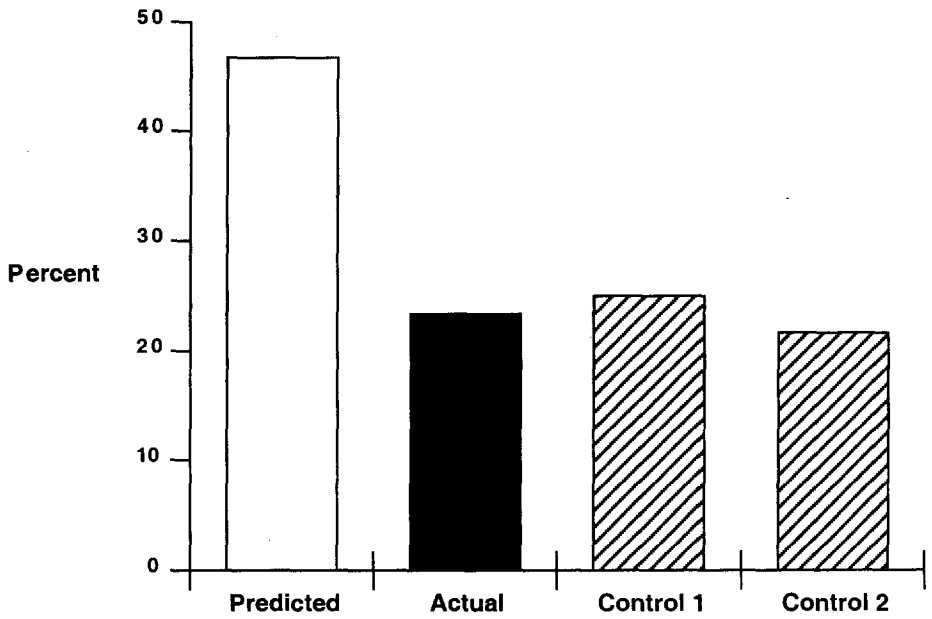

Figure 1. Predicted and actual percentage of observers able to identify the individual (Barry Manilow) depicted on the target's T-shirt. Control 1 participants estimated the number of observers who would be able to identify that it was Barry Manilow depicted on the target's T-shirt. Control 2 participants estimated the number who would be able to identify the person depicted on the target's T-shirt.

sponded, the experimenter explained that the study was over and the target was thanked and debriefed.

Meanwhile, the first experimenter asked the observers (individually, of course) whether they did indeed notice who was pictured on the target's shirt. In particular, the experimenter explained that the study was concerned with incidental memory, and, with that in mind, handed them a questionnaire that asked, amidst a number of filler items, whether they could remember the person pictured on the target's T-shirt. After answering these questions, the observers were thanked and debriefed.

Our measure of the spotlight effect, of course, was the difference between the estimates provided by the target participants and the actual accuracy rate of the observers. We contend that any systematic difference between predicted and actual accuracy derives from the T-shirt wearers' feelings of being "in the spotlight," and their inability to see themselves as they truly appeared to others. To ensure that any such difference was not due, in contrast, to faulty generalized intuitions about observers' powers of observation, we ran two control conditions. Participants in both of these conditions were shown a videotaped reenactment of the procedure, a reenactment that depicted what the target participant looked like as he or she entered the laboratory room, how long the target was in the room, where the observers were stationed, and how long they typically looked up to observe the target. One group of control participants was asked how many of 4 observers (the modal number of observers present in the experiment proper) would be able to tell the experimenter the identity of the person pictured on the target's T-shirt. For this control group, in other words, no mention was made of Barry Manilow. Participants in the other control group, in contrast, were asked how many of 4 observers would be able to tell the experimenter that it was Barry Manilow pictured on the target's T-shirt.

Results

Because there were different numbers of observers in the different experimental sessions, we converted to a percentage each target's estimate of the number of observers who would correctly state that it was Barry Manilow depicted on the T-shirt. The first two bars of Figure 1 present a comparison of the target participants' estimates and the actual accuracy of the observers. As expected, the target participants substantially overestimated the extent to which the observers were attentive to this salient (to themselves, at least) element of their personal appearance. The average estimate made by the targets was exactly twice as high as the average accuracy rate of the observers. To assess the reliability of this finding, we took each target's estimated percentage and subtracted from it the percentage of observers in that session who correctly identified Barry Manilow. The average discrepancy was 23%, for which the appropriate 95% confidence interval for the degree of overestimation ranged from 9% to 38%.[1] When we excluded the one session with two observers and the one with three observers, the mean discrepancy was 27% and the 95% confidence interval ranged from 11% to 43%.

[1] The tendency to overestimate the observers' accuracy was observed for both male and female targets, although there was something of a gender difference in both the target's estimates and the likelihood that a given target would elicit accurate identifications from the observers. In particular, men estimated that more observers would make correct identifications (M = 59%) than did women (M = 35%), a difference that was marginally significant, $t(13) = 1.92$, $p < .10$. However, Barry Manilow was also correctly recognized more often when the shirt was worn by a man (M = 30%) than by a woman (M = 17%), leaving no significant difference between males and females in the tendency to overestimate observers' accuracy (Ms = 29% and 18%, respectively), $t < 1$. Because no gender differences of any sort were observed in the other studies reported here, this finding may simply be an anomaly and receives no further discussion.

Although the target participants overestimated the salience of their T-shirt, their estimates were nonetheless grounded in reality. In particular, participants' estimates of the number of observers who would identify Barry Manilow were significantly correlated with the number of observers who actually did so ($r = .50$, $p < .05$). Thus, a pronounced judgmental error of one type exists side-by-side with substantial judgmental accuracy of a different type (Gilovich, 1991; Griffin & Tversky, 1992; Lee, Jussim, & McCauley, 1995).

The last two bars of Figure 1 present the estimates made by the control participants. Their estimates were clearly much lower than those provided by the targets themselves, indicating that the targets' inflated estimates are not simply the result of misguided general theories about observers' powers of observation. A one-way analysis of variance on the estimates provided by the targets and two groups of control participants revealed a significant effect, $F(2, 42) = 5.76$, $p < .01$. More focused comparisons revealed that the targets' estimates were significantly higher than those provided by control participants who were told that it was Barry Manilow on the target's T-shirt, $t(42) = 3.07$, $p < .005$, and those who were not, $t(42) = 2.66$, $p < .02$.

Discussion

This study provides clear support for the existence of the spotlight effect. Participants wearing a potentially embarrassing T-shirt allowed their own (quite understandable) focus on the shirt to distort their estimates of how much it would command the attention of others. This led them to substantially overestimate the number of others present who would be able to identify the person depicted on their T-shirt.

Their estimates also exceeded those of control participants who watched a videotaped reenactment of the procedure. This indicates that it was the feeling of being in the spotlight, not faulty abstract theories about the salience of T-shirt images or the powers of observation of the typical observer, that was responsible for the target participants' inflated estimates. However, because control participants saw a single videotaped reenactment of the procedure, one might question whether the videotape presented a misleading picture of the actual events, one that systematically lowered the control participants' estimates. To this we have two responses. First, we carefully staged and rehearsed the reenactment so that it would accurately capture what transpired in a typical session of the experiment. Second, Study 5 used a very different control for the influence of participants' abstract theories, and, as will be clear below, it leads to the same conclusion.

Study 2

Although the sense that "all eyes are upon us" may be particularly acute in embarrassing circumstances such as the one staged in Study 1, people doubtless feel that the spotlight is on them at other times as well. We suspect that people likewise overestimate how much others attend to them, for example, the first time they wear a new article of clothing they have purchased, when they have just had a haircut, or when they offer a witty retort in conversation.

We conducted Study 2 to examine whether the spotlight effect does indeed exist in non-embarrassing contexts. The study was a close replication of Study 1, except that instead of having participants wear a potentially embarrassing T-shirt, we asked them to wear a T-shirt depicting a famous person of their choice (from among three) that they would feel good about wearing. As before, we predicted that participants would substantially overestimate the number of observers who would notice the person depicted on their shirt.

Method

Participants. Seventy-nine students volunteered to participate for extra credit in various lower division psychology classes. Most of the students were Cornell University undergraduates; the rest were advanced-placement high school students attending Cornell's summer session. Fifteen served as target participants (6 women, 9 men), and the remaining 64 were observers.

Procedure. The procedure was virtually identical to that of Study 1, with the one change being that the T-shirt that each participant wore depicted a person with whom he or she felt pleased to be associated. Pilot testing had indicated that there was no person who was universally viewed as a positive T-shirt image. As a result, we gave participants a choice of wearing one of three T-shirts, bearing the faces of three individuals who received the highest ratings as desirable T-shirt images during pilot testing. Thus, the participants chose among T-shirts adorned with the faces of Bob Marley (27 cm × 29 cm), Jerry Seinfeld (23 cm × 27 cm), and Martin Luther King, Jr. (16 cm × 23 cm).

To ensure that we were successful in outfitting participants in a shirt in which they would be pleased to be seen, we had each participant rate the T-shirt he or she selected on several dimensions. In particular, participants rated on 9-point scales how *proud* (9) or *embarrassed* (1) they felt about wearing the shirt, how *happy* (9) or *unhappy* (1) it made them, and how *comfortable* (9) or *uncomfortable* (1) they were wearing it. After completing these ratings, the participants proceeded to the other lab room, and the events unfolded exactly as in Study 1.

As before, we tried to have 5 observers present for every session. We were successful in doing so for eight sessions; six additional sessions had 4 observers, and one session had 2.

Results and Discussion

The three ratings of the selected T-shirt were averaged to create an overall measure of how positively each participant viewed the prospect of wearing the shirt he or she had picked out. All but one participant rated the T-shirt above the midpoint of the scale, and the average rating across all participants was 6.4. The analyses below include the data from this one anomalous participant, but the overall pattern of results does not change if his data are excluded.[2]

Figure 2 displays the predicted and actual percentage of observers who noticed the identity of the individual depicted on the targets' T-shirts. As before, the target participants substantially overestimated how attentive the observers were to this element of their appearance. The average estimate made by the targets was six times as great as the observers' actual accuracy. As for the reli-

[2] Four participants chose the Jerry Seinfeld T-shirt, 5 chose the Martin Luther King, Jr., shirt, and 6 chose the shirt bearing the likeness of Bob Marley. Because of the small sample sizes, meaningful comparisons across participants who chose different shirts are difficult to make. Nevertheless, it is clear that except for the one participant who rated his chosen shirt (Martin Luther King, Jr.) below the midpoint on the three ratings, the participants choosing different shirts were equally pleased about wearing them (Ms = 6.5, 6.5, and 6.8).

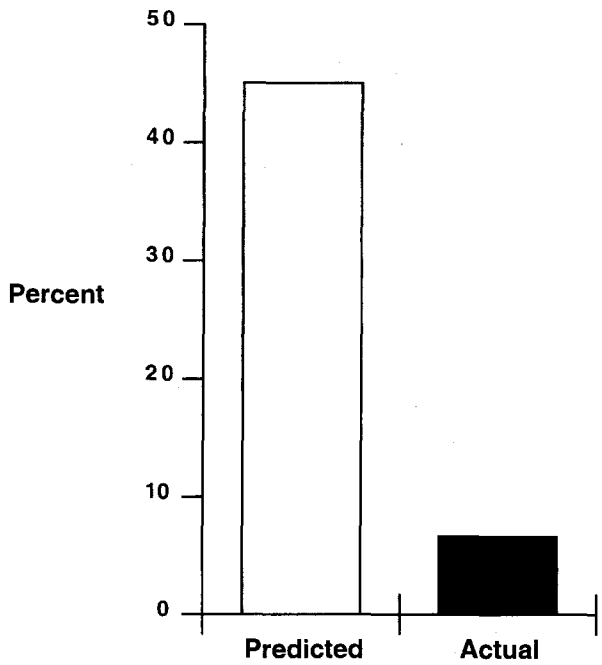

Figure 2. Predicted and actual percentage of observers able to identify the individual (Martin Luther King, Jr., Bob Marley, or Jerry Seinfeld) depicted on the target's T-shirt.

ability of this finding, we once again subtracted from each target's estimated percentage the actual percentage of observers in that session who correctly identified the person depicted on the T-shirt. The mean discrepancy was 40%, for which the relevant 95% confidence interval ranged from 21% to 59%.[3] When we excluded the one session with only 2 observers, the mean discrepancy was 36%, and the 95% confidence interval ranged from 17% to 56%.

The spotlight effect, it appears, is not limited to people's estimates of the salience of their embarrassing behaviors. Even when participants wore T-shirts they were not embarrassed to wear, they substantially overestimated the number of those present who would be able to identify the celebrities depicted on them.

Unlike Study 1, however, the estimates made by the target participants were uncorrelated with the number of observers who actually noticed the person depicted on the participants' T-shirts. Because so few observers were able to identify the person pictured on the T-shirts, this result is most parsimoniously explained as the result of range restriction.

Study 3

The aim of this study was to examine whether the spotlight effect exists, not just for attire or appearance, but for behavior and acts of "self-presentation" more generally. In particular, we sought to investigate whether people tend to believe that their positive and negative actions stand out to others more than they actually do. Accordingly, we had groups of participants engage in a discussion and afterward estimate how the group as a whole would rank everyone on a number of positive (e.g., "Who did the most to advance the discussion?") and negative (e.g., "Who made the greatest number of speech errors?") dimensions. We predicted that participants would think that their fellow group members would rank them higher than their fellow participants actually did and that this would be true for both positive and negative dimensions.

Method

Participants. The participants were 193 Cornell University undergraduates who received extra credit for participating.

Procedure. Forty-two groups of 3 to 7 participants took part in an experiment on "group dynamics."[4] On arrival, they were told that they would engage in a group discussion on an assigned topic and that, after the discussion, they would individually answer a number of questions about what transpired. The topic they were assigned was the "problem of the inner cities" in the United States.[5] More specifically, participants were asked to imagine that they were part of a commission appointed to investigate and formulate solutions to the problems confronting the inner cities. They were to discuss the issue for 20 min and then spend another 10 min drafting a "policy statement" containing their recommended solutions. To increase the likelihood that everyone would participate in the discussion, participants were told that each of them would have to indicate their approval of the policy statement by signing it.

After the discussion was completed and the policy statement signed, the participants were taken to separate cubicles to fill out the dependent measures. Four of the questions required participants to estimate how the group as a whole (on average) would rank all of the group members, themselves included, in terms of: (a) how much they advanced the discussion, (b) the number of speech errors they made, (c) the number of comments they made that may have offended someone, and (d) the number of comments they made that other members of the group might judge critically. After completing each question from the perspective of how the group as a whole would see it, participants were asked to rank everyone on the same four dimensions from their own perspective—as they themselves saw things. If participants thought the group's perspective and their own would not differ, they were to leave the latter question blank. The key dependent measure, then, was the difference between how participants thought others would rank them (derived from the "in the eyes of the group" rankings), and how everyone else actually did rank them (derived from everyone else's "own" rankings).

Two additional questions probed for the existence of the spotlight effect in slightly different ways. One required participants to estimate—from both

[3] The mean estimate made by the targets in this study (48%) was virtually identical to that made by the targets in the previous study who were wearing an embarrassing T-shirt (46%). The actual accuracy of the observers, in contrast, was dramatically different (8% vs. 23% in the present and previous studies, respectively). We cannot specify the cause of this difference with certainty, but we strongly suspect that it was due to the (uninteresting) fact that the questionnaire we had observers complete in the present study was more involving than the one used earlier. Note that the image size of the individuals depicted on the T-shirts used in the present study ($M = 22 \times 26$ cm) was comparable to that of Barry Manilow from before, and we doubt whether Manilow has a more recognizable visage than Jerry Seinfeld, Martin Luther King, Jr., or Bob Marley.

[4] We wanted 5 participants in each session, and so, mindful of the problem of "no-shows," we typically scheduled 6 or 7 people for each time slot. Because of the vagaries of nonattendance, however, we ended up with two groups of 3 participants, fifteen groups of 4, twenty-four groups of 5, and one group of 7 participants.

[5] We wanted a topic that participants would feel a bit awkward discussing in order to increase the number of speech errors and disfluencies they made. We suspected that a discussion of the inner cities, with its attendant issues of race and class, would do the trick. We have no way of assessing, however, whether our supposition was correct.

Table 1
Comparison of Discussants' Estimates of How Prominent Their Contributions Were to the Rest of the Group, and How Prominent Their Contributions Actually Were

Dimension	Predicted standing in the eyes of others	Actual standing in the eyes of others	Difference[a]	Mean correlation between predicted and actual
Advance discussion	2.69	2.84	−0.15*	.79**
Speech errors	2.30	2.96	−0.66**	.34**
Offensive comments	2.35	2.90	−0.55**	.65**
Comments judged critically	2.61	2.82	−0.21*	.51**
Remarkable comments	3.93	2.76	1.17**	.47**
Percentage spent talking	23.05	20.96	2.09*	.75**

[a] Calculated by subtracting actual standing from predicted standing. Because the first 4 dimensions involve a comparison of ranks, support for the spotlight effect is provided by a negative difference. For the last 2 dimensions, support for the spotlight effect is provided by a positive difference.
* $p < .05$. ** $p < .001$.

the group's and their own perspective—the percentage of time each person spent talking during the discussion. The other asked participants to write down what they thought were the five most remarkable comments made, whether good or bad. These five comments were to be written down in order, with the most remarkable comment listed first. Because it seemed odd to ask about what the group as a whole might view as the most remarkable comments, only the participants' own views were assessed for this question.[6]

To help participants with their rankings, two steps were taken. First, participants were required to wear large name tags during the discussion itself. Second, as they entered their cubicles to complete the questionnaire, participants were given a seating chart with the name of each participant written in the space he or she occupied during the discussion.

Results

The analyses reported below are based on a comparison of: (a) each participant's estimate of how the group as a whole would have ranked him or her and (b) the average actual ranking of that participant by all other members of the group. Thus, if a participant indicated that the group as a whole would have ranked him or her as having made the second most speech errors in the group, and the average of everyone else's ranking of that person was 2.5, this would constitute a spotlight effect of 0.5.[7] Because participants' responses in each group were clearly interdependent, all statistical tests were performed with the group as the unit of analysis; that is, the spotlight effect was averaged across all group members for each dimension.

The first two data columns of Table 1 present, for all 6 dimensions, participants' estimates of how prominent their contributions were to the other discussants and how prominent their contributions actually were to everyone else in the group. It is clear that participants thought that the other group members would rank them significantly higher than the other group members actually did on all six dimensions. The relevant t statistics (and associated p values with 41 degrees of freedom) were 2.27 (.05) for advancing the discussion, 6.84 (.00001) for number of speech errors, 7.07 (.00001) for comments that might have offended someone, 2.32 (.05) for comments that might be judged critically, 3.25 (.01) for the percentage of time spent talking, and 4.47 (.0001) for the most remarkable comments made.[8]

Although participants clearly exaggerated the salience of their own contributions to the group discussion, once again their estimates were nevertheless grounded in reality. The fourth data column of Table 1 presents, for all six dimensions, the average within-group correlation between how highly participants thought their fellow group members would rank them and the average ranking the other group members actually assigned them. These average correlations are all quite high, indicating that participants

[6] In an effort to explore the generality and variability of the spotlight effect in this paradigm, we had participants engage in their group discussions and make their estimates under a variety of conditions that the literature on objective self-awareness suggests might influence its strength (Carver & Scheier, 1978; Duval & Wicklund, 1972; Fenigstein & Abrams, 1993; Gibbons, 1990; Hass, 1984; Stephenson & Wicklund, 1983; Wicklund, 1975). Some participants engaged in their group discussion while ostensibly being videotaped; others made their estimates while stationed in front of a mirror. These manipulations had no significant effect on any of our dependent measures, perhaps because the level of self-awareness was probably quite high in all conditions. (Note that participants in every condition were face-to-face with their peers throughout the group discussion and that the presence of other people has frequently been used in past research to increase self-awareness.) The self-awareness manipulations thus receive no further discussion.

[7] The comparisons for two of the questions were slightly different. For the percentage of time spent talking, we simply compared the percentage that participants thought their fellow discussants would assign them with the average percentage their fellow discussants actually did assign them. For the question about the most remarkable comments, the analysis was conducted as follows. The first comment listed by a participant was assigned a score of "5," the second comment a score of "4," and so on, with the last comment listed assigned a score of "1." The extent to which a given participant thought her own comments were remarkable, then, could be estimated by the sum of the scores of all of her own comments that she included in her list. This sum was then compared with the average sum assigned to that person's comments by all other group members. When no comments by a particular participant were listed, either by the participant herself or by another group member, a score of "0" was assigned and the calculations were carried out as just described.

[8] All of these results remained statistically significant when we removed from the analysis the one group that had 7 participants and the two groups that had 3.

who thought they did much to advance the discussion really did so to a substantial degree (in the eyes of their fellow group members, at least), those who thought they might have offended someone did indeed make offensive remarks, and so on. When the average of these correlations across all 42 groups is compared to the null hypothesis of zero, highly significant results are obtained for all six dimensions. The relevant one-sample t statistics (and associated p values) were: 18.76 (.00001) for advancing the discussion, 4.18 (.0001) for number of speech errors, 8.99 (.00001) for comments that might have offended someone, 5.94 (.0001) for comments that might be judged critically, 15.58 (.00001) for the percentage of the discussion time spent talking, and 6.62 (.00001) for the most remarkable comments made.

Discussion

The results reinforce those obtained in Studies 1 and 2 and provide clear, consistent, and substantial support for the existence of the hypothesized spotlight effect. Whether assessing their positive (e.g., advancing the discussion) or negative (e.g., offending someone) contributions, participants overestimated the salience of their own behavior to the other members of the group. They thought that the other group members would rank them significantly higher on all six dimensions than the other group members actually did. It thus appears that the average person's actions command less attention from others than he or she suspects, and that the social spotlight may shine less brightly than he or she believes.

The observed bias in people's estimates of how salient their actions are to others does not mean, of course, that people are completely inaccurate about the impressions they make. Indeed, participants' estimates of how they would be ranked by the other group members were significantly correlated with the other group members' actual rankings of them on all six dependent measures. People who thought they would be ranked highly on, say, the percentage of time they spoke did indeed tend to be ranked highly on that dimension. As in Study 1 (but not Study 2), judgmental accuracy of one type existed alongside judgmental error of another.

Study 4

Having documented the spotlight effect in two very different paradigms and for both embarrassing and nonembarrassing behaviors, we turn our attention to the mechanism that gives rise to this phenomenon. Recall that we have proposed an anchoring-and-adjustment explanation of the spotlight effect. Because people are often intently focused on their own behavior and its appropriateness to the existing circumstances, they can find it difficult to escape the anchor of their own experience when estimating how their actions appear to others.

To obtain evidence for such an anchoring-and-adjustment process, we used a very direct procedure—we asked participants how they arrived at their estimates. Because of the much-discussed difficulties people can have accurately reporting their mental processes (Nisbett & Wilson, 1977), we did not expect them to provide a point-by-point account of how they anchored on their own experience and then adjusted downward. Indeed, we did not expect participants to report accurately on their *process* of judgment at all. However, we did expect them to be able to report accurately on an important *product* of judgment, one that would provide a very telling clue to their underlying judgmental process. In particular, when asked if they had considered any responses other than the one they gave, we expected participants to report having first contemplated an alternative value that was higher than their ultimate answer. This would provide evidence consistent with our contention that participants first consider a value in line with their own intense phenomenological experience and then adjust downward.

We tested participants in a close replication of the T-shirt studies described earlier. In particular, participants who were asked to wear an embarrassing T-shirt were sent into a room occupied by several other people and then asked to estimate the number of observers who would be able to state who was depicted on the shirt. Participants were then asked why they responded as they did and were probed for whether they had entertained any other answers before settling on their final response. We predicted that participants would be much more likely to cite alternative values that were higher than their ultimate answers than to cite values that were lower, a result that would be consistent with our anchoring-and-adjustment account.

Method

Participants. Forty-four Northwestern University undergraduates were each paid $7 to participate.

Procedure. The procedure was a replication of the earlier T-shirt studies with two modifications. First, the T-shirt that participants were induced to wear depicted Vanilla Ice, a pop icon whose "15 minutes of fame" had passed by the time this study was run. Beneath the visage of Vanilla Ice were the words "Ice, Ice, Baby." The second modification involved the individuals stationed in the room the participant was asked to enter and whose powers of observation the participant was required to estimate. In Studies 1 and 2, these individuals were themselves naive participants, and this allowed us to compare the targets' estimates with the actual accuracy of the observers. However, because Studies 1 and 2 provided clear evidence for the spotlight effect using this paradigm, we felt it was unnecessary to replicate that portion of the experiment. Instead, because we found it easier to schedule confederates than to recruit such a large number of participants, the individuals stationed in the room the participant entered were confederates coached to act like participants taking part in psychological research. As in Studies 1 and 2, they were seated in a conference room around a rectangular table and appeared to be completing questionnaires. As each participant entered the room, the confederates were coached to look up at the participant as he or she entered their field of vision. The confederates were instructed to avoid staring at the participant; instead, they were told to look up at the participant briefly and then return to the questionnaire they were ostensibly completing. The confederates did so unaware of the purpose of the research.

As in Studies 1 and 2, the participant remained in the room for only a few moments before being told to wait outside. There, the participant was greeted by the experimenter and asked to estimate how many of those present in the other room would be able to state that it was Vanilla Ice on their T-shirt. They were then asked to explain how they had arrived at their answer. The latter question was completely open-ended and was covertly recorded by a hidden video camera. Then, of key interest, participants were asked, "Before you came up with your final answer, did you think about any other numbers?"

Results and Discussion

Because participants wearing the Vanilla Ice T-shirt walked in on a group of confederates, there is no way to assess whether they experienced the spotlight effect except to compare their estimates with those offered by participants in Studies 1 and 2. Indeed, participants' estimates in this study were very close in magnitude to those in the earlier studies. The average estimate (converted to a percentage) made by participants in this study was 48%, a value very close to the corresponding average in Study 1 (46%) and Study 2 (48%).

When asked why they gave the answers they did, the participants' responses were right out of Nisbett and Wilson (1977). Thirty-eight of the 44 participants mentioned something about the number of people in the room who looked up, how the others were oriented, or how absorbed they appeared to be with what they were doing. Although these observations doubtless influenced many participants' estimates, it is also true that they reflect the type of abstract theorizing about what "ought" to influence such judgments that Nisbett and Wilson argued should be viewed with skepticism.

More important for our purposes were participants' responses to whether they had considered any other numbers before arriving at their answers. Thirty-two (73%) said that they had. Of these, 2 participants cited a pair of other numbers that flanked their ultimate answer. Of the remaining 30 participants, 23 (77%) cited a number (or in some cases a pair of numbers) that was higher than their ultimate answer (binomial $z = 2.74$, $p < .01$).

To the extent, then, that participants' ultimate estimates are the result of some adjustment or correction from an initially considered value, it is clear that most participants started high and adjusted downward rather than vice versa. Of course, such a result might easily be an artifact if participants' ultimate answers were very low (and thus there was not much room at the low end for them to have considered an even lower value). But note that participants' estimates were smack in the middle of the response scale (48%) and thus cannot be explained as a simple "floor effect." Instead, these results support our contention that individuals begin their process of judgment by focusing on their own rich phenomenological experience and then adjust downward to take into account an abstract (and realistic) sense that others are less focused on them than they are on themselves. Because such adjustment is typically insufficient, people end up believing that others have attended to them more than is actually the case.

Because these data are based on participants' introspections about their psychological processes and the accuracy of such introspections has been called into question, the results should be viewed with some caution. We hasten to point out, however, that the core of these data are reports of the products of an underlying psychological process, not reports of the psychological process itself. Reports of the products of one's mental processes are generally considered more veridical than reports of the processes that give rise to them (Nisbett & Wilson, 1977). Still, one's confidence in the mechanism we have offered as an explanation of the spotlight effect would be substantially increased by supportive evidence that does not rely on a self-report methodology. Study 5 was designed with that in mind.

Study 5

Another way to test the anchoring-and-adjustment interpretation of the spotlight effect would be to manipulate the subjective strength of a person's initial anchor while holding constant the objective strength of the stimulus. How?

In the T-shirt studies described thus far, the participants encountered the observers immediately after having donned the shirt. Thus, when asked to estimate how many would have been able to identify the person pictured on their shirt, their processes of judgment began with a powerful representation of how salient the T-shirt was in their own minds. The adjustment away from their own representation thus started from a very high baseline. But what would happen if a period of time elapsed, and they were allowed to habituate to the T-shirt? We suspect that people would be less focused on wearing such a shirt, and so their assessments of the likelihood that others would notice would start from a lower anchor. They should therefore exhibit less of a spotlight effect.

We conducted just such a test of the underlying mechanism in Study 5. Participants were asked to wear the same Barry Manilow T-shirt used in Study 1 and were then sent into a room occupied by several other people. Some participants were sent into this other room immediately (immediate condition); others after a substantial delay (delay condition). All participants were then asked to estimate the number of observers who would be able to state that it was Barry Manilow depicted on the shirt. We predicted that those who entered the room after a delay, and who therefore were less consumed with wearing such a shirt, would give lower estimates than those who entered right away—despite the fact that the participants in the two conditions wore the identical shirt.

Method

Participants. Thirty Northwestern University undergraduates were each paid $7 to participate. The data from 4 additional participants were discarded because of procedural errors on the part of the confederates.

Procedure. The procedure was a replication of Study 4, but with two conditions. Participants asked to wear a Barry Manilow T-shirt were led to a room with 6 others present (all confederates) either immediately upon donning the T-shirt or after a 15 min delay.[9] Those in the delay condition spent the 15 min seated alone in a large computer lab near the conference room they would eventually enter. While seated there, they were asked to complete an unrelated survey. During this time, they could hear a series of staged conversations emanating from some of the nearby hallways, but no one ever appeared in the room in which they were seated. This was done to reinforce to participants that they were in a public setting (thereby facilitating their habituation to the T-shirt) but to prevent them from actually encountering anyone (thus preventing them from sizing up whether any passersby seemed to be noticing their shirt).

After emerging from their brief encounter with the confederates, participants in both the immediate and delay conditions were met by the first experimenter, who explained that the study was designed to investigate people's incidental memory. Participants were then asked how many of the people in the other room would be able to state that it was Barry Manilow on their T-shirt.

[9] In one session, only five observers were present, and the relevant response options were adjusted accordingly.

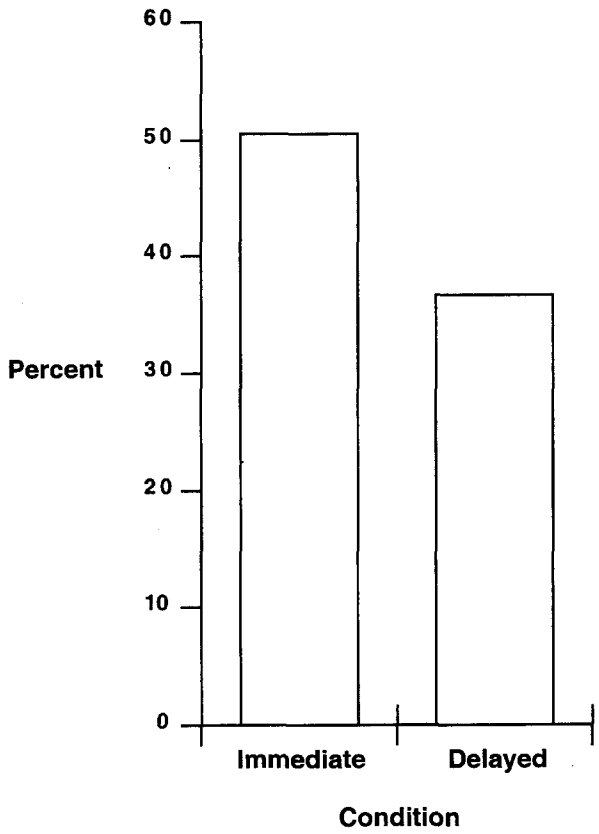

Figure 3. Predicted percentage of observers able to identify the individual (Barry Manilow) depicted on the target's T-shirt, by condition.

Results and Discussion

Did participants in the immediate condition estimate that more observers would notice that it was Barry Manilow on their T-shirt than participants in the delay condition? As is clear from Figure 3, they did. Those in the immediate condition estimated that 51% of the observers would have noted the Barry Manilow T-shirt, whereas those in the delay condition estimated that only 37% of the observers would do so, $t(28) = 2.26, p < .05$. A period of time in which to acclimate to wearing the T-shirt thus lowered participants' estimates of its salience in the eyes of others.

This finding supports the anchoring-and-adjustment process that we contend gives rise to the spotlight effect. Because participants in the delay condition were allowed to habituate to the T-shirt, it was a less intense focus of their own experience. Less concerned with the shirt themselves, they concluded that it would be less noticeable to others as well. It thus seems that the process of determining how one's actions and appearance are perceived by others begins with an assessment of how they appear to oneself (Kenny & DePaulo, 1993). People typically understand that their own actions and appearance are not as salient to others as they are to themselves, and they take that into account when estimating how they are perceived by others. But because such adjustments are generally insufficient, they typically end up overestimating their own prominence in the eyes of others. The results of Study 5 reveal a portion of this anchoring-and-adjustment process by showing that when the initial anchor of a person's own phenomenological experience is lowered through habituation, the resulting estimates are lowered as well.

These results also serve to rule out a variety of potential alternative interpretations of the data obtained in Studies 1 and 2. These results make it clear, for example, that the earlier findings cannot be due to participants' misunderstanding or misapplication of the response scale, nor to faulty general intuitions about observers' attentiveness and visual acuity. Doubt was cast on the latter interpretation, of course, from the control participants of Study 1 who witnessed a videotaped reenactment of the procedure and did not overestimate the number of observers who would notice the target's T-shirt. The data from Study 5 rule it out entirely because participants in the immediate and delay conditions had the same general intuitions about what observers can be expected to notice, and yet they gave significantly different estimates—estimates that differed in the direction to be expected from the anchoring-and-adjustment process that we believe underlies the spotlight effect.

General Discussion

The research presented here supports our contention that people tend to believe that they stand out in the eyes of others, both positively and negatively, more than they actually do. Participants in Study 1 who were asked to don an embarrassing T-shirt overestimated the number of observers who noted that it was the singer Barry Manilow pictured on the shirt. Participants in Study 2 who were asked to wear T-shirts bearing the images of figures of their own choosing from popular culture likewise overestimated the number of observers who noted the individuals depicted on their shirts. Contributors to a group discussion in Study 3 thought their minor gaffes and positive contributions to the session stood out more to their fellow discussants than they actually did. It thus appears that people overestimate the extent to which others are attentive to the details of their actions and appearance. People seem to believe that the social spotlight shines more brightly on them than it truly does.

In other research, we have examined a number of everyday corollaries of the spotlight effect. For one, if people overestimate the extent to which others are attentive to their momentary actions and appearance, it stands to reason that they will also overestimate the extent to which others are likely to notice the variability in their behavior and appearance over time. Perhaps the best example of this phenomenon is reflected in the widespread fear of having a "bad hair day." Clearly, the fear of having such an affliction is not simply that one's hair can be recalcitrant and that rogue strands of hair can sprout in the most unfortunate places—it is that other people will notice any such aberrations that arise. But the research on the spotlight effect suggests that this concern may be often overblown. The variability that an individual readily perceives in his or her own appearance is likely to be lost on most observers. To others, one's putative bad hair days may be indistinguishable from the good. This phenomenon is hardly limited to physical appearance, of course. Academics, who frequently deliver the same lecture numerous times, are often surprised to find that marked fluctuations in their own assessment of their performance (whether they "nailed" or "bombed" a talk) are not met by corresponding fluctuations in their audiences' reactions. The variability that one

so readily sees in oneself—and expects others to see as well—often goes largely unnoticed.

We have obtained empirical support for this tendency for individuals to overestimate the variability that others see in their appearance and behavior. In several experiments, respondents were asked to anticipate how others would rate them across several different occasions. The variability in these expectations was then compared with the variability in how observers actually judged them over time (Gilovich, Kruger, Medvec, & Savitsky, 1999). In one study, for example, we approached students in an undergraduate seminar on five (unannounced) occasions throughout a semester. On each occasion, the students were asked to rate, on a 7-point scale, how they thought they appeared to everyone else on that particular day relative to how they appeared on most other days. Did they think others would see them as having a good day or bad day in terms of physical appearance? All students then rated each other, relative to each student's usual appearance, on the same scale. As expected, participants predicted substantially more variability (24% more) in others' ratings of them than was actually the case.

Another corollary of the spotlight effect that we have examined involves people's assessments of how apparent their internal states are to those around them. The spotlight effect consists of an exaggerated sense of the salience of one's overt actions or appearance. Perhaps a similar bias exists in people's estimates of how readily their internal states can be discerned by others. Indeed, the same psychological processes that make it difficult to get beyond one's own experience and accurately anticipate how one's actions appear to others may make it difficult to estimate how much of one's internal experience is "leaking out" and is available for all to see.

We have conducted a number of experiments that support the existence of such a phenomenon, which we have termed, after Miller and McFarland (1987, 1991), the "illusion of transparency." In one set of studies, for example, parties to a negotiation thought they "gave away" more information about their preferences than was actually the case (Van Boven, Medvec, & Gilovich, 1999). Elsewhere we have shown that individuals who are asked to lie overestimate the extent to which their prevarications are apparent to others and that participants asked to taste pleasant and foul-tasting drinks while maintaining a neutral facial expression overestimated observers' ability to determine which drinks were which (Gilovich, Savitsky, & Medvec, 1998).

A final set of studies linked the illusion of transparency to bystander (non)intervention (Latane & Darley, 1970). In particular, witnesses to a potential emergency situation typically behave in a nonchalant manner that masks their underlying concern in order to avoid looking like an alarmist. Yet these same individuals are willing to conclude from the apparent calm of others that there really is no emergency. Why? Why don't individuals view the apparent calm of others the way they view their own apparent calm—as a "front" that masks their true concern? In part, we have found, it is because people are prone to an illusion of transparency. People assume, incorrectly, that much of their own concern leaks out and is available for all to see. This makes their own reactions different—to them at least—from that of their fellow bystanders, and so everyone else's nonchalance is taken, not as evidence of a similar willful suppression of alarm, but as a genuine signal that there is no real emergency (Gilovich et al., 1998).

Both the spotlight effect and illusion of transparency appear to derive from the same anchoring-and-adjustment mechanism. People are often quite focused on what they are doing (the spotlight effect) or what they are feeling (the illusion of transparency). To be sure, they realize that others are typically less attentive to their actions or have less access to their internal states than they themselves, and they take that realization into account when trying to anticipate how they appear to others. As is typically the case with such anchoring-and-adjustment processes, however, the adjustment is insufficient (Gilbert, 1989; Jacowitz & Kahneman, 1995; Quattrone, 1982; Tversky & Kahneman, 1974), and so people end up believing that the perspective of others is more like their own than is actually the case.

We obtained support for this anchoring-and-adjustment interpretation of the spotlight effect in two studies. In Study 4, participants who were asked if they had considered any other estimates before arriving at their ultimate answer were much more likely to say that they had considered a value higher than their reported answer than a value lower than their reported answer. Individuals thus tend to start high and adjust downward. In Study 5, some participants encountered a group of observers immediately after having donned a T-shirt they perceived as embarrassing and others did so only after having acclimated to wearing the shirt. As predicted, participants in the latter condition gave significantly lower estimates of the number of observers who would notice the "embarrassing" T-shirt than did those in the former condition—presumably because, being less consumed with wearing the shirt, their estimates began from a lower subjective anchor. It should be noted that converging evidence for such an anchoring-and-adjustment mechanism was likewise obtained for the illusion of transparency (Gilovich et al., 1998).

To be sure, people do not always overestimate the extent to which their appearance and behavior are noticed by others. Under what conditions, then, might people not feel as if the social spotlight is on them? Indeed, when might people actually underestimate the extent to which they are being scrutinized by others? Our anchoring-and-adjustment model implies that the answer lies in the nature of the target person's phenomenology. When individuals are themselves quite conscious of their own actions or appearance, they are particularly likely to overestimate their prominence in the eyes of others. When individuals are less focused on themselves—when their behavior is routinized and automatic, or when they have acclimated to some aspect of their appearance as in Study 5—they may be less likely to feel like they are in the spotlight.

This implies that something of a reverse spotlight effect might occur when people are not at all conscious of their own behavior and yet their actions are quite noticeable to others. It is in these situations that people are most likely to underestimate how prominent their actions and appearance are in the eyes of others. Smokers, for example, frequently underestimate how invasive and troubling their habit is to others because, having engaged in the habit so often, they often partake of it mindlessly. Likewise, those who douse themselves regularly with excessive amounts of cologne may underestimate how readily it is detected by others because they themselves have grown accustomed to the scent. More generally, as the results of Study 5 demonstrate, repeated exposure and habituation can dampen the spotlight effect, and perhaps sometimes even reverse it.

Are there developmental changes in the magnitude of the type of phenomena we have examined in this article? It is often noted that teenagers, for example, seem particularly concerned with how they appear in the eyes of others (Elkind, 1967). They often "would rather die" than be seen with the wrong friends, the wrong fashions, or the wrong parent (or any parent, for that matter). Does the anguished attention that teenagers devote to their own behavior and appearance make them even more likely than adults to overestimate the extent to which they stand out in the eyes of others? Although we know of no hard evidence on this issue, it strikes us as a particularly likely possibility and is a promising topic of future research. Indeed, if such a developmental trend were documented, the research itself might be used to dampen the excessive concern that adolescents often have about how they are viewed by others. If so, it might diminish some of the "thousand natural shocks" that adolescence is heir to.

Turning to an issue more commonly associated with a later phase of life, the spotlight effect has implications for the type of regrets people are likely to experience. Elsewhere we have shown that people's biggest regrets tend to center around things they have failed to do in their lives, rather than around things they have done (Gilovich & Medvec, 1994, 1995). Regrets of inaction have many sources. Some stem from a lack of will, as when an individual who opts for more immediate gratifications ultimately regrets that he or she never earned a college degree. Others arise from the difficult decisions and wrenching trade-offs with which life confronts most people. Those obsessed with career pursuits, for example, can come to regret not having spent more time with their children, whereas those who lavish time and attention on their kids can regret not pursuing a career more diligently. Still other regrets of omission, however, appear to result from a reluctance to seize an opportunity because of a fear of failure and the social censure it might bring. Individuals do not reach out to others because of a fear of rejection and how it will be perceived; people do not dance, sing, play a musical instrument, or join in the organization's softball game because of the fear that they will look bad.

The present research suggests that a great many of these fears may be misplaced or exaggerated. Other people may be less likely to notice or remember our shortcomings than we typically expect. Indeed, it was our earlier work on regret, and the observation of the many regrets of inaction that stemmed from a concern with how failure would look to others, that led to the present research on the spotlight effect. The lesson of this research, then, is that we might all have fewer regrets if we properly understood how much attention—or inattention—our actions actually draw from others. We might take a modest step toward more fulfilling lives, in other words, if we took stock of a few of Abraham Lincoln's more memorable words and understood that "people will little note, nor long remember" what we say or do. Of course, Lincoln was wrong about his own words and about that speech in particular. But there are precious few Lincolns. His words nicely fit the rest of us, however, for whom the social spotlight has less wattage than we generally believe.

References

Asch, S. E. (1952). *Social psychology.* New York: Prentice-Hall.

Carver, C. S., & Scheier, M. F. (1978). Self-focusing effects of dispositional self-consciousness, mirror presence, and audience presence. *Journal of Personality and Social Psychology, 36,* 324–332.

Duval, S., & Wicklund, R. A. (1972). *A theory of objective self awareness.* New York: Academic Press.

Elkind, D. (1967). Egocentrism in adolescence. *Child Development, 38,* 1025–1034.

Fenigstein, A. (1984). Self-consciousness and the overperception of self as a target. *Journal of Personality and Social Psychology, 47,* 860–870.

Fenigstein, A., & Abrams, D. (1993). Self-attention and the egocentric assumption of shared perspectives. *Journal of Experimental Social Psychology, 29,* 287–303.

Flavell, J. H., Botkin, P. T., & Fry, C. L. (1968). *The development of role-taking and communication skills in young children.* New York: Wiley.

Gibbons, F. X. (1990). Self-attention and behavior: A review and theoretical update. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 23, pp. 249–303). San Diego, CA: Academic Press.

Gilbert, D. T. (1989). Thinking lightly about others: Automatic components of the social inference process. In J. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 189–211). New York: Guilford Press.

Gilbert, D. T., & Gill, M. J. (1997). *The momentary realist.* Unpublished manuscript.

Gilovich, T. (1991). *How we know what isn't so: The fallibility of human reasoning in everyday life.* New York: The Free Press.

Gilovich, T., Kruger, J., Medvec, V. H., & Savitsky, K. (1999). *Those bad hair days: Biased estimates of how variable we look to others.* Unpublished manuscript, Cornell University.

Gilovich, T., & Medvec, V. H. (1994). The temporal profile to the experience of regret. *Journal of Personality and Social Psychology, 67,* 357–365.

Gilovich, T., & Medvec, V. H. (1995). The experience of regret: What, when, and why. *Psychological Review, 102,* 379–395.

Gilovich, T., Savitsky, K., & Medvec, V. H. (1998). The illusion of transparency: Biased assessments of others' ability to read one's emotional states. *Journal of Personality and Social Psychology, 75,* 332–346.

Griffin, D. W., & Tversky, A. (1992). The weighting of evidence and the determinants of confidence. *Cognitive Psychology, 24,* 411–435.

Hass, R. G. (1984). Perspective-taking and self-awareness: Drawing an *E* on your forehead. *Journal of Personality and Social Psychology, 46,* 788–798.

Ichheiser, G. (1951). Misunderstandings in international relations. *American Sociological Review, 16,* 311–315.

Jacowitz, K. E., & Kahneman, D. (1995). Measures of anchoring in estimation tasks. *Personality and Social Psychology Bulletin, 21,* 1161–1166.

Kenny, D. A., & DePaulo, B. M. (1993). Do people know how others view them: An empirical and theoretical account. *Psychological Bulletin, 114,* 145–161.

Latane, B., & Darley, J. M. (1970). *The unresponsive bystander: Why doesn't he help?* New York: Appleton-Century-Crofts.

Lee, Y., Jussim, L. J., & McCauley, C. R. (1995). *Stereotype accuracy: Toward appreciating group differences.* Washington, DC: American Psychological Association.

Lewin, K. (1935). *A dynamic theory of personality.* New York: McGraw-Hill.

Miller, D. T., & McFarland, C. (1987). Pluralistic ignorance: When similarity is interpreted as dissimilarity. *Journal of Personality and Social Psychology, 53,* 298–305.

Miller, D. T., & McFarland, C. (1991). When social comparison goes awry: The case of pluralistic ignorance. In J. Suls & T. Wills (Eds.), *Social comparison: Contemporary theory and research* (pp. 287–313). Hillsdale, NJ: Erlbaum.

Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review, 84,* 231–259.

Piaget, J. (1926). *The language and thought of the child.* New York: Harcourt Brace.

Piaget, J. (1928). *Judgment and reasoning in the child.* New York: Harcourt Brace.

Piaget, J. (1929). *The child's conception of the world.* London: Routledge & Kegan Paul.

Quattrone, G. A. (1982). Overattribution and unit formation: When behavior engulfs the person. *Journal of Personality and Social Psychology, 42,* 593–607.

Ross, M., & Sicoly, F. (1979). Egocentric biases in availability and attribution. *Journal of Personality and Social Psychology, 37,* 322–336.

Ross, L., & Ward, A. (1996). Naive realism in everyday life: Implications for social conflict and misunderstanding. In T. Brown, E. Reed, & E. Turiel (Eds.), *Values and knowledge.* Hillsdale, NJ: Erlbaum.

Stephenson, B., & Wicklund, R. A. (1983). Self-directed attention and taking the other's perspective. *Journal of Experimental Social Psychology, 19,* 58–77.

Tversky, A., & Kahneman, D. (1974, September 27). Judgment under uncertainty: Heuristics and biases. *Science, 185,* 1124–1131.

Van Boven, L., Medvec, V., & Gilovich, T. (1999). *The illusion of transparency in negotiations.* Unpublished manuscript, Cornell University.

Wicklund, R. A. (1975). Objective self-awareness. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 8, pp. 233–275). New York: Academic Press.

Zuckerman, M., Kernis, M. H., Guarnera, S. M., Murphy, J. F., & Rappoport, L. (1983). The egocentric bias: Seeing oneself as cause and target of others' behavior. *Journal of Personality, 51,* 621–630.

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