

Shyness as a Final Common Pathway for Two Different Kinds of Inhibition

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This study suggests that the presence of strangers and the anticipation of social evaluation induce state shyness independently of each other and do not interact with trait shyness. This independence was found for 3 different methods of assessing state shyness in real dyadic interaction. Behaviorally, shyness toward strangers, but not evaluative shyness, was indicated by a closed body posture; evaluative shyness, but not shyness toward strangers, was indicated by blushing. Ss' free verbal descriptions of their emotions and cognitions obtained during the videoreconstruction of the shyness-inducing situations revealed that they were less aware of fear of strangers than of fear of social evaluation. These results and developmental considerations suggest that state shyness can be reconstructed as a final common pathway for at least 2 different kinds of inhibitory processes and that trait shyness among adults involves a particular susceptibility to both kinds of inhibition. This view of shyness is related to Gray's (1982) concept of inhibition and to the self-presentational approach to social anxiety by Schlenker and Leary (1982).

Since Zimbardo (1977) directed the attention of psychologists to the folk notion of shyness, a substantial body of research has been dedicated to reconstructing shyness as a psychological construct (cf. R. Crozier, in press; Jones, Cheek, & Briggs, 1986). Although no widely shared conceptualization of shyness has yet been reached, this research has allowed for at least four specifications of the lay concept of shyness.

First, the transient affective state of *state shyness* should be clearly distinguished from *trait shyness*, that is, interindividual differences in state shyness that are rather stable over time and across a wide variety of social situations. Second, state shyness, similar to all affective states, should be perceived as a syndrome encompassing experiential and overt behavioral processes that are often, but not always, consistent with each other (cf. Asendorpf, in press-a; Izard, 1977; Leary, 1986). Third, state shyness occurs only in social situations and always involves an elevated level of anxiety that refers to certain aspects of current or future interactions. Because state shyness also involves positive affect such as interest (Izard & Hyson, 1986; Mosher & White, 1981),

the emotional experience accompanying state shyness can be described as mixed feelings, or emotional ambivalence. Fourth, trait shyness is also characterized by an elevated level of anxiety, but not by positive affect. For example, in Asendorpf's (1985) study, 192 students rated their likely reactions to various social situations that induced state shyness to different degrees. Reports of happiness increased with increasing state shyness, but correlated negatively with trait shyness (cf. Epstein, 1983, for similar discrepancies between intraindividual and interindividual covariations among emotions).

Asendorpf (1986, in press-b) suggested that the mixed feelings often observed in state shyness reflect an approach-avoidance conflict: State shyness arises when people are motivated not only to approach others but also to avoid them. This conflict notion of state shyness allows one to distinguish state shyness from disinterest in social interaction (low approach and low avoidance motivation) and from social avoidance (low approach and high avoidance motivation).

The nature of the assumed avoidance motivation in state shyness needs further clarification because two different types of avoidance can be distinguished. In animal research and human psychopharmacology, some researchers have tried to clearly distinguish between active and passive avoidance (cf. Fowles, 1987; Gray, 1982; Mackintosh, 1974). In active avoidance situations, safety cues (conditioned stimuli for nonpunishment) activate an escape response so that the organism can avoid punishment. Thus, active avoidance is functionally equivalent to approach-motivated behavior: Active avoidance always implies approaching an alternative. In passive avoidance situations, inhibitory

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cues (conditioned stimuli for punishment or for frustrative nonreward) inhibit approach behavior so that the organism can avoid punishment or frustrative nonreward. Active and passive avoidance appear to involve different psychophysiological systems and are differentially influenced by drugs such as the minor tranquilizers or alcohol (cf. Gray, 1982).

The distinction between active and passive avoidance may also be applied to human social behavior. In this case, however, the notion of avoidance-motivated behavior should be expanded to encompass human emotional behavior mediated by more complex situational evaluations such as checking one's coping potential or comparing one's behavior with social norms or self-presentational goals (cf. Scherer, 1984, for a model of emotional behavior that takes such evaluations into account).

When this expanded concept of active and passive emotional avoidance is applied to state shyness, it seems clear from the literature on situational antecedents of state shyness (cf. Russell, Cutrona, & Jones, 1986; Zimbardo, 1977) that the label *shy* is used in lay psychology to describe the feeling and behavior during the passive avoidance of sociable behavior, that is, during the emotional inhibition of behavior that serves to initiate or to continue social interaction. People who actively escape a social situation would rarely be labeled as *shy*. Also, the experience and behavior during volitional active or passive avoidance (e.g., deliberately being quiet in the presence of a choleric person in order to avoid conflict) would not be labeled as *shy*. Thus, state shyness may be reconstructed as the affective state induced by *social inhibition*, that is, by the emotional inhibition of sociable behavior.

Given this reconstruction of state shyness, there are three central questions: which situations arouse social inhibition, what more specific features of these situations trigger inhibitory processes, and are these inhibitory processes all alike, or do they differ in important aspects? Extending this analysis to trait shyness, one might also ask whether interindividual differences in the tendency to react with inhibition are consistent across different kinds of social situations (e.g., situations that trigger different inhibitory processes). Note that these two questions are independent in principle. Interindividual differences in social inhibition may be consistent across situations that induce inhibition by different mechanisms, and even if these mechanisms are universal, their outcome in terms of experience and behavior can be moderated by interindividual differences in other processes interfering with these mechanisms.

Concerning the first question regarding the situational antecedents of social inhibition, studies of state shyness have consistently found evidence for at least two different kinds of situational conditions for self-rated state shyness: the presence of strangers and the anticipation of social evaluation. When students high in self-rated trait shyness were asked to indicate what types of people made them shy, the most frequently reported types were strangers (70%), members of the opposite sex (64%), and authorities by virtue of their knowledge (55%); this rank order was essentially the same for respondents low in trait shyness (Zimbardo, 1977). Russell et al. (1986) similarly found that strangers and authority figures were those most frequently reported by an unselected sample of students being asked to list shyness-eliciting situations (78.6% in both cases). Also, an inspection of the items of situation inventories containing

shyness-eliciting situations (e.g., the 30-item inventory cited in Russell et al., 1986) or of the items of the many existing personality scales designed to measure trait shyness (e.g., Cheek & Buss, 1981; Leary, 1983) shows that meeting strangers and talking to authority figures or being the center of others' attention receive comparably high ratings for shyness. However, this evidence is quite sketchy; no study of hypothetical situations that has systematically varied both the familiarity of the interaction partners and the social-evaluative features of the situation appears to exist. A study such as this would allow one to evaluate the effects of both of these situational variations and their interaction on state shyness.

Concerning real social situations, again only scattered evidence exists for the contribution of unfamiliarity and social evaluation to state shyness. Many studies have used a "waiting-room paradigm" for observing interindividual differences in shyness, affiliative tendencies, and social skills (e.g., Arkowitz, Lichtenstein, McGovern, & Hines, 1975; Cheek & Buss, 1981; Mehrabian & Ksionzky, 1974; Pilkonis, 1977). Usually, the subjects in these experiments meet another subject or a confederate of the experimenter who is a stranger to them. Because most of these studies have focused on interindividual differences, they often lack a control situation that would allow an estimation of the effect of the partner's unfamiliarity. Social-evaluative features are frequently introduced in these waiting-room experiments, but again often without a control situation. Although dozens of well-documented experiments of this kind are reported in the literature, apparently no study has systematically and independently varied the unfamiliarity of the partner and the social-evaluative meaning of the situations.

More evidence exists for the separate contributions of social evaluation and of unfamiliarity to shyness. Leary and Schlenker (1981) reviewed a considerable number of studies supporting the view that the prospect or presence of an undesired social evaluation is an important antecedent of both state and trait shyness. Schlenker and Leary (1982) called state shyness due to the prospect or presence of personal evaluation *social anxiety* and integrated this kind of shyness into the self-presentational approach to social interaction proposed by Schlenker (1980). According to this view, social anxiety arises in social situations in which people are motivated to make a particular impression on others, but doubt they will do so because they expect unsatisfactory impression-relevant reactions from others.

This view fits into the expanded concept of social inhibition previously outlined. The motivation to impress others can be regarded as an approach motive, and the socially anxious feelings and behaviors can be viewed as a consequence of inhibition that results from the expectation of an undesired evaluation (punishment) or of an insufficiently positive evaluation (frustrative nonreward). Thus, Schlenker and Leary's (1982) self-presentational approach to social anxiety may be regarded as an elaboration of Gray's (1982) concept of inhibition for the particular case of *social-evaluative inhibition* (inhibition due to an unsatisfactory social evaluation).

Asendorpf (1987) confirmed that social-evaluative inhibition plays a pivotal role in trait shyness in social-evaluative situations. Subjects high or low in trait shyness watched videotapes of their interaction with a confederate, including their apprehension of the social evaluation and feedback provided by the

confederate. Their free verbal responses to particular events during these situations were content-analyzed. As predicted by the self-presentational approach, the shy subjects recalled more fear of being evaluated by their partner, but did not report other kinds of fear more often than did the subjects lower in trait shyness. However, this result does not exclude the possibility that other kinds of inhibitory processes may exist that discriminate between people high and low in trait shyness in other kinds of shyness-inducing situations.

A possible candidate for inhibitory processes, which are different from processes responsible for social-evaluative inhibition, are those mediating inhibition to the second major class of situations inducing state shyness: those involving unfamiliar people. This is not trivial, because the inhibiting effect of strangers can be due at least in part to social-evaluative inhibition. Strangers' impression formation is less predictable than that of familiar people; the higher unpredictability of strangers' reactions should then increase social-evaluative inhibition, given a sufficiently high motivation to convey a particular image to the strangers. On the other hand, if a person's motivation to impress the strangers is very low, the self-presentational approach would predict no social-evaluative inhibition. If in this case people were nevertheless to react to the strangers' presence with inhibition, this kind of inhibition could not be explained by the self-presentational approach; it must be mediated by different processes of situational evaluation.

Developmental considerations suggest that this type of mediation of inhibition to strangers exists early in life and may continue to operate through adulthood. Many studies have consistently demonstrated that around the age of 8 months, infants begin to display "wary" reactions to adult strangers (see Horner, 1983, and Sroufe, 1977, for reviews). Although considerable interindividual differences exist in the beginning, duration, and intensity of this reaction, it seems almost universal among infants of all cultures. At this early age, wariness to strangers varies on a continuum from a slightly negative reaction ("wary brow") to intense crying. Later, during early childhood, a clear-cut negative response becomes less and less likely. Instead, children often show a mixture of both sociable and wary behavior (e.g., lengthy coy expressions of smiling accompanied by gaze aversion; cf. Bretherton & Ainsworth, 1974; Greenberg & Marvin, 1982). This ambivalent behavior toward strangers nicely illustrates the approach-avoidance conflict in state shyness.

Kaltenbach, Weinraub, and Fullard (1980) made the puzzling observation that the mothers who accompanied their infants also displayed an initial wariness to strangers that was very similar to the ambivalent behavior observed among young children (cf. Asendorpf, in press-a, for a more detailed discussion). Thus, a continuity of the behavioral expression of wariness to strangers appears to exist from early childhood to adulthood. This continuity questions the assumption that, among adults, inhibition in the presence of strangers can be completely reduced to social-evaluative inhibition.

Young children below the age of 4 years seem incapable of the complex cognitive processes involved in Schlenker and Leary's (1982) approach to self-presentational behavior. The ability to take others' perspective and, more generally, to represent the relation between two people's views, emerges between the ages of 4-6 years (Flavell, Botkin, Fry, Wright, & Jarvis, 1968; Wim-

mer & Perner, 1983), and it is rather likely that looking at oneself from the perspective of others is an even more complex cognitive task that perhaps emerges even later (hard data concerning this issue are apparently lacking). Thus, social-evaluative inhibition seems not to emerge before the age of 4 years, and inhibition to strangers among infants and young children cannot be explained within the self-presentational approach (see also Buss, 1986). Rather, it seems that inhibition to strangers at that early age is a biologically predisposed reaction, with cognitive involvement at a lower level than the later-developing social-evaluative inhibition.

In principle, there are three possible ways in which the early form of inhibition to strangers and social-evaluative inhibition might be related to adulthood. A *fading hypothesis* suggests that the inhibition to strangers observed among infants and young children fades away during ontogenesis; if people react with inhibition to strangers later in life, this would occur always and only as a result of self-presentational concerns. An *additivity hypothesis* proposes that the early form of inhibition continues through adulthood and simply adds up with an additional social-evaluative inhibition that may or may not arise in social interaction with strangers, depending on whether people care much about the image they convey to the stranger. An *interaction hypothesis* posits that both kinds of inhibition can be activated among adults simultaneously, and interact in a nonadditive way; for example, the presence of well-known friends would prevent any social-evaluative inhibition, or an increasing unfamiliarity of interaction partners would disproportionately increase social-evaluative inhibition.

These developmental questions can be fully answered only by longitudinal studies of the development of wariness to strangers and of social-evaluative inhibition. However, they can also be investigated at least in part by studying adult state shyness across situations involving strangers and social evaluation. If the unfamiliarity and the evaluative potential of interaction partners were systematically varied across different situations, then one could detect a possible interaction of the effect of unfamiliarity and evaluation on state shyness. Furthermore, if the fading hypothesis were true, then reports of state shyness, of fear of undesired social evaluation, and of cognitions related to the impression of the interaction partner should covary closely across these situations. On the other hand, if an early, cognitively less mature form of inhibition to strangers were to prevail through adulthood, then people should report more state shyness, should be perceived by their partners as more shy, and should react with more behavioral inhibition toward their partners relative to the degree of fear of social evaluation or the frequency of impression-related cognitions. This "shyness surplus" would indicate that people's shyness toward strangers is mediated by inhibitory processes different from those responsible for social-evaluative inhibition. This was the first set of hypotheses tested in the present study.

The second set of hypotheses concerned the consistency of trait shyness across situations involving strangers and social evaluation. As pointed out earlier, even if the inhibitory processes triggered by these two kinds of situations were different, this distinctness would not exclude the possibility that trait shyness does not interact with these processes. In factor analyses of scales designed to measure trait shyness, items referring to

strangers and items tapping social evaluation cluster together (see W. R. Crozier, 1979; Jones, Briggs, & Smith, 1986, for reviews). If it is possible to construct highly internally consistent scales for trait shyness, with items referring to situations involving both strangers and social evaluation, then it is likely that interindividual differences in state shyness are highly consistent between both types of situations. Thus, I expected no interaction between trait shyness and the presence of strangers versus social evaluation.

The present study was an attempt to test these hypotheses empirically. First, I reanalyzed data from a study partly reported in Asendorpf (1987, 1988). Second, I conducted a new experiment in order to obtain a stricter test of the hypotheses.

Reanalyses

In a study involving 70 students selected for high or low scores in self-rated trait shyness, wariness of strangers and fear of social evaluation were systematically varied in a within-subjects design that also included a control situation (see Asendorpf, 1987, 1988, for details). In a waiting room, subjects met an unfamiliar confederate who played the role of another subject. The two partners ostensibly waited together for the study to begin (stranger condition). Then the experimenter induced fear of social evaluation by instructing both partners to get to know each other so that they could later evaluate each other's personality by means of a questionnaire (evaluation condition). After an extensive videoreconstruction of the evaluative situation, the subject and the experimenter conversed for some minutes; the subject was under the impression that the study was over and that he or she had to wait for the payment (control condition). All three situations were videotaped.

As expected, subjects reported less state shyness in the control condition than in the 1st two situations; $F(1, 65) = 64.29$, $p < .001$, for the appropriate contrast in a repeated measures analysis of variance (ANOVA). Also, the induction of fear of social evaluation proved successful. In the evaluation condition, subjects reported significantly more thoughts related to the impression they might have made on their partner than in the stranger condition, according to a structured self-rating; according to the confederate, who was instructed to observe subjects' blushing, subjects blushed about three times more often in the evaluative setting than in the other two situations (for the rate of blushing, $M = 0.18$, stranger situation; $M = 0.57$, evaluation; $M = 0.16$, control), $F(1, 65) = 16.30$, $p < .001$, for the appropriate contrast. Interobserver agreement for blushing was checked in an embarrassing situation in which both the confederate and the experimenter were present (partner feedback; cf. Asendorpf, 1987); agreement was high ($\kappa = .81$). The blushing data are particularly valuable for validating the evaluation induction because blushing is a response clearly related to evaluative thoughts and embarrassment, and cannot be voluntarily controlled (cf. Asendorpf, in press-a; Edelman, 1987).

However, the subjects' self-reported state shyness did not differ significantly between the stranger and the evaluation conditions ($M = 2.72$, stranger situation; $M = 2.81$, evaluation; $t < 1$), and observers rated the subjects in the stranger condition as even more shy ($M = 3.41$) than those in the evaluative setting ($M = 3.05$), $t(66) = 3.78$, $p < .001$, for the difference. Finally,

an analysis of the subjects' body posture with a new anatomically based coding system (see Method section) indicated that the subjects displayed a more closed posture in both the stranger and the evaluative conditions than they did in the control condition; $F(1, 65) = 4.07$, $p < .05$, for the appropriate contrast, with a nonsignificant tendency toward a more closed posture in the stranger condition as compared with the evaluative condition. Although firm data about the role of an open versus a closed body posture are rare, some studies suggest that a closed posture in social-conversational situations indicates uneasiness in social interaction (cf. Mehrabian, 1972).

Regarding a possible interaction between situational variation and trait shyness, none of the five variables analyzed showed a significant Situation \times Trait interaction.

This pattern of results is consistent with the interpretation that the subjects' state shyness was aroused in the stranger condition merely by the presence of the stranger. In the evaluative condition, wariness of strangers was lower than before because the two partners had already become somewhat familiar with each other. This decrease of state shyness due to the presence of strangers was compensated for, however, by an increase of state shyness due to the anticipation of social evaluation. In the control situation, when both the unfamiliarity of the partner and his or her evaluation potential were lower because the subject had known the experimenter for about 45 min and thought that the study was already over, state shyness decreased. Thus, these reanalyses provide some evidence that the fading hypothesis is not true: An early form of inhibition to strangers may continue through adulthood independent of social-evaluative inhibition. Blushing appears to be specifically related to embarrassment accompanying social-evaluative inhibition, whereas a closed body posture seems to be specifically related to inhibition to strangers.

It is only possible to interpret this pattern of results within Schlenker and Leary's (1982) self-presentational framework if one assumes that the induction of fear of social evaluation was unsuccessful in the evaluative condition, that the more frequent impression-related cognitions reported for this condition were emotionally neutral or positive, and that blushing is not related to fear of social evaluation. Although this interpretation seems very unlikely given the fact that subjects spontaneously reported fear of social evaluation during the videoreconstruction of the evaluative situation at an average rate of .45 per subject (cf. Asendorpf, 1987, Table 1) and the fact that 31% of their spontaneously reported impression-related thoughts in this situation were emotionally ambivalent or negative (cf. Asendorpf, 1987, Table 3), one cannot exclude the possibility that the subjects were plagued by similar evaluative fears in the stranger situation because this situation was not reconstructed. Either the videoreconstruction of both situations or a scale tapping fear of social evaluation are necessary to reject this alternative.

A second problem with the proposed interpretation is that it rests on the plausible but unproven assumption that subjects' inhibition to strangers decreased within 5–10 min at a rate comparable with the increase of inhibition due to the evaluation instruction. Furthermore, effects of adaptation to the observational setting in general and to the repetition of the same rating scales are confounded with comparisons of the three situations.

All in all, the results of these reanalyses suggested that there

may be some independence of inhibition to strangers and social-evaluative inhibition; however, another study with a design that allowed a less equivocal interpretation of the results was needed. Because it is very difficult to avoid the problems of adaptation and transfer effects from one situation to the next in a within-subjects design aimed at studying inhibition to strangers, I chose a between-subjects design. Basically, the familiarity of the interaction partner was varied by pairing strangers, good friends, and strangers who were made familiar with each other; evaluation was varied exactly as in Asendorpf (1987), but again in a between-groups approach. Structured scales tapping fear of strangers, fear of social evaluation, and state shyness were applied, and all situations were videoreconstructed with a technique similar to that used by Asendorpf (1987) and Ickes, Robertson, Tooke, and Teng (1986). Again, the subjects' body posture was analyzed; blushing could not be recorded because there was no confederate to observe it (blushing cannot be reliably detected on videotapes).

Method

Pretest

A self-selected sample of 143 male students at the Universities of Munich (excluding psychology students) were pretested with a questionnaire that contained (a) the items of the German version of the Extraversion and Neuroticism Scales of the Eysenck Personality Inventory (Eggert, 1974) in their original order and (b) the items of the Shyness Scale applied in Asendorpf (1987). As all items had to be rated on 7-point scales ranging from *never* to *always*, some of the EPI items had to be reformulated to fit this response format.

The internal consistencies of the scales were $\alpha = .85$ (Shyness), $\alpha = .79$ (Extraversion), and $\alpha = .88$ (Neuroticism); Shyness correlated $-.52$ with Extraversion and $.43$ with Neuroticism, and Extraversion correlated $-.23$ with Neuroticism.

Subjects

Between 3 and 9 weeks after the pretest, 121 subjects of the pretest sample came to the laboratory to participate in a study on social perception. Two of them were already friends and 23 were asked to bring a friend along with them; the 23 friends answered the pretest questionnaire immediately on arrival at the lab. Thus, 144 subjects participated in the study. They received DM 15 (\$9) for their participation and were assured that they could discuss their data with an experienced psychologist later.

Design

Dyadic interaction. All subjects were observed in dyads. A female experimenter guided them to the observation room where they first answered a state questionnaire about their actual cognitions and emotions. They then received either the evaluation or the control instruction and talked for 5 min with their partner. After this conversation, the experimenter returned and asked them to answer a questionnaire containing various scales tapping (a) their cognitions and emotions during the conversation and (b) the subject's evaluation of the personality of his partner. The experimenter assured the subjects that their partner would not learn their answers in this questionnaire. When both partners had completed the questionnaire, the experimenter asked them if they were interested in getting a copy of the partner's evaluation sheet; she could do this if both partners explicitly agreed. This whole procedure was

unobtrusively videotaped through a one-way mirror from the moment the subjects entered the room until the experimenter's last question.

Videotape reconstruction. After the subjects had decided whether they wanted to see their partner's evaluation, they participated in a 30-min videotape reconstruction of the preceding situation. The partners were interviewed individually by the experimenter and a second female experimenter. First, they were debriefed regarding the video recordings and were asked to give their consent to a scientific evaluation of the tapes. Two friends of the same dyad refused to do so; their recording was immediately erased, and no reconstruction was done with them.

Subject and experimenter watched the beginning of the tape until the instruction was shown. The experimenter then stopped the tape and asked the subject (a) "How did you feel at this moment?" (b) "Did you fear something? If yes, what?" and (c) for a rating on 7-point scales (*not at all* to *very much*) labeled *Fear of having to evaluate the partner* and *Fearful because I did not know the partner*. The subject's free responses to the first 2 questions were audiotaped.

The experimenter next rewound the videotape to its beginning and asked the subject to remember as accurately as possible the thoughts and feelings he had had during the situations shown on the tape and to verbalize them *continuously*. This instruction was aimed at maximizing the information obtained from the subject as well as at increasing validity by somewhat undermining the subject's self-presentation or defense strategies. For practice, the subject first responded to the tape until the instruction had been shown. Then the subject's reconstruction of the 5 min of conversation and of the experimenter's question regarding removal of the secrecy of the evaluation was audiorecorded.

Situational conditions. Each of the 72 dyads of subjects was assigned to one of 3×2 situational conditions yielding 24 subjects in each condition. The acquaintanceship with the partner was varied in three levels. In the friend condition, the subjects were asked to bring a friend along with them; a friend was defined as "any male peer who has known you quite well for at least 6 months." In the two other conditions, the experimenter ensured before the experiment began that the two partners of each dyad did not know each other. In the acquainted condition, the two subjects met in a waiting room for some minutes and then took part in a 10-min game in a room adjacent to the observation room. They were asked to divide a big circle drawn on a sheet of paper into at least five segments, the size of which were to represent the relative amount of "energy" they would ordinarily spend on the topic indicated in the segment; examples for possible segments were given as friends, study, family, and particular hobbies. After 2 min, the first subject was asked to explain to his partner the difference between his segmentation and the partner's segmentation; after about 3 min, the second subject was asked to do the same. To make this procedure plausible to the subjects, their explanations were audiorecorded. However, the only aim of this procedure was to acquaint the partners with each other.

Furthermore, apprehension of evaluation was varied in two levels. In the evaluation condition, the experimenter explained to subjects the cover story that the study was concerned with differences between self- and other-perceptions of personality. She instructed the subjects to use the next few minutes to get to know the partner's personality (for non-friends), or to again make up their minds about the friend's personality (for friends); the experimenter then left the room. In the control condition, the experimenter pretended to have forgotten to copy some papers necessary for the study and left the room, promising to be back in a few minutes.

The subjects were assigned to these situational conditions in order to ensure that (a) the three terciles of the pretest distribution of trait shyness were evenly represented within each condition, and (b) the possible combinations of the partners' trait shyness in terms of these terciles (e.g., high-high, high-low) were also evenly represented within each condition.

Dependent Measures

Self-ratings. The subjects were presented with a state questionnaire containing seven 7-point scales of an intensity format (*not at all–very much*). One was labeled *shy–inhibited*; one, *I was thinking about what my partner might think of me*; and another, *I feared making a bad impression on my partner*. Only these three scales were analyzed; the others (which measured feelings of anger, happiness, anxiety, and interest) were administered only to conceal from subjects the fact that the study focused on shyness. In addition, two self-rating scales were applied during the videotape reconstruction session.

Partner evaluation. The partner evaluation questionnaire contained nine 7-point scales of an intensity format tapping states and traits of the subjects' partner. One scale was labeled *shy–inhibited* and was used as a partner-rating of the subjects' state shyness. The other scales (e.g., ego-centric, joyful) were used to make the study's cover story plausible to subjects and were not analyzed.

Observer ratings of shyness. The first and last 2 min of all videotaped 5-min conversations were presented to two judges who were blind to both the subjects' self-rated trait shyness and their situational condition. To ensure the judges' blindness to the situational conditions, the recordings were shown with the sound turned off. To exclude the possibility that the shyness ratings of a particular subject were influenced by the behavior of the subject's partner, a piece of cardboard covered half of the video screen; hence, the judges watched only one of the two partners at a time. In various 90-min sessions, the two judges independently watched (a) the first 2 min of all subjects on the left of the screen and (b) the first 2 min of all the subjects on the right of the screen. The same procedure was then repeated for the last 2 min of each conversation. After each minute of observation, each judge rated the subject's shyness–inhibition on a scale that had the same response format as the self- and partner-rating scale. Thus, $2 \times 2 \times 2 \times 71$ ratings were sampled from each judge (the recordings of one dyad were erased as requested by the subjects; see Videotape reconstruction section).

Body posture. Hirscheider (1987) developed an anatomically based coding system for all arm positions possible in conversational situations in which subjects sit in a chair. The codes refer to 25 different positions for each arm that exhaust all anatomically possible positions when the arm is not moving. Photographs were taken of these 25 positions enacted by the same actor who used his right arm, leaving the left arm in a standard position. These photographs were presented to three judges in a paired-comparison task. Each judge decided for each of the 280 possible pairs of photographs which of each pair looked more "open." Aside from ensuring that each position did not recur in the sequence of pairs before all other positions were presented, the sequence of pairs was random. Each judge saw all 280 pairs in one session, with a 30-min rest period in each session. A high transitivity was found for each judge—in each case, Kendall's (1948) $\tau > .83$, $\chi^2(24) > 200$, $p < .0001$ —that is, judges arranged the 25 photographs in a nearly strict linear order for openness. I computed a score for closed body posture from these openness scores by standardizing them using the transformation $X = 1 - X/24$, in which 24 is the maximum possible openness score in the paired-comparison task. A very high consistency between the closed-body-posture scores of the three judges was found (Cronbach's $\alpha = .99$). Thus, the mean of the three judges' closeness scores was a highly reliable measure of the closeness of the arm position presented in each of the 25 photographs.

Subjects' arm positions were coded in terms of the 25 positions separately for their right and left arms at 30-s intervals. Reliability was determined by comparing the codings for two subjects within each experimental condition, that is, $2 \times 6 \times 10$ (Subjects \times Condition \times Codings per Condition) positions between two different coders. Cohen's κ varied between .71 and .96 for each subject, indicating sufficient agreement (for the reanalysis reported earlier, I found a similarly high reliability). Each code was then replaced by its closeness score, and the closeness

scores were aggregated over the 10 codings per subject and situation. As the closeness scores of the right and left arms were significantly positively correlated across subjects, they were also aggregated, yielding one closeness score per subject and condition.

Content analyses of free responses. The audiotaped free responses of the 142 subjects were searched through independently by one male and one female coder for (a) reports of anxiety as defined by the German words for *anxiety, fear, anxious, fearful, uncertainty, uncertain, insecurity, or insecure*; (b) reports of cognitions related to the impression of the subject's partner regarding the subject; and (c) when the subject mentioned the partner's unfamiliarity in a neutral or negative emotional context (excluding the few instances in which the unfamiliarity was associated with interest or curiosity). In all three cases, the inter-coder agreement was high (99% for anxiety, 89% for impression-related cognitions, 84% for unfamiliarity). Disagreements were subsequently resolved by a consensus coding, and the coded sentences were completely transcribed.

These coders then coded the transcribed reports of anxiety for five a-priori-determined categories: fear of being evaluated, fear of evaluating, fear of partner's unfamiliarity, uncertainty about own response (what to say, how to proceed, how to manage the situation), and other kinds of fear. Also, the raters coded the transcribed reports of impression-related cognitions for five a-priori-determined categories of emotional quality: positive emotion, interest, neutral, ambivalence (both positive and negative emotion), and negative emotion. Both codings were found to be highly reliable (in each case, percentage agreement was greater than 94% and Cohen's $\kappa > .88$). Coder disagreements were subsequently resolved by consensus.

During both coding steps, both coders were blind to any information about the subjects that was not contained in the audiotapes (e.g., to their trait shyness and to the experimental condition insofar as it was not revealed by the subjects' taped responses).

Results

Ratings and Body Posture

Table 1 contains the means and standard deviations of the seven variables for the three conditions of familiarity, the two evaluation conditions, and for the subjects scoring in the lowest and the highest tercile of the pretest distribution of trait shyness. Because no substantial interactions were found among these factors, only their marginals are reported. To illustrate these results, the means of the self-ratings of state shyness for all six experimental conditions are depicted in Figure 1.

The two groups high and low in trait shyness are directly comparable with those of Asendorpf's (1987) study. Although the terciles of the pretest distribution of trait shyness were evenly represented within each of the six situational conditions, the six groups nevertheless differed (nonsignificantly) in their mean trait shyness scores. Therefore, all situational differences were evaluated by analyses of covariance (ANCOVAs), with trait shyness as a covariate. As familiarity was varied in three levels (stranger, acquaintance, friend), this effect was tested by a linear trend within the ANCOVAs.

Each of the seven variables was analyzed by a 3×2 ANCOVA for the two situational effects and their interaction, including all subjects, and by a $2 \times 3 \times 2$ ANOVA for trait shyness and its interaction with the two situational effects, including only those subjects high and low in trait shyness. A priori hypotheses were tested by one-tailed t tests for the appropriate contrasts within these analyses; all other effects were tested by F tests or two-

Table 1
Means and Standard Deviations of Situations and Traits

Variable	Stranger		Acquainted		Friend		Control		Evaluation		Low in shyness ^a		Shy ^b	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Other-rated shyness during interaction	3.30	0.98	3.02	0.84	3.02	1.03	3.00	0.93	3.24	1.00	2.75	0.91	3.26	0.91
Closed body posture during interaction	0.58	0.13	0.54	0.14	0.51	0.14	0.54	0.13	0.55	0.14	0.51	0.12	0.57	0.13
Ratings after interaction														
Self-rated shyness	2.58	1.09	2.38	1.02	2.17	1.08	2.25	1.11	2.50	1.02	1.96	0.94	2.80	1.07
Partner-rated shyness	2.77	1.02	2.85	1.27	2.29	1.13	2.40	0.97	2.87	1.29	2.42	1.16	2.62	1.04
Fear of being evaluated	1.90	0.93	2.13	1.33	1.65	0.96	1.70	1.04	2.08	1.13	1.56	0.77	2.26	1.35
Ratings during videoreconstruction														
Fear of evaluating	1.75	1.23	2.33	1.84	1.92	1.41	1.36	0.74	2.64	1.82	2.04	1.71	2.15	1.61
Fear due to partner's unfamiliarity	1.73	1.09	1.96	1.35	1.34	0.85	1.59	1.06	1.79	1.23	1.49	1.12	1.98	1.30

Note. $N = 144$ subjects.

^a Lowest tercile of pretest distribution of trait shyness; $n = 47$.

^b Highest tercile of pretest distribution of trait shyness; $n = 54$.

tailed t tests. Table 2 presents the full results for the situational effects and the main effect for trait shyness; because none of the 7×3 interactions between trait shyness and the three situational effects reached significance, data about these interactions are not reported in this table.

In Table 2 it is indicated that all expected differences were at least marginally confirmed, and most expected nondifferences were proven to be not significant. The results for self- and partner-rated state shyness fit the hypothesis of an additive effect of unfamiliarity and evaluation very well (cf. Table 2 and Figure 1). As expected, fear of being evaluated and fear of evaluating were reported as higher in the evaluation condition than in the control condition and were not significantly related to familiarity, whereas fear of the partner's unfamiliarity showed the re-

verse pattern. Furthermore, the hypothesis that subjects high in trait shyness rated themselves higher on fear of being evaluated and fear of the partner's unfamiliarity than did those low in trait shyness was confirmed. Supporting the results of Asendorpf (1987), fear of evaluating showed a stronger evaluation effect than did fear of being evaluated and was not significantly related to trait shyness. Finally, the results for body posture replicated the finding of the reanalyses that a closed body posture is related to unfamiliarity but not to evaluation; furthermore, subjects high in trait shyness had a more closed body posture than did those low in trait shyness. For all these variables, not even a marginal Familiarity \times Evaluation interaction emerged (see Table 2).

The results for two variables deviated from expectation. First, the observer ratings of the subjects' state shyness only marginally confirmed the predictions for the familiarity and the evaluation effects. Also, an unexpected marginal Familiarity \times Evaluation interaction occurred. An inspection of the means of the six situational conditions revealed that the subjects in the acquainted-evaluation condition received lower shyness ratings than did the subjects in all other conditions except the friend-control condition. The pattern of means for the other five groups confirmed the hypothesis of an additive effect of familiarity and evaluation. An a posteriori contrast within an ANCOVA testing this deviation of only one of the six groups from expectation was significant, $F(1, 135) = 9.45, p < .003$. Second, an unexpected Familiarity \times Evaluation interaction occurred for fear of evaluating. An inspection of the means showed that this was an ordinal interaction due to a smaller evaluation effect among strangers than among the other subjects; an a posteriori contrast within an ANCOVA testing this ordinal interaction was significant, $F(1, 137) = 35.69, p < .0001$.

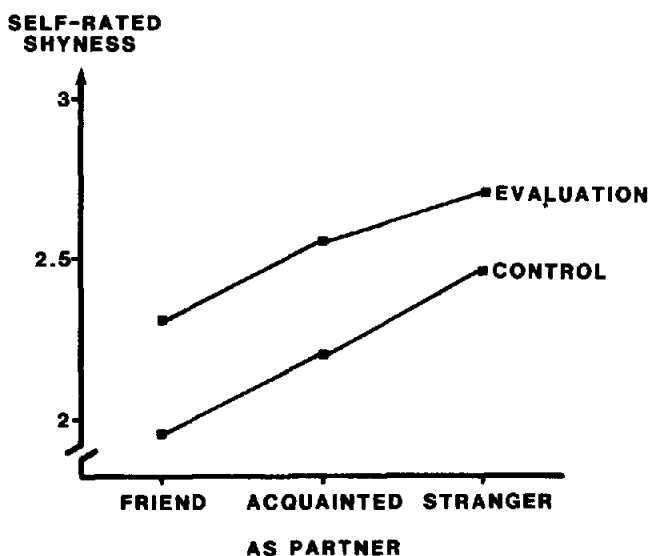


Figure 1. Self-rated state shyness in the six experimental conditions.

Content Analyses of Free Responses

Types of anxiety. Fear of the partner's unfamiliarity was only mentioned twice among the 142 subjects. Table 3 contains the

Table 2
Analyses of Variance and Covariance for the Situational and Trait Effects in Table 1

Variable	Analysis of covariance of situational effects ^a							
	Familiarity ^b		Evaluation		Familiarity × Evaluation		Trait shyness ^c	
	<i>F</i> (1, 137) ^d	<i>p</i> ^e	<i>F</i> (1, 137) ^d	<i>p</i> ^e	<i>F</i> (2, 137) ^d	<i>p</i>	<i>F</i> (1, 101) ^d	<i>p</i>
Other-rated shyness	2.38	.07	2.57	.06	2.74	.07	8.68	.01
Closed body posture	6.47	.01	0.61	—	0.88	—	4.77	.04
Ratings after interaction								
Self-rated shyness	5.37	.02	2.77	.05	0.08	—	17.86	.0001
Partner-rated shyness	4.61	.02	6.55	.01	0.04	—	4.51	.04
Fear of being evaluated	1.95	—	4.89	.02	0.29	—	10.51	.002
Ratings during videoreconstruction								
Fear of evaluating	0.30	—	32.24	.0001	3.14	.05	0.50	—
Fear due to partner's unfamiliarity	2.81	.05	1.24	—	0.01	—	3.33	.08

^a Pretest trait shyness as covariate.

^b Familiarity was tested by a linear trend.

^c Lowest and highest tercile of the pretest distribution of trait shyness were compared. None of the 24 interactions between trait shyness and situational effects reached significance.

^d Degrees of freedom for the error terms of the *F* tests differed slightly because of missing values.

^e All *p*s reported refer to one-tailed *t* tests of appropriate contrasts (with $|t| = \sqrt{F}$); for all unpredicted differences, $p > .15$ for the appropriate *F* tests.

relative frequencies of the remaining four types of anxiety for the situational conditions and for the subjects high and low in trait shyness.

Because a priori hypotheses existed for expected differences as well as for nondifferences for certain types of anxiety, I tested the situational effects by using ANOVAs separately for each type of anxiety; again, the unfamiliarity effect was tested by a linear trend analysis. The trait effects were tested simply by *t* tests because the small number of responses prevented a meaningful analysis of Trait × Situation interactions.

As expected, the evaluation condition evoked more frequent reports of fear of being evaluated than did the control condition, $t(136) = 1.69$, $p < .05$, one-tailed, and shy subjects recalled this type of anxiety more often than did subjects low in trait shyness, $t(99) = 1.80$, $p < .04$, one-tailed. The familiarity effect for fear of being evaluated was not even marginally significant, $F(1, 136) = 2.60$, $p > .10$; no significant Familiarity × Evaluation interaction was found, $F(2, 136) = 1.28$, $p > .25$.

The hypothesis that evaluation would also arouse more fear of having to evaluate the partner than would the control condition was not confirmed by the data (see Table 3). Instead, a highly significant Familiarity × Evaluation interaction emerged, $F(2, 136) = 7.08$, $p < .002$. An inspection of the means revealed that the expected difference was found both for strangers ($M = 0.00$, control; $M = 0.29$, evaluation) and for friends ($M = 0.04$, control; $M = 0.18$, evaluation), whereas a reversal occurred for acquainted subjects ($M = 0.50$, control; $M = 0.04$, evaluation). This reversal was not consistent with the structured ratings. When the subjects in the acquainted condition were removed from analysis, the expected evaluation effect was significantly confirmed, $t(90) = 2.55$, $p < .01$, one-tailed.

As expected, I found no other situational or trait effects ($F < 1$ in each case) for the particular types of anxiety. An analysis of the aggregate of the four types of anxiety revealed only a marginal evaluation effect, $F(1, 136) = 2.42$, $p = .12$.

Impression-related cognitions and emotions. Table 4 con-

Table 3
Relative Frequencies of Types of Anxiety Coded From the Subjects' Free Responses for the Situational Conditions and for Shy Subjects and Subjects Low in Shyness

Type of anxiety	Situational condition					Trait shyness ^a	
	Stranger (<i>N</i> = 48)	Acquainted (<i>N</i> = 48)	Friend (<i>N</i> = 46)	Evaluative (<i>N</i> = 70)	Control (<i>N</i> = 72)	Low (<i>N</i> = 47)	High (<i>N</i> = 54)
Fear of being evaluated	0.06	0.25	0.22	0.24	0.11	0.11	0.30
Fear of evaluating	0.15	0.27	0.11	0.17	0.18	0.26	0.15
Uncertainty of response	0.33	0.44	0.30	0.43	0.29	0.28	0.43
Other fears	0.13	0.06	0.13	0.13	0.08	0.09	0.13
All anxieties	0.63	1.02	0.76	0.97	0.63	0.74	1.01

^a Highest or lowest tercile of the pretest distribution of trait shyness.

Table 4

Relative Frequencies of Impression-Related Cognitions and Emotions Coded From the Subjects' Free Responses for the Situational Conditions and for Shy Subjects and Subjects Low in Shyness

Coding category	Rank ^a	Situational conditions					Trait shyness ^b	
		Stranger (<i>N</i> = 48)	Acquainted (<i>N</i> = 48)	Friend (<i>N</i> = 46)	Evaluative (<i>N</i> = 70)	Control (<i>N</i> = 72)	Low (<i>N</i> = 47)	High (<i>N</i> = 54)
Positive emotion	5	.08	.08	.02	.10	.03	.09	.02
Interest	4	.17	.35	.37	.36	.24	.47	.13
Neutral	3	.10	.13	.09	.17	.04	.15	.02
Ambivalent	2	.06	.08	.00	.03	.07	.02	.11
Negative emotion	1	.08	.19	.02	.09	.11	.13	.19
All cognitions	—	.50	.83	.48	.74	.49	.85	.46

^a The ranks are a priori assignments to the coding categories.

^b Highest or lowest tercile of the pretest distribution of trait shyness.

tains the relative frequencies of the impression-related cognitions and emotions for the situational conditions and for the subjects high and low in trait shyness.

The hypothesis that the evaluation condition evoked more impression-related cognitions than did the control condition was only marginally confirmed, $t(138) = 1.45$, $p < .08$, one-tailed. An inspection of the means revealed a reversal for the acquainted subjects similar to that found for fear of evaluating ($M = 0.92$, control; $M = 0.75$, evaluation). Exclusion of this group led to a significant confirmation of the hypothesis ($M = 0.27$, control; $M = 0.74$, evaluation), $t(92) = 2.54$, $p < .01$, one-tailed. As expected, I found no significant familiarity effect ($F < 1$) and no significant Familiarity \times Evaluation interaction, $F(2, 138) = 1.58$, $p = .21$, and the shy subjects recalled no more impression-related cognitions than did those low in trait shyness. A marginal trait effect, $t(100) = 1.8$, $p < .08$, even revealed a tendency for shy subjects to recall fewer impression-related thoughts.

The test of the hypothesis of a negative bias of the impression-related cognitions of the shy subjects was conducted exactly parallel to that reported in Asendorpf (1987). The coding categories were rank ordered from positive to negative as indicated in Table 4. A Mann-Whitney U test with continuity correction for these ranks significantly confirmed the hypothesis ($U = 2.63$, $p < .005$, one-tailed). Possible situational effects were tested in the same way. A U test for the evaluation effect and a Kruskal-Wallis test for the familiarity effect did not reveal even marginal differences ($p > .14$ in each case). Thus, the situational differences did not affect the emotional quality of the impression-related cognitions.

Reports of partner's unfamiliarity. Table 5 contains the relative frequencies of the coded reports of the partner's unfamiliarity for the situational conditions and for the subjects high or low in trait shyness. Because friends never reported this category (for obvious reasons), they were excluded from this analysis.

A t test confirmed that shy subjects mentioned the partner's unfamiliarity more often than did the subjects low in trait shyness, $t(65) = 2.1$, $p < .02$, one-tailed. For familiarity, I found an unexpected difference. Acquainted subjects reported more on the partner's unfamiliarity than did strangers, $F(1, 92) = 4.56$, $p < .04$ (see Table 5). I found no tendency for an evaluation

effect or an Evaluation \times Familiarity interaction ($F < 1$ in both cases).

To summarize, all expected differences for the subjects' free responses were significantly confirmed, except for three hypotheses. In two of these cases, a reversal of the hypothesis occurred for the subjects in the acquainted-control condition who unexpectedly reported many fears of evaluating and impression-related cognitions. Also, subjects who had been acquainted with their partner mentioned their partner's unfamiliarity more often than did those meeting a stranger.

Discussion

This study provides clear evidence for the additivity hypothesis for inhibition to strangers and social-evaluative inhibition. In a between-groups design, both types of inhibition were varied independently of each other by confronting subjects with a complete stranger or a good friend, and by comparing the experimental induction of the anticipation of social evaluation with a control situation. Structured self-ratings of fear of being evaluated and subjects' spontaneous reports of emotions obtained during the videoreconstruction of the experimental conditions, as well as structured self-ratings of fear of the partner's unfamiliarity, confirmed that fear of being evaluated and fear of strangers were successfully and independently induced. Self-, partner-, and observer-ratings of state shyness supported the hypothesis that both the unfamiliarity and the evaluation potential of the

Table 5

Relative Frequencies of Reports of Partner's Unfamiliarity for Subjects in the Stranger and Acquaintance Conditions

Stranger (<i>N</i> = 48)	Situational condition				Trait shyness ^a	
	Acquainted (<i>N</i> = 48)	Evaluative (<i>N</i> = 48)	Control (<i>N</i> = 48)	Low (<i>N</i> = 31)	High (<i>N</i> = 36)	
.17	.42	.31	.27	.13	.42	

Note. Friends were excluded from this analysis.

^a Lowest or highest tercile of the pretest distribution of trait shyness.

partner contributed to state shyness independently of each other. An analysis of the subjects' body posture during the dyadic interactions revealed that subjects' posture was more closed when they conversed with a stranger than when they conversed with a friend, but was not related to the anticipation of social evaluation.

All these variables discriminated between subjects high and low in self-rated trait shyness in the expected direction. In addition, subjects high in trait shyness spontaneously reported more negatively biased thoughts about the impression their partner might have gained of them and mentioned the partner's unfamiliarity in a nonpositive emotional context more often than did their nonshy counterparts. I found no interaction between trait shyness and any of these situational effects.

Whereas the comparison between friends and strangers fully supported the additivity hypothesis, the results for the third condition of familiarity were mixed. In this acquainted condition, subjects got to know a stranger in a 10-min game involving some interaction and self-disclosure; immediately afterwards they participated in the main study. As expected, their self-ratings of state shyness and their body posture put them into a middle position between strangers and friends. The results for partner-rated shyness and fear of partner's unfamiliarity were also consistent with this middle position. However, the data of other variables questioned this interpretation.

First, the subjects in the acquainted-control condition spontaneously and unexpectedly reported many cognitions related to their partner's impression of them and fears of having to evaluate him. This can be explained by a transfer effect from the get-to-know game immediately preceding the conversation. Because these subjects had no particular task at hand in this situation, they might have reflected on the preceding game and their self-presentation to the partner during the game.

Second, the subjects in the acquainted-evaluation condition were rated by observers of their videotaped interactions as unexpectedly nonshy, and spontaneously reported unexpectedly few impression-related cognitions and fears of having to evaluate their partner. Again, this can be interpreted as a transfer effect. Because the get-to-know game might already have aroused impression- and evaluation-related thoughts before the conversation, the evaluation induction might have had less of an effect for this group of subjects. Thus, the deviations from expectation that occurred for both groups in the acquainted condition could be explained by transfer effects from the get-to-know game. As this is an a posteriori explanation, it must, of course, be regarded with caution.

Because this study was comparable in many respects with the reanalyses of the study reported in part in Asendorpf (1987, 1988), various findings could be replicated. In both studies, none of the 26 possible interactions between situational variations and self-rated trait shyness was found to be significant. In both studies, a closed body posture appeared to be related to inhibition to strangers, but not to social-evaluative inhibition. In both studies, subjects high in trait shyness spontaneously recalled more fear of being socially evaluated by others, but did not more often report other kinds of fear, including fear of having to evaluate others. They also had more negatively biased thoughts about the impression made on their partner, but did not have more impression-related thoughts in general. In the

evaluative situations of both studies, fear of having to evaluate others appeared to be at least as important for the subjects as fear of being socially evaluated. The finding in the reanalysis that blushing seems to be specifically related to embarrassment accompanying social-evaluative inhibition could not be replicated because the design of the present study made it impossible to record this response.

The results of the present study suggest an intriguing hypothesis concerning people's awareness of fear of strangers. Whereas the data of the study clearly show that the induction of inhibition to strangers was successful, a comparison of the effect size of the familiarity effect for different measures (in terms of *F* scores) generates the following rank order, beginning with the strongest effect (cf. Table 2): closed body posture, self-rated state shyness, partner-rated state shyness, and fear of partner's unfamiliarity. Furthermore, only 2 of the 96 nonfriends spontaneously reported fear of strangers (a rate of .02 per subject), whereas the average rate for fear related to social evaluation in the evaluation condition was .41 (cf. Table 3), which replicates the rate of .45 found for the comparable evaluative situation in Asendorpf (1987). Because the familiarity and the evaluation variations led to comparable effects on state shyness, the subjects appeared to be less aware of fear of strangers than of fears related to social evaluation.

Thus, a discrepancy appears to exist between the emotional experience accompanying inhibition to strangers and social-evaluative inhibition. Both kinds of inhibition involve a comparable inhibitory tendency that interacts with motivational tendencies to approach them; however, the two kinds of inhibition differ in the extent to which they are experienced as fear. From a developmental perspective, this discrepancy is not surprising. If the early form of inhibition to strangers continues to operate through adulthood without interacting with the later developing social-evaluative inhibition (which involves the more sophisticated cognitive processes of taking the perspective of others and reflecting about the impression made on them), people should be less able to verbalize fear of strangers and to attribute it to objects in their environment. It seems as if inhibition to strangers sneaks into adult social interaction beneath the level of awareness.

This interpretation rests on a comparison between self-reported specific fear of strangers (spontaneously recalled or not) on the one hand and self- and partner-ratings of shyness and the body position data on the other hand. As one reviewer of this article suggested, the body position data could be alternatively interpreted as reflecting a social norm for formality in initial encounters, but for casualness in intimate interactions. Even the partner- and observer-ratings of shyness could be interpreted as reflecting this social norm because the partners or observers might have mistakenly perceived subjects' more formal behavior as shy behavior.

This alternative interpretation does not apply to self-rated shyness, however; there still remains an unquestionable discrepancy between a strong familiarity effect for self-rated shyness and a weak or absent familiarity effect for self-reported fear of strangers. Thus, the alternative interpretation of the body position data is not critical for the major conclusions of this study. Furthermore, the inhibition and formality notions are compatible. Social norms often reflect spontaneous emotional behavior

that occurs anyway; often, the norms only modify this behavior to some degree (see Asendorpf, in press-a, for a discussion). It may be very difficult to disentangle the contributions of inhibition to strangers and the norm for formality to adults' behavior in encounters with strangers; studies of young children who have not yet learned the norm for formality may help to settle this question.

The results of this study suggest that in analogy to the concept of a final common pathway in physiology, state shyness can be regarded as the final common pathway of at least two different kinds of inhibitory processes. Although these two kinds of inhibition appear to be distinct processes, they lead to some similarities in terms of felt uneasiness and inhibition and of inhibited behavior. This view makes it explicit that state shyness is not as homogeneous a construct as its use in lay psychology suggests.

Regarding trait shyness, however, the present study clearly supports the view that trait shyness does not interact with the two kinds of inhibition. I found no interaction between trait shyness and the situational differences. As this lack of interaction referred to a comparison of extreme groups and not to the cross-situational consistency of interindividual differences, this finding does not exclude the possibility that two different subtypes of shy people exist: one particularly sensitive to inhibition to strangers and one particularly sensitive to social-evaluative inhibition.

Buss (1986) proposed that these two subgroups may in fact exist and may be discriminable by their self-rated public self-consciousness, that is, the extent to which they become aware of themselves as objects of others' scrutiny. Bruch, Giordano, and Pearl (1986) found that students scoring high on trait shyness and general fearfulness and low on public self-consciousness recalled an earlier onset of their shyness than did those scoring high on shyness and public self-consciousness and low on general fearfulness; they regarded this result as supporting Buss's view. However, the Bruch et al. study rested on retrospective reports and lacked evidence that the two groups of shy students reacted differently in stranger versus social-evaluative situations.

The hypothesis of two distinct subgroups of shy people corresponding to the two kinds of inhibition would be consistent with the results of the present study only if both subgroups were about the same size; if the self-conscious group were larger, for example, a Situation \times Trait interaction would have occurred because of the disproportionately higher state shyness of the subjects high in trait shyness in the evaluation condition. There seems to be no plausible reason why both groups should be equal in size, however.

Alternatively, the hypothesis of two kinds of shyness (Buss, 1986) applies only to state shyness and its development, not to trait shyness. The Bruch et al. (1986) data do not contradict this hypothesis because different developmental routes can lead to the same developmental outcome. This hypothesis is consistent with the model of interindividual differences in inhibition proposed by Gray (1982, 1987; see also Fowles, 1987). According to this model, a behavioral inhibition system mediates inhibitory responses to three different classes of stimuli: novel stimuli, conditioned cues for punishment, and conditioned cues for frustrative nonreward. Interindividual differences in the "strength" of the behavioral inhibition system (its threshold

and intensity of response) would equally affect inhibitory tendencies to such different stimuli as novel environments, strangers, and individual features of people (e.g., their physiognomy) that have become conditioned cues of negative or insufficiently positive social evaluation. If Gray's (1982) model is "cognitively enriched" to encompass the more complex processes of situational evaluation proposed by Schlenker and Leary (1982), this expanded model of inhibition would reconcile the present findings and the self-presentational approach to social anxiety. The final common pathway of different kinds of inhibition, then, would be identical to those aspects of inhibition that are mediated by the behavioral inhibition system; the differences in inhibition found for stranger versus social-evaluative situations would refer to the evaluative processes that activate the behavioral inhibition system.

All in all, then, the results of the present study urge researchers to transcend both the "cognitivist" self-presentational approach to social anxiety of Schlenker and Leary (1982) and the "biologistic" model of inhibition proposed by Gray (1982, 1987), and to reconcile both approaches in a psychobiological model of social inhibition that accounts for the complexity of human social interaction and its development. Such a model could serve as a psychological reconstruction of the lay psychological term *shy*.

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