

Blirtatiousness: Cognitive, Behavioral, and Physiological Consequences of Rapid Responding

William B. Swann, Jr., and Peter J. Rentfrow
University of Texas at Austin

The Brief Loquaciousness and Interpersonal Responsiveness Test (BLIRT) measures the extent to which people respond to others quickly and effusively. The BLIRT displays desirable psychometric properties and distinguishes people who should theoretically score high (e.g., car salespersons) from those who should score low (e.g., librarians). Scores on the scale predict (a) the amount and rapidity of people's verbal responses in an unstructured interaction, (b) how likable and competent people's classmates perceive them to be early in the semester, (c) how quickly people respond to an obnoxious cell-phone user and how physiologically aroused they become, and (d) how quickly and emphatically people respond to a series of personal insults as well as their degree of physiological arousal. Converging evidence indicates that blirtatiousness is unique in its ability to amplify people's qualities, making these qualities more readily observable to perceivers.

For some people, no sooner do thoughts come to mind than they fly out their mouth. The result is a whirlwind of words that may charm—or overwhelm—those caught in its path. For other people, thoughts and feelings require time to simmer before being expressed, if they are expressed at all. Moreover, when these persons do speak, their verbal frugality may leave their interaction partners starving for elaboration.

In this report, we are concerned with these individual differences in blirtatiousness, defined as how quickly, frequently, and effusively people respond to their partners. We introduce the blirtatiousness construct and provide initial evidence for the validity of a scale designed to measure it, the Brief Loquaciousness and Interpersonal Responsiveness Test (BLIRT). High scorers (“high blirters”) tend to express themselves as soon as thoughts occur to them. They endorse items such as “If I have something to say, I don’t hesitate to say it” and “I speak my mind as soon as a thought enters my head.” Low scorers (“low blirters”) are relatively slow in responding to others. They are apt to endorse items such as “It often takes me awhile to figure out how to express myself” and “If I disagree with someone, I tend to wait until later to say something.”

Unlike most personality dimensions, blirtatiousness has more to do with the rapidity and number of people's verbal responses rather than the specific content of their responses. Rapidity and numerosity of responses are important for several reasons, particularly in initial encounters. For one thing, rapid, effusive responders may win the favor and admiration of their conversation partners. That is, because high blirters are more apt to respond to their partners within a given period of time, their partners may conclude that, relative to low blirters, high blirters are more attentive to them and attuned to their needs, qualities that foster liking. In addition, the eagerness of high blirters to comment during their interactions may make them seem more “on top of things” and competent. Indirect support for this idea can be found in Giles and Street's (1994) review of evidence indicating that observers perceive fast speakers as more likable and competent than slow speakers.

The popularity of some high blirters may be short-lived, however, because of the amplifier function of blirtatiousness. That is, over time blirtatiousness amplifies people's qualities, even if those qualities are negative. As a result, whether someone is breathtakingly brilliant or stunningly stupid does not matter: If they are a high blirter, their partners will soon find them out. In part, blirtatiousness amplifies traits and other qualities because high blirters simply say more than low blirters. In addition, however, the verbalizations of high blirters may be more personally revealing than those of low blirters. Why? Because there exist implicit social rules that stipulate that reactions (especially emotional reactions) ought to be expressed soon after they are experienced, and low blirters may all too often “miss the boat.” Indeed, those who delay in responding may risk being accused of fraudulence (“Oh, come on! If you really felt that way, you would have said so at the time!”), covering up (“If you are still harboring negative feelings about such a small thing, there must be something else going on”), or holding a grudge (“I can’t believe you’re still bothered by that! That happened years ago!”). Because of the existence of such sanctions, when low blirters realize that they have exceeded the implicit “statute of limitations” on emotional responses, their

William B. Swann, Jr., and Peter J. Rentfrow, Department of Psychology, University of Texas at Austin.

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Correspondence concerning this article should be addressed to William B. Swann, Jr., Department of Psychology, University of Texas, Austin, Texas 78712. Electronic mail may be sent to swann@psy.utexas.edu.

awareness of the sanctions against delayed responses may cause them to say nothing at all.

Despite the negative consequences that both low and high blirterers doubtlessly incur at times, we believe that people's level of blirtatiousness does not change radically over time. This is presumably due to the persistent influence of constitutional factors (e.g., extraversion, neuroticism) and representations of experiences in early relationships (e.g., relationships with people who encourage or discourage them to express their emotions). Insofar as they are stable, sociocultural influences may also stabilize people's blirtatiousness levels. Witness, for instance, the substantial regional and cultural differences that exist in how quickly people speak up and express agitation with one another (e.g., Cohen & Nisbett, 1997; Cohen, Vandello, Puente, & Rantilla, 1999; Nisbett & Cohen, 1996).

Having said this, we hasten to add that transient situational factors may also influence blirtatiousness somewhat. One such factor is the blirtatiousness level of people's interaction partners. That is, speedy or not-so-speedy responders may prompt others to respond in kind through a relatively automatic contagion effect. There may also be a conscious counterpart to this phenomenon. Those who suspect that their partners are censoring their own comments may respond by becoming equally guarded, thus slowing down the tempo of the interaction and diminishing the extent to which they express themselves. For these and related reasons, there may be a tendency for people to mimic the level of blirtatiousness displayed by their interaction partners (cf. Bernieri & Rosenthal, 1991).

The tendency to verbalize thoughts and feelings rapidly is related to several existing personality characteristics, but it is at once narrower than some of these constructs and broader than others. For example, blirtatiousness is broader than emotional expressiveness, because high blirterers should be just as quick and loquacious in expressing their beliefs and opinions about abstract ideas as they are in expressing their emotions. Blirtatiousness is also broader than responsiveness (as that construct is typically construed). Whereas past workers have restricted the use of responsiveness to responding that is contingent (e.g., Gottman, 1982; Stern, 1977), blirtatiousness also includes noncontingent or negative responsiveness. Thus, sometimes speediness is appropriate and contingent (e.g., apologies should be delivered soon after transgressions); sometimes it is inappropriate and noncontingent (e.g., an overly speedy "I love you too" may seem disingenuous). On the other hand, blirtatiousness is narrower than psychological reactivity, because it refers specifically to verbal reactivity. Indeed, we suspect that, when challenged, low blirterers may remain quiet while their psychological systems spring into action.

Theoretically, blirtatiousness should also covary positively with assertiveness and self-perceived social competence but negatively with fear of negative evaluations and shyness. Of the Big Five personality factors, blirtatiousness should be most closely associated with extraversion and neuroticism and could be viewed as a component of each of these constructs that emphasizes speed and effusiveness of responding and ignores the other components. We believe that this narrowness is a virtue because it enhances the predictive ability of blirtatiousness (e.g., Paunonen & Jackson, 2000; Paunonen & Ashton, 2001). For example, as noted, we believe that blirtatiousness will act as a particularly powerful amplifier of people's qualities and personality attributes.

Scale Construction

We began by having 237 undergraduates complete 20 items that we believed might be related to how quickly people respond to their interaction partners: (a) cognitive-affective accessibility (e.g., "It often takes me awhile to figure out how to express myself"; "Sometimes I just don't know what to say to people"), (b) social inhibition (e.g., "If I have something to say, I don't hesitate to say it"; "I always say what's on my mind"), and (c) urgency to respond quickly (e.g., "I speak my mind as soon as a thought enters my head"; "If I disagree with someone, I tend to wait until later to say something").

Respondents indicated the extent to which they agreed with each item on scales ranging from 1 (*strongly agree*) through 3 (*neither agree nor disagree*) to 5 (*strongly disagree*). Ten of the items were reversed coded so that scores could be summed as long as there were no missing data.

An exploratory principal-axis factor analysis with oblique rotation revealed five factors with eigenvalues greater than 1 (4.10, 2.16, 1.63, 1.48, and 1.11). These factors explained 20%, 11%, 8%, 7%, and 6% of the total variance, respectively. We retained only those items from the first two factors that displayed high interitem correlations, factor loadings of .3 or greater, and did not load onto more than one factor. This left eight items in the final version of the BLIRT.

A principal-axis factor analysis with oblique rotation on the remaining eight items extracted two factors (eigenvalues of 3.7 and 1.2, respectively), accounting for 46% and 15% of the total variance, respectively. Inspection of the items that loaded on each factor indicated that the two factors reflected a formatting difference; positively worded items loaded on the first factor and negatively worded items loaded on the second factor. To ensure that formatting was responsible for the two factors, we created a modified version of the scale in which the wording of half of the items was switched from positive to negative or vice versa. When we readministered this scale to 110 participants, a principal-axis factor analysis with oblique rotation extracted two factors in which all the positively worded items loaded onto Factor 1 and the negatively worded items loaded onto Factor 2. This, together with the fact that the eight items yielded a coefficient alpha of .84, led us to feel confident in treating all eight items as one factor. As can be seen in Table 1, all items had substantial loadings on this single factor.

We cross-validated the scale by administering the eight-item version to a second group of 1,137 undergraduates. The coefficient alpha was again .84. In addition, when a subset of the original participants completed the scale approximately 3 months later, their scores proved to be temporally stable: test-retest reliability: $r(97) = .77, p < .001$.

Study 1: Convergent and Discriminant Validity of the BLIRT

Theoretically, high blirterers should be at ease expressing themselves in social settings, experience relatively little difficulty responding to others, and respond to others quickly. We thus expected that high blirterers would score high on measures of social competence, assertiveness, and extraversion. In contrast, low blirterers should be hesitant and careful when expressing their emotional

states, be fearful of saying the “wrong thing,” and be reflective. Such individuals should thus score high on measures of shyness, fear of negative evaluation, neuroticism, and rumination.

To test these predictions, we conducted a survey study in three waves ($n_s = 100, 160,$ and $1,137$ participants). In each wave, participants completed the BLIRT along with several measures of emotionality, social competence, and personality. As expected, scores on the BLIRT were closely associated with some scales, moderately associated with others, and unrelated to still others.

Closely Related Constructs

The correlations in Table 2 show that, as expected, BLIRT scores were closely associated with self-perceived social competence as measured by the Texas Social Behavior Inventory (TSBI; Helmreich, Spence, & Stapp, 1974) and assertiveness as measured by the Rathus Assertiveness Schedule (RAS; Rathus, 1973). Despite these substantial relations, we believe that the BLIRT captures a related but unique construct. For example, although high blirters are usually more socially competent than low blirters, in principle low blirters could be socially competent if they knew precisely the right words to say (e.g., the quietly charming person). Similarly, high blirters could be socially incompetent if they could not stop themselves from blirting at inopportune times (the “bull in the china shop” type). Similarly, although high blirters are ordinarily more assertive than low blirters, the low blirter who happens to be the strong, silent type could be highly assertive, and high blirters who routinely drown their interaction partners in a sea of ineffectual words could be quite unassertive.

Having said this, we recognize that it is important to test empirically the viability of our conceptual distinction between the BLIRT and self-perceived social competence, extraversion, and assertiveness. Accordingly, in the studies presented later in this article we compared the predictive validity of these scales with that of the BLIRT. The results of these studies support the notion that the BLIRT predicted numerous outcome variables independent of the contribution of rival scales.

Table 1
Factor Loadings of Each BLIRT Item

Item	Factor loading
1. If I have something to say, I don't hesitate to say it.	.75
2. It often takes me a while to figure out how to express myself.	.63
3. If I disagree with someone, I tend to wait until later to say something.	.67
4. I always say what's on my mind.	.73
5. Sometimes I just don't know what to say to people.	.60
6. I never have a problem saying what I think.	.66
7. When emotions are involved, it's difficult for me to argue my opinion.	.45
8. I speak my mind as soon as a thought enters my head.	.56

Note. These factor loadings are based on a principal-axis factor analysis with a single-factor solution specified. The items are listed in the order in which participants completed them. BLIRT = Brief Loquaciousness and Interpersonal Responsiveness Test.

Table 2
Correlations Between the BLIRT and Other Conceptually Similar Constructs in Study 1

Measure	N	BLIRT
Closely related constructs		
Texas Social Behavior Inventory	100	.62***
Rathus Assertiveness Schedule	100	.61***
Somewhat related constructs		
Emotion Clarity	100	.42***
Extraversion (NEO)	145	.34***
Rosenberg's Self-Esteem	1,091	.39***
Self-liking	1,091	.36***
Self-competence	1,091	.35***
Impulsivity	100	.24*
Positive affect	145	.26**
Negative affect	145	-.28**
Rumination	145	-.35***
Shyness	100	-.44***
Fear of Negative Evaluation	100	-.47***
Neuroticism (NEO)	145	-.40***
Unrelated constructs		
Self-reported SAT	1,093	.01
Self-reported GPA	1,093	-.02
Social Desirability	100	.11
Emotional Attention	100	.04
Affect Intensity	100	-.09
Agreeableness (NEO)	145	-.07
Conscientiousness (NEO)	145	.02

Note. NEO indicates that the construct is from the NEO Personality Inventory. BLIRT = Brief Loquaciousness and Interpersonal Responsiveness Test; SAT = Scholastic Aptitude Test; GPA = grade point average. * $p < .05$. ** $p < .01$. *** $p < .001$.

Somewhat Related Constructs

BLIRT scores were moderately positively related to the Emotion Clarity subscale from Salovey's Emotional Intelligence Questionnaire (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), Rosenberg's (1965) measure of global self-esteem, Tafarodi and Swann's (1995) measures of Self-Liking and Self-Competence (SLSC), and impulsivity as measured by Barratt's Impulsivity Scale (Patton, Stanford, & Barratt, 1995) and Watson, Clark, and Tellegen's (1988) measure of positive affectivity. There were moderate negative relations between the BLIRT and Watson et al.'s (1988) measure of negative affectivity, the Rumination subscale in Trapnell and Campbell's (1999) Rumination-Reflection Questionnaire, Cheek and Buss's (1981) measure of shyness, and the Fear of Negative Evaluation (FNE) subscale from Watson and Friend's (1969) Social-Evaluative Anxiety Scale.

Unrelated Constructs

Further support for the discriminant validity of the BLIRT came from evidence that it was unrelated to conceptually distinct variables, self-reported Scholastic Aptitude Test, grade point average, Crowne and Marlowe's (1960) measure of social desirability, the Emotional Attention subscales from Salovey's Emotional Intelligence Questionnaire, and Larsen and Diener's (1987) measure of Affect Intensity. There was also no relation between BLIRT scores and gender, $F(1, 1,093) = 0.02, ns$.

Relation to the Big Five Personality Factors

Correlations between the BLIRT and Extraversion of the Big Five personality factors (Costa & McCrae, 1992) were moderately positive, and correlations between the BLIRT and neuroticism were moderately negative. Correlations with Openness, Agreeableness, and Conscientiousness of the Big Five, however, were negligible. These data are consistent with the notion that the BLIRT taps into facets of extraversion and neuroticism. Nevertheless, the low magnitude of these relations suggests that these facets are poorly represented in the particular extraversion and neuroticism scales that we used. Indeed, scrutiny of the items in these scales reveals that neither one features the speed of responding component that is so central to blirtatiousness.

Criterion Validity

Study 2: Blirtatiousness of Salespersons Versus Librarians

Considerable evidence suggests that people gravitate toward situations that are congenial to the expression of their personalities and self-views (e.g., Ickes, Snyder, & Garcia, 1997; Pervin, 1967; Pervin & Rubin, 1967; Snyder, 1981; Swann, 1987; Swann, Rentfrow, & Guinn, 2000). Accordingly, we expected that high blirters would gravitate toward work environments that placed a premium on effusive, rapid responding and that low blirters would choose work environments in which reflection and social inhibition were encouraged or at least tolerated. Specifically, we predicted that salespersons would have higher BLIRT scores than librarians.

Method

Participants. Thirty employees of car dealerships and libraries in central Texas volunteered to participate in this study. The librarian sample consisted of 8 women and 7 men, and the sales sample consisted of 14 men and 1 woman. Ages ranged from 20 to 66 years ($M = 34.3$ years).

Procedure. A male experimenter visited several public libraries and local car dealerships. As soon as he saw a potential participant, he approached that person and asked whether he or she would be willing to complete a questionnaire. All potential participants complied with this request except for 1 librarian. The experimenter thanked and debriefed participants after they completed the questionnaire.

Results and Discussion

As expected, car salespersons had significantly higher scores on the BLIRT ($M = 27$) than librarians ($M = 22.93$), $F(1, 28) = 6.49$, $p < .025$. Because most of the salespersons were men and most of the librarians were women, we were concerned that sex rather than occupation type explained our findings. To test this rival hypothesis, we conducted a second analysis of variance (ANOVA) with sex of participants as the independent variable. Sex had no effect in this analysis, nor was it a significant covariate when added to the original ANOVA. A second concern was that BLIRT scores were related to age. A correlational analysis revealed that age and the BLIRT were unrelated, $r(22) = .16$, $p = ns$.

Study 3: Blirtatiousness of Southeast Asian Americans Versus European Americans

We suspected that cultural norms encourage their members to respond in a more or less blirtatious manner. For example, South-

east Asian (e.g., Japan, China, Korea) cultures socialize their members to restrain themselves to maintain harmony within the social context and thus be certain they have something important to say before speaking and to refrain from drawing attention to themselves by speaking excessively (Markus & Kitayama, 1991; Marsella, De Vos, & Hsu, 1985). In contrast, Americans (specifically, people from the U.S. from European backgrounds) place a relative premium on being direct and responding quickly and are relatively tolerant of loquaciousness (Markus & Kitayama, 1991). For these reasons, we expected European Americans to score higher on the BLIRT than Asian Americans.

Method

A large sample of 2,800 European American and 698 Asian American students completed the BLIRT during pretesting for credit in their psychology course. Ages ranged from 17 to 47 years ($M = 19.14$ years) for the American student sample and from 17 to 29 years ($M = 18.86$ years) for the Asian American students.

Results and Discussion

As predicted, European American students ($M = 2.96$, $SD = .74$) were more blirtatious than their Asian American counterparts ($M = 2.72$, $SD = .65$), $F(1, 3,497) = 39.83$, $p < .001$. We were concerned that age might play a role in influencing the level of blirtatiousness of participants, so we controlled for age using analysis of covariance (ANCOVA). The results indicated that age did not have a significant impact on BLIRT scores ($F < 1.75$).

Overview of Predictive Validity Studies

In designing the BLIRT, we hoped to predict a wide range of behaviors related to blirtatiousness. We expected, for example, that scores on the BLIRT would predict behavior in relatively private as well as public settings. Moreover, we anticipated that the BLIRT would predict expressions of relatively neutral emotions as well as amusement and irritation. Finally, we expected that the BLIRT would predict people's overt behaviors, the reactions of their interaction partners, and even their physiological responses. To test these hypotheses, we designed a series of studies that varied along both of these public-private and emotionally neutral-volatile dimensions. In this way, we attempted to sample situations that were representative, although not exhaustive, of the contexts in which we anticipated that blirtatiousness would play an important role.

Study 4: Blirtatiousness on the Telephone

In this study, we set out to capture the effects of blirtatiousness in an emotionally neutral, private setting. Specifically, we expected that in a casual, simulated telephone conversation with a stranger, high blirters would speak more frequently, more quickly, and for longer durations than low blirters. Furthermore, in light of evidence that fast speakers are perceived as highly likable and competent (e.g., Giles & Street, 1994), we anticipated that high blirters would be rated as more socially attractive than low blirters. To test these hypotheses, we had high and low blirters interact with one another in a getting-acquainted conversation. We assessed the

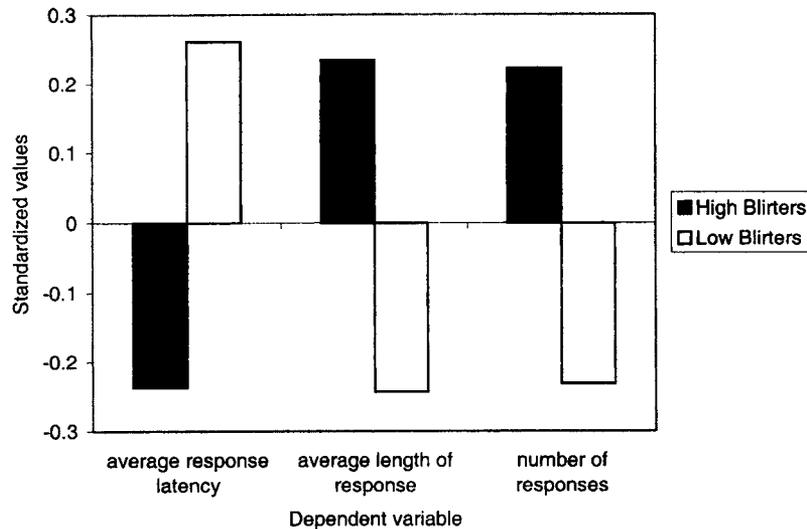


Figure 1. Standardized values of the three behavioral dimensions by Brief Loquaciousness and Interpersonal Responsiveness Test scores in Study 4.

overt behaviors of high and low blirters, the impressions they made on their interaction partners, and the relation between their behaviors and the impressions they made.

Method

Participants. Thirty-two pairs of students from the University of Texas participated in exchange for credit in their introductory psychology course. All participants had completed a measure of extraversion during a pretest.¹ To ensure that participants did not see each other before the experiment started, the experimenter instructed each member of the pairs to go to different places in the building. Despite this, one pair of participants did see each other, and their data were not analyzed. This left 16 male–female dyads, 6 male–male dyads, and 9 female–female dyads in the sample.

Procedure. A male experimenter greeted each participant and escorted him or her into a private cubicle. The experimenter introduced the participant to a study of “how people get to know each other.” He indicated that, after completing some background questionnaires, the participant would be having a conversation with another participant over a simulated telephone. He then administered a packet of questionnaires that included the BLIRT, the RAS (Rathus, 1973), Cheek and Buss’s shyness questionnaire (1981), the FNE; Watson & Friend, 1969), Crowne and Marlowe’s (1960) Social Desirability Scale, Pelham and Swann’s (1989) Self-Attributes Questionnaire (SAQ), and Murray, Holmes, and Griffin’s (1993) Interpersonal Qualities Scale (IQS).

Once participants completed the questionnaires, the experimenter instructed participants to begin the conversation. The conversations were recorded onto a Technics M8 cassette recorder and a Dell Dimensions computer with a 400-mHz processor. The computer was equipped with software that measured (a) how frequently each participant spoke, (b) the duration of each participants’ utterances, and (c) the delay between each speaker’s comments and the partners’ reply.

After 7 min, the experimenter indicated that the interaction period was over and asked participants to complete a final questionnaire packet. Using a modified version of Pelham and Swann’s (1989) SAQ, participants rated their partners on five important attributes (e.g., intelligence, physical attractiveness). Participants also indicated on a 7-point scale the extent to which their partners were likable, interesting, and responsive and talked during the interaction and how much they could see themselves becoming

friends with their partner. After participants completed these questionnaires, the experimenter thanked and debriefed them.

Results and Discussion

The overt behavior of low and high blirters. Did the BLIRT predict how quickly and effusively participants responded to their partners during their interactions? Yes. We generated a visual representation of our findings by identifying high and low blirters based on a median split and plotting the standard scores for each variable (Figure 1). A series of regressions revealed that the BLIRT predicted the amount of time participants spoke during the interaction ($\beta = .32, t = 2.47, p < .01$), the number of times participants spoke during the interaction ($\beta = .35, t = 2.69, p < .01$), and the average latency between the end of the partner’s comments and the beginning of the participant’s reply ($\beta = -.43, t = -3.07, p < .01$).

Did BLIRT scores uniquely predict participants’ behaviors? We conducted a series of 12 simple regressions to determine whether any of the other potential predictors of participants’ behaviors during the interaction (i.e., extraversion, assertiveness, shyness, fear of negative evaluation, social desirability) were related to any of the criterion variables. The only relation that emerged was between assertiveness (RAS) and the number of times participants spoke during the conversation ($\beta = .33, t = 2.5, p < .025$), but this effect dropped to nonsignificance ($p > .4$) when the BLIRT was partialled out.

We then computed 12 additional regressions to determine whether partialling out any of the other potential predictors dimin-

¹ This measure consisted of Helmreich, Spence, and Stapp’s (1974) Texas Social Behavior Inventory and Cheek and Buss’s (1981) shyness questionnaire. In a separate sample of 218 participants, this measure correlated .82 with John and Srivastava’s (1999) measure of extraversion.

ished the BLIRT effect on the three criterion variables. Of the 12 betas, 9 remained significant at the .05 level. The remaining 3 were as follows: Partialing out the RAS lowered the BLIRT beta for the number of times participants spoke to .23 ($p < .13$) and the BLIRT beta for response latency to $-.23$ ($p < .09$); partialing out FNE dropped the BLIRT beta to $-.27$ ($p < .12$). In short, the BLIRT was a significant predictor of the amount, frequency, and latency of participants' responses, and, with a few exceptions, these relations persisted even when the effects of rival constructs were partialled out.

The impressions that low and high blirters created. Did participants' level of blirtatiousness influence the impressions their partners formed of them? The means plotted in Figure 2 show that the higher the participants' BLIRT score, the higher their partner rated them in intelligence, likability, physical attractiveness, speed of response, talkativeness, interestingness, and desirability as a friend ($r_s = .27, .25, .30, .34, .30, .37, .39$, respectively, all $d_f s = 60$, all $p_s < .05$). Hence, in these brief telephone conversations, high blirters thoroughly impressed their interaction partners.

Did the behaviors of low and high blirters mediate the impressions they created? We expected that the behaviors of high and low blirters would mediate the impressions that their partners formed of them. For example, the latency of participants' responses should have mediated the relation between their BLIRT scores and their partners' desire to be friends with them. The findings just presented meet the first two requirements for this mediational hypothesis: BLIRT scores predicted both response latencies and partners' impressions of their desirability as a potential friend. In addition, participants' response latencies predicted how desirable partners perceived them as a friend ($\beta = -.35$, $t = -2.43$, $p < .05$). Finally, the relation between BLIRT scores and perceived desirability as a friend ($\beta = .14$, $t < 1$, *ns.*) was significantly lower when we controlled for average latency ($z = -2.09$, $p < .05$; Sobel, 1982). The other combinations of predictor

and mediator variables provided much weaker evidence for mediation, suggesting that response latency was a particularly important variable linking blirtatiousness to the impressions people form.

Interdependency. Because our participants took part in this study in pairs, their mutual influence could have artifactually inflated the magnitude of our statistical tests. To test this possibility, we determined the impact of "group" (the dyad of which each participant was a member) on each dependent measure. Group had a significant effect only on average response latency, $F(24, 48) = 8.21$, $p < .001$, such that some dyads responded to each other more quickly than others (F_s for the other dependent variables are nonsignificant, $p_s > .39$). The group effect was not responsible for the relation between the BLIRT and response latency, however, because when we added group as a predictor to the regression in which BLIRT predicted response latency, the BLIRT effect remained significant. Therefore, our effects do not seem to have been an artifact of interdependency.

Mimicry. Additional analyses also revealed the predicted mimicry effect, such that participants brought their level of blirtatiousness into accord with the blirtatiousness of their interaction partner. That is, the average latency of participants' responses covaried with the average latency of their interaction partners' responses, $r(55) = .78$, $p < .001$.

Blirtatiousness as amplifier of interpersonal qualities. To determine whether blirtatiousness served to amplify participants' qualities and thereby make these qualities more recognizable, we first identified those IQS items that seemed most relevant to a brief telephone encounter (e.g., open and disclosing, witty and humorous, critical and judgmental). We then computed an index of self and partner rating similarity by calculating a d^2 statistic (i.e., we first standardized the scores and then calculated the sum of the squared deviations between the scores for both partners) and regressing this index onto BLIRT scores (e.g., Robins, Caspi, &

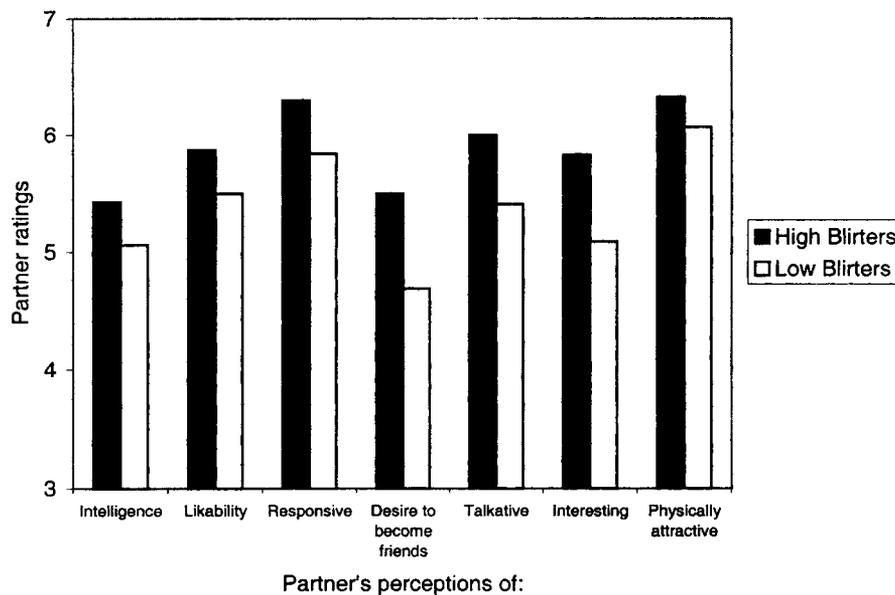


Figure 2. Partner perceptions of high and low blirters in Study 4.

Moffitt, 2000).² Consistent with our prediction that blirtatiousness would amplify participants' qualities, the regression revealed a significant BLIRT effect ($\beta = -.33, t = -2.71, p < .01$) such that the higher the participant's BLIRT score, the greater was the agreement between the participant's self-rating and the partner's rating of him or her ($\beta = -.33, t = -2.72, p < .01$).

It also seemed plausible that extraversion, assertiveness, or shyness might serve to amplify participants' traits. When we substituted extraversion scores for the BLIRT and repeated the foregoing analysis, the beta was marginally significant ($\beta = -.25, t = -1.98, p < .06$). Nevertheless, when we entered both the BLIRT and extraversion into a regression simultaneously, the BLIRT effect prevailed, but the extraversion effect dropped to nonsignificance, (BLIRT $\beta = -.29, t = -2.1, p < .05$; extraversion $\beta = -.01, t = -.67, p > .5$). Similarly, when we substituted assertiveness scores for the BLIRT to determine whether it would predict amplification, the beta was marginally significant ($\beta = -.24, t = -1.89, p < .07$), but when we entered both the BLIRT and assertiveness into a regression simultaneously, the BLIRT effect prevailed (BLIRT $\beta = -.28, t = -2.0, p < .05$), whereas the assertiveness effect dropped to nonsignificance ($\beta = -.09, t = -.63, p > .5$). When we substituted shyness scores for the BLIRT, shyness was not significant ($\beta = .15, t = 1.15, p > .25$). However, when we entered both the BLIRT and shyness into a regression simultaneously, the BLIRT effect remained ($\beta = .34, t = 2.41, p < .02$). Therefore, these data show that the BLIRT was the only variable that served to amplify participants' traits.

Not only did the BLIRT uniquely amplify people's characteristics, but other traits failed to amplify blirtatiousness. That is, when we computed an index of similarity of self-rated blirtatiousness and behavioral blirtatiousness (response latency) by calculating a d^2 statistic and then regressing this index onto extraversion scores, extraversion had no significant effect ($\beta = -.164, t = -1.090, p > .29$). When we successively substituted assertiveness and shyness in this same equation, neither variable was significant ($ts < 1$).

Study 5: Blirting—A Key to Classroom Success?

Theoretically, blirtatiousness should influence behavior not only in relatively private settings, such as the interactions examined in Study 4, but also in public settings, such as university classrooms. The consequences of blirtatiousness may vary as a function of stage of semester, however. Early in the semester, while impressions are developing, high levels of blirtatiousness may be advantageous because high blirters may seem more engaged, intelligent, and competent than students who are less responsive. As the semester progresses, however, the initial advantage enjoyed by high blirters may vanish for at least two reasons. First, as low blirters become more comfortable with the class, they may say more than they did at the outset of the semester. Second, because blirtatiousness is not associated with intelligence, their classmates should come to realize that the exuberance of high blirters often exceeds their insightfulness. Similarly, they may note that, although low blirters say little, what they do say is often astute. Indirect support for the latter hypothesis comes from a study by Paulhus and Morgan (1997), who found that classmates imputed more intelligence to extroverted than introverted students early but not late in the semester.

Method

To test these hypotheses, we followed 22 undergraduate students enrolled in an advanced social psychology course over a semester. On the first day of class, students completed the BLIRT, TSBI, and SLSC. Three weeks later, on the third class day, students rated the likability and competence of their classmates. Nine weeks later (9th class day), students again rated the likability and competence of their classmates and, in addition, rated their talkativeness. Participants were then thanked and debriefed. After the semester, we obtained course grades from the instructor.

Results and Discussion

We expected that the classmates of high blirters would be very impressed with them initially but that this advantage would fade as the semester progressed. The results confirmed these predictions. As can be seen in Figure 3, the results from a series of paired t tests revealed that classmates came to see high blirters with low grades as less competent over the course of the semester, $t(3) = 3.73, p < .05$; for high blirters with high grades, this tendency merely approached significance, $t(7) = 1.65, p < .13$. In contrast, classmates' perceptions of the competence of low blirters changed very little over the semester ($ts < 1$).

The results plotted in Figure 4 reveal that classmates' perceptions of students' likability displayed a slightly different pattern. Classmates became increasingly enamored of low blirters if they had high grades, $t(5) = 3.07, p < .05$, but not if they had low grades. In contrast, classmates' perceptions of high blirters did not improve (both $ts < 1.4, p = ns$).

Perhaps the most striking pattern in Figures 3 and 4 is the tendency for classmates to become more negative toward high blirters with low grades. As a result, by late in the semester, classmates imputed less competence to high blirters with low grades than low blirters with high grades, $t(9) = -2.29, p < .05$, and high blirters with high grades, $t(13) = -2.16, p < .05$, but not less than low blirters with low grades ($t < 1$). Similarly, classmates expressed less liking for high blirters with low grades compared with low blirters with high grades, $t(9) = -2.36, p < .05$, and high blirters with high grades, $t(13) = -2.29, p < .05$, but not for low blirters with low grades ($t < 15, p = ns$).

Correlational analyses offered further insights into the relation between blirtatiousness and their classmates' appraisals. As shown in Table 3, early in the semester, impressions of competence and likability were positively associated with BLIRT scores, $rs(20) = .59$ and $.55$, respectively, $ps < .01$, but not at all associated with grades ($rs = .00$). Late in the semester, however, perceptions of competence and likability were negatively (albeit not significantly) associated with BLIRT scores, $rs(20) = -.29$ and $-.33$, respectively, $ps < .20$. Moreover, perceptions of talkativeness at the end of the semester were associated with BLIRT scores, $r(20) = .54, p < .01$. Furthermore, grades were associated with end-of-semester perceptions of competence and likability, $rs(20) = .51$

² The d^2 statistic that we report here is a difference score transformed in the manner suggested by Cronbach (1955). Although Cronbach was wary of the low reliabilities associated with difference scores, subsequent analyses by Rogosa and others (e.g., Rogosa, Brandt, & Zimowski, 1982; Rogosa & Willett, 1983) demonstrated that the reliability problem associated with difference scores is not as serious as Cronbach believed.

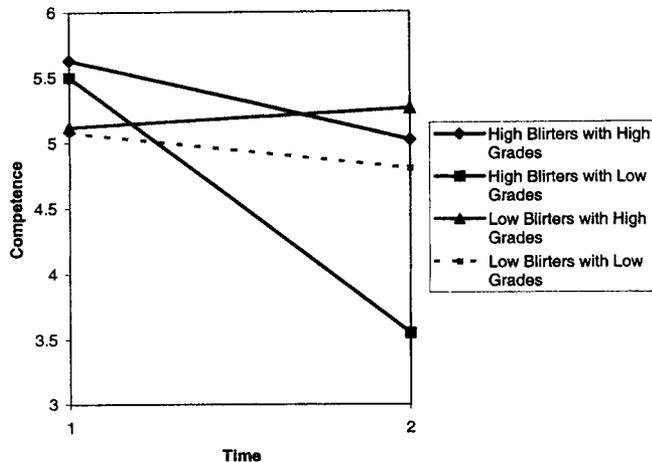


Figure 3. Classmates' assessments of competence in Study 5.

and .48, respectively, $ps < .01$, but grades were not related to talkativeness, $r(20) = .03$, $p = ns$, or to BLIRT scores, $r(20) = -0.19$, $p = ns$.

Did the BLIRT uniquely predict classmates' impressions? As a proxy for extraversion, we used the TSBI, which, in an independent sample of 214 participants, correlated .81 with the Big Five Inventory (BFI) measure of Extraversion, which is higher than even the .69 correlation between the BFI and NEO versions of Extraversion (see John & Srivastava, 1999). The results revealed that, although the TSBI was correlated with the BLIRT, $r(20) = .55$, $p < .01$, even the strongest of the correlations between classmate's impression and the TSBI were only marginally significant ($rs = .39$, $.37$, $-.23$, and $-.19$ for Time 1 competence and likability ratings and Time 2 competence and likability ratings, respectively, all $ps > .089$). It thus appears that the BLIRT predicted classmates' perceptions of students but extraversion did not. Similarly, participants' SLSC scores did not predict classmates' perceptions of participants ($ts < 1$).

Partialing out the effects of the other potential predictors when computing BLIRT effects lent further support to the conclusion that the BLIRT effects were independent of other constructs. For

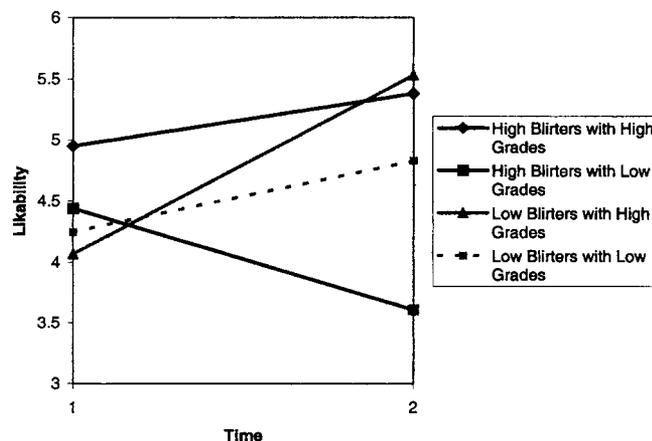


Figure 4. Classmates' assessments of likability in Study 5.

Table 3
Classmates' Impressions of Participants' Competence, Likability, and Talkativeness Correlated With BLIRT Scores and Grades Early and Late in Semester

Measure	Early in semester		Late in semester		
	Competence	Liking	Competence	Liking	Talkativeness
BLIRT	.59*	.55*	-.29	-.33	.54*
Grades	.02	.06	.51*	.48*	.04

Note. BLIRT = Brief Loquaciousness and Interpersonal Responsiveness Test.

* $p < .05$.

example, the BLIRT predicted peer perceptions of likability even when we partialled out the effects of the TSBI ($\beta = .49$, $t = 2.21$, $p < .05$), self-liking ($\beta = .48$, $t = 2.31$, $p < .05$), or self-competence ($\beta = .47$, $t = 2.24$, $p < .05$). Finally, the BLIRT predicted peer perceptions of competence when we partialled out the effects of the TSBI ($\beta = .52$, $t = 2.43$, $p < .025$), self-liking ($\beta = .594$, $t = 2.88$, $p < .01$), or self-competence ($\beta = .51$, $t = 2.46$, $p < .025$).

Blirtatiousness as competence amplifier. To test the hypothesis that blirtatiousness would serve as a competence amplifier, as in Study 4, we computed an index of similarity of participants' grades and Time 2 peer ratings of competence by calculating a d^2 statistic and then regressing this index onto BLIRT scores. A significant BLIRT effect emerged ($\beta = -.43$, $t = -2.13$, $p < .05$), such that the higher the BLIRT score of the classmate, the more closely peer ratings were associated with grades. When we substituted the TSBI for the BLIRT in this regression equation, it had no effect ($\beta = -.09$, $t = -.40$, $p > .6$). Furthermore, when both variables were entered into a simultaneous multiple regression, the BLIRT was still significant ($\beta = -.52$, $t = -2.19$, $p < .05$) and the TSBI was not ($\beta = .17$, $t = .73$, $p > .4$).

Study 6: Blirtatiousness and the Woman Who Could Not Put Down Her Cell Phone

Method

Participants. In exchange for partial credit in an introductory psychology course, 24 women volunteered to participate in the study. All participants completed the BLIRT and John and Srivastava's (1999) BFI during a large pretesting session at the beginning of the semester.

Procedure. On arrival, each participant waited in the hallway for the experimenter. While the participant awaited the experimenter, a female confederate sat next to the participant. A male experimenter then greeted both the confederate and participant and escorted them to the lab suite. The confederate was a young female whose appearance was typical of most undergraduate students. Like the experimenter, the confederate was unaware of the participant's BLIRT score. On entering the experimental room, the confederate sighed loudly and asked how long the experiment would take as the participant sat down at a separate desk. The experimenter explained that it would take approximately 45 min.

The experimenter introduced the study as an investigation of the effects of art regression therapy on mood and stress. He continued by having the participant and confederate complete several questionnaires, including Watson et al.'s (1988) trait version of the Positive and Negative Affect

Scale (PANAS), the RAS, and Gross and John's (1995) Emotional Expressivity Scale.

Once both the participant and confederate completed the mood questionnaires, the experimenter instructed them to draw pictures that represented the feelings they associated with two to three childhood experiences. On hearing these instructions, the confederate sighed and rolled her eyes. The experimenter further explained that participants were required to draw the entire time and that there would be an additional questionnaire packet for them to complete after the drawing session. The experimenter explained that the quality of the artwork was not important and that the goal of the research was to capture the form and process people use to express themselves through their artwork. To this end, he indicated that he would be videotaping the session.

To assess participants' physiological states, the experimenter placed blood pressure cuffs around both the participant's and confederate's arm. Blood pressure was assessed every 5 min during the session a total of three times.³ Just as the experimenter placed the blood pressure cuff onto the arm of the participant, the confederate's cell phone began to ring. After casually searching through her bag for her phone, she answered it and said, "Hello. Hey, let me call you back. I can't talk right now. I'm in a psychology experiment . . . Okay . . . Bye." The experimenter then explained that distractions make the therapy experience less rewarding and asked the confederate to turn her phone off so that it did not disturb anyone during the therapy session. The confederate responded by rolling her eyes and sighing loudly. After promising to return in 15 min, the experimenter left the room.

The participant and confederate were seated at separate desks; a box of colored pencils was placed on the participant's desk. Approximately 1 min after the experimenter left the room, the confederate said, "This is stupid!" and got up to get some colored pencils from the pencil box. While digging through the box of pencils, the confederate asked, "What's your name?" and then returned to her seat to begin drawing.

Approximately 3 min after the experimenter left the room, the confederate's cell phone rang again. After two rings, she answered it and said, "Hello. Hey, what's going on? [brief pause] That's cool . . . I'm in a stupid psychology experiment and [sarcastically] I'm supposed to be getting in touch with my *inner feelings*. Anyway, what did I miss in class? [brief pause] That class is so lame; we never should have registered for it. Did I miss anything else? [brief pause] Uh huh . . . Yeah . . . Really!? I can't believe that! [brief pause] That's typical . . . Anything else? All right, well, I'll be out of here soon hopefully. I'll call you later. All right, see ya." Shortly thereafter, the confederate sighed loudly and said, "This sucks! I hate drawing!" A minute later, she got up to get more colored pencils and commented to the participant, "Wow! It looks like *you're* in touch with your *inner feelings*" before returning to her seat.

Two minutes later, the confederate said to the participant, "I hope you don't mind but I have to make a call." After a few seconds, the confederate made the call and said, "Shelly! Hey girl, what's up? [brief pause] That's cool . . . Not much. I'm in one of those psychology experiments. [brief pause] It sucks! It's so boring. I'm supposed to be getting in touch with my *inner feelings* and draw pictures of my childhood. Can you believe that crap?" While talking on the phone, the confederate walked over to the box of pencils, searched through the box and looked over the participant's shoulder and chuckled quietly. She went on to say, "There's this girl in here who's all into it . . . She's in touch with her *inner feelings*. [brief pause] Anyway . . . What are you up to? Really? [brief pause] Uh huh . . . I can't believe that! Yeah, you're right . . . Okay, I'll let you go then. I will . . . Bye." After the conversation, the confederate returned to her artwork and after a minute said, "This is a waste of time. I should just leave."

Approximately 5 min later, the confederate said to the participant, "I hope you don't mind that I have to make another call." After waiting a few seconds, she proceeded to make the call and said, "Hey, is Judy there? Okay thanks. [brief pause] Hey girl, what's up? [brief pause] Uh huh . . . Yeah, I know . . . Tell me about it . . . He's such a jerk . . . You should

just tell him to stop calling you . . . [brief pause] Oh, not much. Right now I'm in this experiment for my psych class . . . I'm supposed to be drawing stupid pictures of my childhood. It's so stupid. The guy told me to get in touch with my *inner feelings*. [brief pause] I should be out of here soon. All right . . . I will. I'll call you when I'm done. Okay. Bye." She then hung up the phone and continued drawing.

After the 15-min interval, the experimenter returned and explained to the participant and confederate that he would like to talk to each of them individually about their artwork and asked the confederate to wait in the hallway. After asking a few questions about the experience, he began to probe the participant for suspicion. Although a few participants expressed slight suspicion, no one was certain that the confederate was part of the experiment. After establishing that no one had seen through the cover story, the experimenter informed participants that the confederate was actually part of the experiment and invited the confederate into the room. The experimenter then explained the purpose of the experiment and worked to ensure that all participants understood that the confederate's actions were scripted and in no way reflected her true feelings about the participant or her artwork.

Coding the videotapes. We broke each session into three 5-min clips and had two female judges and one male judge rate each participant. Specifically, on 7-point scales ranging from 1 (*not at all characteristic*) to 7 (*extremely characteristic*), judges rated whether or not participants verbally responded to the confederate as well as how amused and irritated participants seemed. In addition, judges rated participants' extraversion and neuroticism. Interrater agreement was acceptable; intraclass correlation coefficients ranged from .59 to .65.

Results and Discussion

Overt behavior of participants. Did participants' BLIRT scores predict the extent to which they responded to the confederate? Yes. We conducted a multiple regression analysis in which the predictors were BLIRT scores, time (earliest, middle, and last 5 min), and the BLIRT \times Time interaction. As can be seen in Figure 5, judges indicated that high blirters responded more frequently than low blirters ($\beta = .241, t = 2.091, p < .05$). There were no significant main or interactive effects of time. Moreover, there were no main or interactive effects of the BLIRT or time on judges' ratings of amusement or irritation (both $ps > .8$). The latter findings are consistent with research indicating that college women mask their feelings while in conflict situations (Swim & Hyers, 1999). Finally, judges also indicated that high blirters were more extroverted and less neurotic than low blirters ($\beta_s = .47, -.17, ts = 2.29$ and 2.23 , respectively, both $ps < .05$).

Blood pressure. We used pulse pressure—the difference between systolic and diastolic pressure—to index cardiac activity (higher pulse pressure puts individuals at risk for heart difficulties; for a review, see Krantz & Falconer, 1997). For each blood pressure reading, we computed pulse pressure scores and entered them into a multiple regression in which the BLIRT score and time were the predictor variables. The means displayed in Figure 6 show only a significant effect of BLIRT scores ($\beta = -.26, t = -2.07, p < .05$) such that low blirters displayed higher pulse pressure than high blirters.

Note that the fact that low blirters had higher pulse pressure during Time 1 does not indicate that they had higher baseline pulse pressure, because the Time 1 mean refers to the average of the

³ Blood pressure data for 3 of the participants were not used because of faulty measurement.

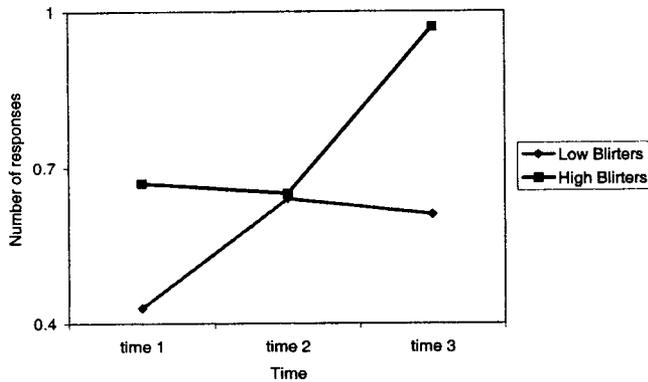


Figure 5. Judges' ratings of the number of times participants responded in Study 6.

first 5 min, and the confederates' activities began her irritating activities well before the experimenter began monitoring blood pressure. Furthermore, when we had an independent sample of 21 undergraduates simply complete questionnaires for 10 min while we monitored their blood pressure, there was no hint of BLIRT score effects whatsoever, $F(1, 20) = .15, p > .6$.

Did the BLIRT uniquely predict the criterion variables? The other potential predictor variables covaried with the BLIRT, $r_s(22) = .43, -.21, \text{ and } .39$ for extraversion, neuroticism, and assertiveness, respectively, raising the possibility that they might predict the criterion variables when substituted for the BLIRT. A series of regressions yielded no significant relations (all $p_s > .22$), thus indicating that the BLIRT was the only variable that predicted the criterion variables of itself.

It was also true, however, that partialing out the effects of the other potential predictor variables did reduce the size of the BLIRT effects on the judges' ratings of participants' behavior. Nevertheless, in every instance, the effect of the BLIRT was larger than the effect of the rival predictors. Simultaneous multiple regressions with the criterion of judges' ratings of how frequently participants responded to the confederate indicated that, when both extraversion and the BLIRT were predictors, the BLIRT effect was not significant ($\beta = .19, t = 1.38, p < .18$), but the extraversion effect was even weaker ($\beta = .07, t = .52, p > .6$). When both neuroticism and the BLIRT were predictors, the BLIRT effect approached significance ($\beta = .21, t = 1.67, p < .1$) but neuroticism did not ($\beta = .03, t = .52, p > .8$). Finally, when both assertiveness and the BLIRT were predictors, the BLIRT effect was marginal ($\beta = .23, t = 1.97, p < .055$), and the assertiveness effect approached significance ($\beta = .12, t = 1.01, p > .3$).

We also asked whether partialing out the rival predictors diminished the size of the BLIRT effect on judges' ratings of participants' level of extraversion. A series of simultaneous multiple regressions revealed that, when both assertiveness and the BLIRT were predictors, the BLIRT effect was marginally significant ($\beta = -.41, t = -1.97, p < .06$), and the assertiveness effect was nonsignificant ($\beta = -.26, t = -1.26, p > .2$). When neuroticism was partialled out, the BLIRT effect remained significant ($\beta = -.45, t = -2.12, p < .05$), and the neuroticism effect was nonsignificant ($\beta = -.05, t = -.23, p > .8$).

Finally, we conducted another wave of simultaneous multiple regressions to determine whether the ability of the BLIRT to

predict pulse pressure would be compromised by covarying out rival variables. Whether we covaried out extraversion, neuroticism, and assertiveness, the BLIRT remained significant (all $p_s < .05$).

Therefore, although some of the BLIRT effects were weaker when the rival predictors were partialled out, most remained significant or at least marginally significant. Furthermore, in every instance, the effect of the BLIRT was larger than the effect of the rival predictors, which were never significant on their own.

Blirtatiousness as amplifier of extraversion and emotional reactions. To test the hypothesis that blirtatiousness amplified participant's level of extraversion, we computed an index of similarity of participants' self-reported extraversion and judges' ratings of extraversion by calculating a d^2 statistic and then regressing this index onto participants' BLIRT scores, time (earliest, middle, and last 5 min), and the BLIRT \times Time interaction. There was a significant BLIRT effect ($\beta = -.50, t = -2.47, p < .03$) and no main or interactive effect of time. When we substituted assertiveness (another potential amplifier variable) for the BLIRT in the foregoing regression equation, it was not significant ($\beta = -.33, t = -1.49, p > .15$). Moreover, when we partialled out the effects of assertiveness, the BLIRT effect remained significant at the .04 level ($\beta = -.46, t = -2.29$). In short, blirtatiousness amplified extraversion, but assertiveness did not serve this amplifying function.

Did blirtatiousness also amplify participants' emotional reactions? Armed with the assumption that pulse pressure was an indicator of emotional arousal, we asked whether pulse pressure was more closely related to judges' ratings of irritation and amusement among high compared with low blirters. It was. That is, when we computed an index of similarity of participants' pulse pressure and judges' ratings of irritation by calculating a d^2 statistic and regressing this index on BLIRT scores, the BLIRT effect was significant ($\beta = -.28, t = -2.33, p < .03$). Moreover, when we regressed a similar index of similarity between pulse pressure and judges' rating of amusement on BLIRT scores, the BLIRT effect was again significant ($\beta = -.26, t = -2.09, p < .05$). Moreover, when we successively substituted other potential amplifier variables—extraversion and assertiveness—for the BLIRT in the foregoing regression equations, they were all nonsignificant ($t_s < 1.49, p_s > .15$). Finally, when we partialled out the other potential

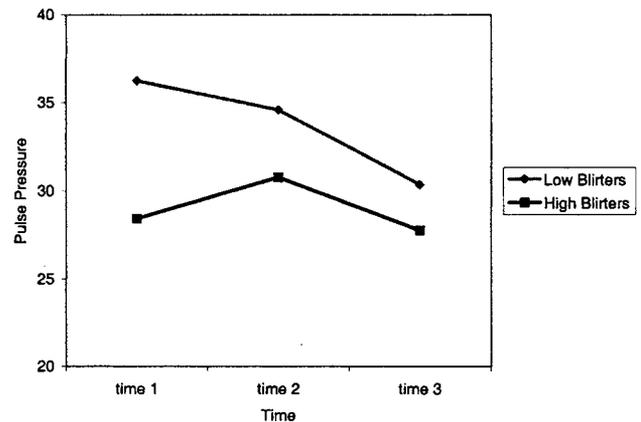


Figure 6. Pulse pressure during the experimental session in Study 6.

amplifier variables from the BLIRT effect in predicting the amplification of emotional reactions, the BLIRT remained significant ($ps < .04$). Therefore, blirtatiousness served to amplify participants' emotional reactions, but extraversion and assertiveness did not.

Study 7: Blirtatiousness and the Obnoxious Confederate

The foregoing studies of blirtatiousness in getting-acquainted conversations (Study 4) and classrooms (Study 5) showed that the BLIRT predicted the expression of relatively neutral thoughts and emotions. In Study 7 we tested the hypothesis that the BLIRT would also predict the expression of a positive emotion (amusement) and a negative one (irritation). To this end, we adapted the "annoying confederate" paradigm used in previous research by Cohen et al. (1999). In brief, while participants were drawing pictures related to their "earliest experiences," a confederate taunted them by adopting a snide demeanor and pelting them with wads of paper. We recorded participants' behavioral and physiological reactions to these annoyances by videotaping them and monitoring their blood pressure.

We expected that all participants would be troubled by the activities of the confederate but that high versus low blirters would manifest their concerns very differently. In particular, we anticipated that, because of their lack of social inhibition and speed of responding, high blirters would be quick to either say something to discourage the confederate's behavior or make light of the confederate's inappropriate behavior (i.e., by noting that his behavior was childish). We expected that, in this way, high blirters would vent their disapproval before it developed into anger, thus lowering their blood pressure (Pennebaker, 1995; Pennebaker & Francis, 1996). In contrast, we expected that, because of their social inhibition, low blirters would refrain from expressing their feelings overtly but that these feelings would nevertheless "leak" in the form of nonverbal expressions of irritation and physiological arousal (for a discussion of such leakage of emotional information, see Bugenthal, Henker, & Whalen, 1976; Ekman, 1981; Ekman & Friesen, 1969; Rosenthal & Depaulo, 1979; Vincent, Friedman, Nugent, & Messerly, 1979; Weitz, 1972; Word, Zanna, & Cooper, 1974; Zuckerman, Larrance, Spiegel, & Klorman, 1981).

Method

Participants. Thirty men participated in exchange for partial credit in their introductory psychology course. All participants completed the BLIRT during a pretesting session at the beginning of the semester. We deleted the data of 1 participant because of suspicion.

Procedure. A female experimenter greeted each participant on his arrival and informed him that they would begin as soon as the "second participant" arrived. Seven minutes later, the experimenter escorted the confederate into the lab suite. The confederate was a young, slightly built male whose appearance was typical of undergraduates. Like the experimenter, the confederate was unaware of the participant's BLIRT score. On entering the experimental room, the confederate glanced at the participant and seemed amused by his appearance.

The experimenter introduced the study as an investigation of the effects of art regression therapy on mood and stress. As she elaborated on the procedure, the confederate interrupted her midsentence with the question, "How long is this going to take?" The experimenter responded by telling him that it would take approximately 45 min. She continued by having the participant and confederate complete several questionnaires, including

Watson et al.'s (1988) trait version of the PANAS, the Neuroticism subscale from John and Srivastava's (1999) BFI, the RAS, and Gross and John's (1995) Emotional Expressivity Scale.

Once both the participant and confederate completed the mood questionnaires, the experimenter instructed them to draw pictures that represented the feelings they associated with two to three childhood experiences. The confederate again interrupted by asking, "So, can we leave as soon as we finish two pictures?" The experimenter indicated that participants were required to draw the entire time and that there would be an additional questionnaire packet for them to complete at the end. She then continued by explaining that the quality of the artwork was not important and that the goal of the research was to capture the form and process they used to express themselves through their artwork. To this end, she indicated that she would be videotaping the session. Also, to assess their physiological state while they drew, she placed blood pressure cuffs around both the participant's and confederate's arm. Blood pressure was assessed every 5 min during the session a total of three times.⁴ After promising to return in 15 min, the experimenter left the room.

The participant and confederate were seated at separate desks, with the participant's back facing the confederate. A box of colored pencils was placed on the participant's desk, and roughly 2 feet from the participant's chair was a wastebasket. Approximately 1 min after the experimenter left the room, the confederate said, "This is stupid" and got up to get some colored pencils from the pencil box. While digging through the box of pencils, the confederate asked, "So, what's your name, Slick?" and then returned to his seat to begin drawing.

Shortly thereafter, the confederate sighed loudly in apparent frustration, crumpled the paper he had been drawing on, and threw it in the wastebasket while saying, "This sucks! I hate drawing." A minute later, the confederate crumpled a second piece of paper, threw it at the back of the participant's head, and, with a hint of sarcasm in his voice, said, "Sorry about that, Slick." After this, the confederate threw a second paper wad at the participant's back and, in a derisive tone, said, "Oh, sorry about that, Slick. I was trying to hit the basket." The confederate then got up to get more colored pencils and peered over the participant's shoulder and said, "Wow, it looks like you're really in touch with your inner feelings" before returning to his seat.

Two minutes later, the confederate again crumpled his drawing and threw it at the participant's back and, feigning frustration, exclaimed, "Slick, man, you keep blocking my shots." Next, the confederate sprang up from his seat, slipped quickly to the corner of the room opposite the participant, and shouted excitedly, "He's going for three!" He then threw a paper wad at the participant and proclaimed, "He shoots! He scores!" The confederate then approached the participant from behind, peered over his shoulder again, and said, "No offense man, but your artwork is pretty lame." After a few more minutes, he threw another paper wad at the participant, followed by, "You may not be a good artist, but you make a good backboard." Finally, the confederate folded a paper airplane and threw it at the participant, barely missing him.

After the 15-min interval, the experimenter returned, told the participant and confederate that she would like to talk to each of them individually about their artwork, and asked the confederate to wait in the hallway. She then began to probe the participant gently for suspicion. After establishing that the participant had not seen through the cover story (all but 1 did not), she informed him that the confederate was actually part of the experiment and invited the confederate into the room. The experimenter and confederate worked to ensure that all participants understood that the confederate's actions were scripted and in no way reflected his true feelings about

⁴ Blood pressure data were obtained for only one third of the participants because we did not introduce the blood pressure measure until half of the participants had been run, and once we did we lost data from several sessions because of technical difficulties.

the participant or his artwork. After learning about the full nature of the study, virtually all participants reported that they enjoyed participating in the study; many likened the experience to appearing on *Candid Camera*.⁵

Coding the videotapes. We broke each session into three 5-min clips and had four naive judges (three women and 1 man) rate each participant. Specifically, on 7-point scales ranging from 1 (*disagree strongly*) to 7 (*agree strongly*), judges rated the extent to which participants appeared irritated, angry, and amused with the confederate and whether or not they verbally responded to the confederate. Interrater agreement was acceptable, with intraclass correlation coefficients of .82, .87, and .83 for amusement, irritation, and number of responses, respectively.⁶

Results and Discussion

Overt behavior of participants. Did participants' BLIRT scores predict when and how they responded to the confederate? Yes. We conducted a series of multiple regression analyses of each criterion variable in which the predictors were BLIRT scores, time (earliest, middle, and last 5 min), and the BLIRT \times Time interaction. As can be seen in Figure 7, high blirters responded more frequently than did low blirters ($\beta = .28, t = 2.56, p < .01$). Figure 8 shows that judges believed that high blirters were more amused than low blirters ($\beta = .26, t = 2.35, p < .025$), and Figure 9 indicates that judges perceived high blirters to be less irritated than low blirters ($\beta = -.26, t = -2.63, p < .01$). There were no significant main or interactive effects of time, except that judges indicated that all participants grew progressively more irritated as the sessions progressed ($\beta = .2, t = 1.75, p < .08$, and $\beta = .53, t = 4.65, p < .001$ for Time 1 vs. Time 2, and Time 1 vs. Time 3, respectively).

Blood pressure. As in Study 6, we used pulse pressure to index cardiac activity. For each blood pressure reading, we computed pulse pressure scores and entered them into a multiple regression in which the BLIRT and time were the predictor variables. The means displayed in Figure 10 show only a significant effect by BLIRT scores ($\beta = -.3, t = 1.99, p < .05$), such that low blirters displayed higher pulse pressure than high blirters.

Did the BLIRT uniquely predict the criterion variables? We first determined whether any of the other potential predictor vari-

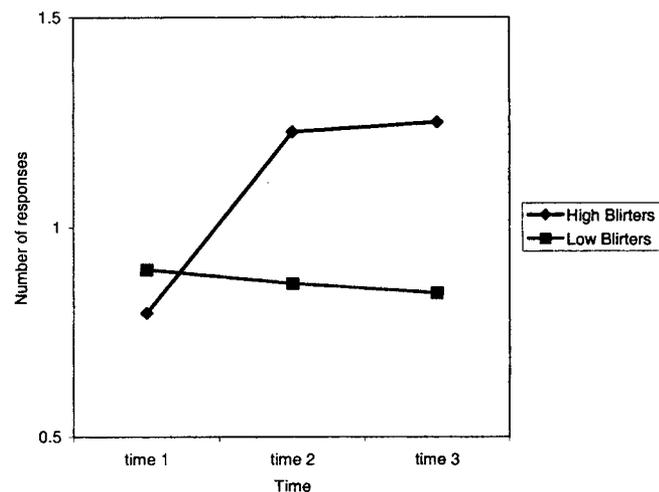


Figure 7. Judges' ratings of the number of times participants responded in Study 7.

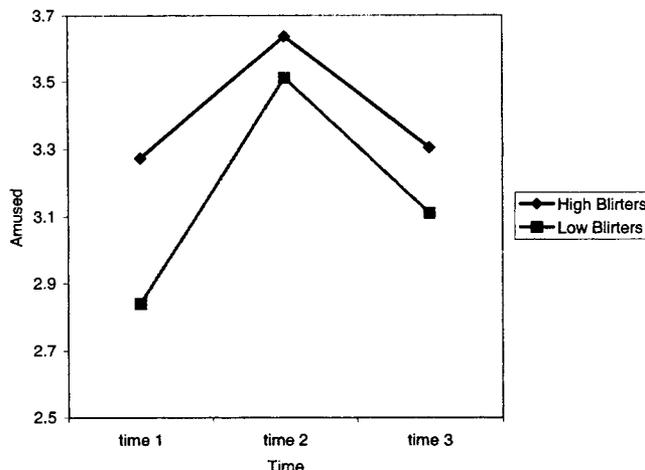


Figure 8. Judges' ratings of participants' amusement in Study 7.

ables (RAS, PANAS, neuroticism, and emotional expressivity) significantly predicted the criterion variables when substituted for the BLIRT. These 28 regressions yielded only two significant relations: Both positive affectivity (PA) and neuroticism predicted judges' ratings of irritation ($\beta_s = -.21$ and $.38, t_s = -2.01$ and 3.96 , respectively, $ps < .05$). We also partialled out each of the other potential predictors of each criterion variable to determine whether the BLIRT effect remained. Of the 28 partial regressions, only 2 reduced the BLIRT effect below the .05 level: partialing out PA in predicting judges' ratings of amusement made the BLIRT effect marginally significant ($\beta = .2, t = 1.66, p < .095$), and partialing out negative affectivity in predicting judges' ratings of amusement made the BLIRT nonsignificant ($\beta = .197, t = 1.36, p < .18$).

Blirtatiousness as an amplifier of emotional states. Did blirtatiousness amplify participants' emotional reactions? As in Study 6, we asked whether pulse pressure was more closely related to judges' ratings of irritation and amusement among high compared with low blirters. It was. That is, when we regressed the index of similarity of pulse pressure and judges' ratings of irritation by computing a d^2 statistic and regressing this index on BLIRT scores, the BLIRT effect was significant ($\beta = -.32, t = -2.17, p < .04$). Similarly, when we regressed the d^2 index of

⁵ We took several steps to ensure that participants did not attempt to make physical contact with the confederate as a few did in an earlier study of this type (e.g., Cohen et al., 1999). First, the confederate's appearance was not at all threatening, and his demeanor and behaviors were so clearly inappropriate that participants attributed his actions to his (apparently) bizarre personality rather than taking it personally. Second, we positioned the confederate by the door of the cubicle so that had any participants approached him he could beat a hasty retreat into the hallway.

⁶ We defined a verbal response as any statement that was directly related to the confederate's provocations, such as, "You really suck at basketball" or "What's your problem, man?" As such, questions about which dorm the confederate lived in or who his psychology professor was were not included. In addition, we deleted one judge's scores from all analyses involving the amusement variable because including them lowered the intraclass correlation coefficient.

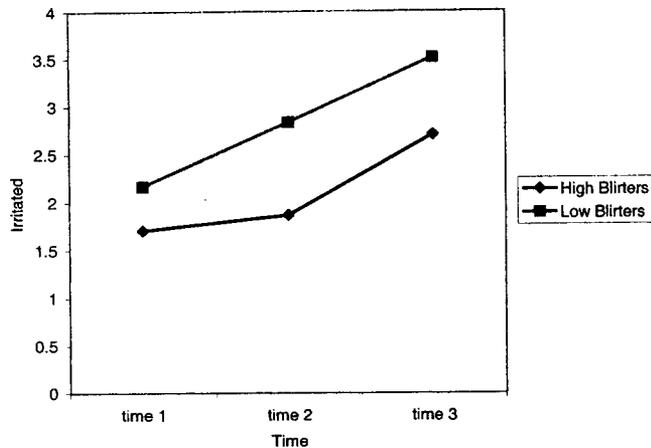


Figure 9. Judges' ratings of participants' irritation in Study 7.

similarity of pulse pressure and judges' ratings of amusement on BLIRT scores, the BLIRT effect was again significant ($\beta = -.34$, $t = -2.31$, $p < .03$). When we successively substituted other potential amplifier variables—extraversion, assertiveness, and impulse strength—for the BLIRT in predicting the amplification of emotional reactions, none of them were significant ($ts < 1$). Moreover, when we partialled out the effects of these other potential amplifiers, the BLIRT effect remained significant ($p < .05$) in all six of the regression equations.

General Discussion

We introduce a measure of interpersonal blirtatiousness (the BLIRT) and present evidence of its reliability and validity. The BLIRT has desirable psychometric properties (substantial internal consistency, temporal stability, discriminant and convergent validity) and predicts several distinct phenomena in the field and laboratory. For example, it was able to discriminate two known groups of high and low blirters, with car salespersons outscoring librarians and Americans outscoring Asians. In a study of telephone conversations between strangers, high compared with low blirters responded to their partners more frequently, rapidly, and effusively. Moreover, the loquaciousness displayed by high blirters during these conversations prompted their interaction partners to ascribe a host of positive characteristics to them. Finally, blirtatiousness "amplified" people's characteristics so that the partners of high blirters detected their qualities more readily than the partners of low blirters.

In a prospective field investigation, the BLIRT scores of university students predicted the impressions their classmates formed of them both early and later in the semester. Early in the semester, classmates imputed more competence and likability to high compared with low blirters. As their classmates acquired more information about high blirters, however, they became progressively less enchanted with those whose intellectual contributions to the class were modest (as indexed by low grades). At the same time, their classmates became more favorably disposed toward low blirters as the semester unfolded. Once again, blirtatiousness amplified participants' qualities, in that ratings of the competence

were more closely aligned with the classmate's grades if that classmate was a high versus a low blirter.

A follow-up study compared the reactions of high and low blirters to a female confederate who evoked their ire by chatting incessantly on a cell phone while she was supposed to be completing the experiment. Whereas high blirters were more likely to say something to the confederate but stayed calm, low blirters remained quiet while they became physiologically aroused. Moreover, blirtatiousness again amplified participant's qualities, making it easier for judges to infer the extraversion and emotional states of high compared with low blirters.

In the final study, a confederate posing as a fellow participant besieged the actual participant with a series of insults and aggravations as the participant attempted to draw. High blirters responded by attempting to draw the confederate into conversation or by defining his provocations as humorous. In contrast, low blirters withdrew and became visibly disgruntled and highly aroused. As in the earlier studies, blirtatiousness amplified participants' qualities in that judges were better able to infer the emotional states of high compared with low blirters.

Our findings thus showed that scores on our measure of blirtatiousness predicted overt behavior in several distinct situations, ranging from private, one-on-one interactions in the laboratory to public, group interactions in classrooms. Moreover, the BLIRT predicted how participants responded in emotionally neutral settings (classroom discussions and getting-acquainted conversations) as well as relatively volatile settings that aroused emotions ranging from amusement to irritation.

Blirtatiousness and the Amplification of Personal Qualities

We believe that our most provocative finding was that blirtatiousness "amplified" people's unique qualities, making high blirters more recognizable to others than low blirters. In particular, blirtatiousness amplified (a) competence, (b) several traits related to sociability, (c) emotional reactions, and (d) extraversion. Moreover, this amplification effect persisted no matter what other variable (e.g., extraversion, assertiveness, shyness) we partialled

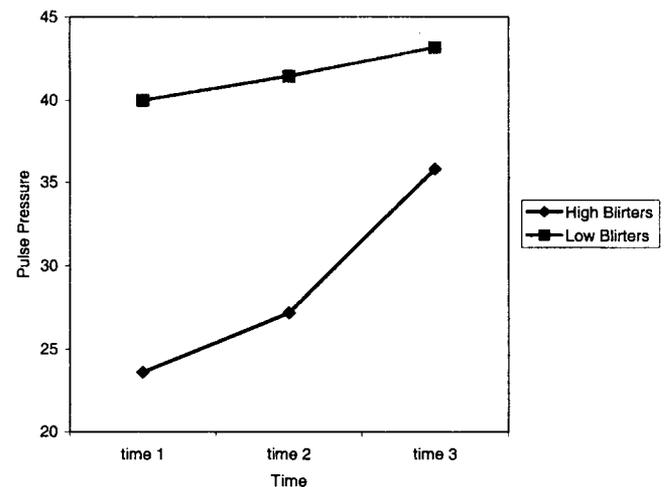


Figure 10. Pulse pressure during the experimental session in Study 7.

out. Although there were a few instances in which extraversion amplified participants' qualities, the extraversion effect vanished when the BLIRT effect was partialled out. Finally, whereas the BLIRT amplified extraversion, extraversion did not amplify blirtatiousness. In short, in our research, the BLIRT was a more potent amplifier of personality characteristics than extraversion.

The facility with which blirtatiousness amplified people's characteristics may have interesting implications for the literature on accuracy in person perception because it indicates that high blirters are "good targets" (i.e., particularly easy to assess accurately; Colvin, 1993a, 1993b; Funder, 1999). Consider also that (a) blirtatiousness amplified people's characteristics independent of extraversion, but the reverse was not true, and (b) the BLIRT amplified extraversion, but the reverse was not true. Together, these findings offer a new perspective on past evidence that extraverts are "good targets" (Ambady, Hallahan, & Rosenthal, 1995). Specifically, it appears that the BLIRT taps the core attributes of the "good target." Moreover, past researchers may have identified extraverts as good targets only because measures of extraversion indirectly tap blirtatiousness. More generally, these findings support Paunonen and Ashton's (2001) suggestion that the Big Five personality factors, of which extraversion is presumably the most closely related to blirtatiousness, has not cornered the market on predictive utility. Rather, more narrow traits such as blirtatiousness may sometimes outperform Big Five traits.

Consequences of Blirtatiousness

Just as the behavioral markers of blirtatiousness may sometimes be highly visible, at other times they may be rather subtle. Evidence that high blirters were overrepresented in a group of car salespersons and low blirters were more likely to find employment as librarians, for example, suggests that finding a high versus low blirter may simply be a matter of finding out how someone is employed. Other behavioral differences between high and low blirters may be remarkably subtle, however. Examination of the results of our study of getting-acquainted conversations, for example, revealed that the average response latency of high versus low blirters was .93 and .70 s, respectively, a difference of only .23 s. Although two tenths of a second hardly seems noticeable, our data show that our participants' interaction partners did indeed notice it at some level, because these subtle differences mediated the link between BLIRT scores and the impression of participants' interaction partners. In particular, the speedier responses of high blirters partially explained why their interaction partners liked them more than low blirters.

The fact that high and low blirters elicited unique reactions during the getting-acquainted conversations was especially impressive given that participants could not see each other during the conversations. This means that blirtatiousness systematically shapes the impressions of observers even when observers have no access to visual and paralinguistic cues. The results of the classroom study indicate that blirtatiousness also shapes people's impressions when visual and paralinguistic cues are present. Presumably, then, whether the interaction takes place over the telephone, a cocktail party, or a business meeting, high levels of blirtatiousness can reap rich dividends.

The consequences of blirtatiousness do not seem to be limited to the interpersonal domain. In fact, blirtatiousness may even influ-

ence people's physiological reactions. Specifically, when a confederate either blathered away on a cell phone or repeatedly struck the participant with wads of paper, low blirters muted their overt reactions while their physiological systems (as indexed by blood pressure) slipped into overdrive. High blirters, in contrast, attempted to engage the confederate by speaking to her or him, presumably in an effort to defuse the situation. Given that higher pulse pressure is related to heart disease (e.g., Krantz & Falconer, 1997), the reactions of high blirters appear to have been more adaptive.

Whether the emotional expressiveness of high blirters offers an adaptive advantage in other contexts remains to be seen. Nevertheless, we can imagine at least one other context in which blirting one's feelings might be adaptive. Gottman (1994) discussed a tendency for husbands to "hold in" their concerns about their wives' behaviors. Because their concerns are never made explicit, they are not addressed. Eventually, the man may withdraw in frustration ("she obviously doesn't care about me!"). The wife may interpret such withdrawal as a sign of disinterest in the relationship and respond by intensifying her efforts to draw the man out. The husband may interpret these efforts as nagging, which may further alienate him and reinforce his decision to withdraw. Gottman's research suggests that relationships in which the husband displays such a pattern of withdrawal ("stonewalling") can be fraught with difficulty (e.g., Swann & Rentfrow, 2001).

Yet should it seem that low blirters are doomed, we hasten to add that high levels of blirtatiousness can sometimes be costly. One reason is that high levels of blirtatiousness serve to amplify people's bad as well as good characteristics. When someone happens to have a negative quality, such as low motivation, insensitivity, or a surly personality, high levels of blirtatiousness will raise the possibility that others will notice the flaw. For example, in our classroom study, students with low grades elicited more negative reactions if they were high versus low blirters. Presumably, low blirters were better able to keep the poor quality of their work out of the limelight. For high blirters, however, their academic shortcomings were eminently visible. This applies to other qualities as well, including emotional reactions and traits related to sociability. This suggests that both high and low blirters are likely to experience their share of life difficulties.

Remaining Questions

We believe that there are three classes of questions future researchers should ask about blirtatiousness. First, what are the antecedents of blirtatiousness? One could address this question on several different levels. For example, what qualities predispose a given individual to become a high blirter? Is it the extent to which people are able to articulate what they think and feel, a lack of concern with expressing oneself, or a sense of urgency in responding to others? In addition, what are the constitutional (e.g., temperamental) and experiential (cultural, socialization) factors that contribute to blirtatiousness? Cohen et al. (e.g., Cohen & Nisbett, 1997; Nisbett & Cohen, 1996) already specified one set of cultural factors that seem important here: Within the United States, people who have grown up in the South come to subscribe to a "culture of honor" that negatively sanctions emotional expressions. In effect, then, the culture of honor discourages blirting. People may accord-

ingly suppress their anger reactions until they are so infuriated that they become physically violent.

The second class of questions includes the cognitive and motivational mechanisms that give rise to blirtatiousness. For example, why are some people better able to articulate their thoughts and feelings than others? Are such differences a result of variation in elaboration of mental representations, or do they reflect differences in fear of negative evaluations (as suggested by the correlation between the BLIRT and the FNE)? Similarly, why do some people feel an urgency to respond quickly? Is it a desire to feel connected to others or a discomfort with silence in social interaction?

The third class of questions involves the consequences of blirting. The research that we have reported here points to several such consequences. In addition, the work of Gottman and his colleagues (e.g., Gottman, 1994) suggests that blirting or failing to blirt may also have considerable impact on relationship harmony. Furthermore, our evidence that blirtatiousness serves to amplify people's qualities suggests that high blirters are "good targets" who are easier to get to know. If so, blirtatiousness may foster accuracy in relationships, and this may, in turn, influence the quality of relationships. Addressing this possibility and related ones not only should illuminate the nature of blirtatiousness, but it may also provide insights into the antecedents of harmony and disharmony in close relationships.

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