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Self, Other, and Situation-Referent Automatic Thoughts: Interaction Between People Who Have a Physical Disability and Those Who Do Not[1]

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The nature of facilitatory and inhibitory automatic thoughts concerning interaction between able-bodied college students and students who do and who do not have a physical disability was investigated. Both the valence (positive or negative) and the focus of attention of automatic thoughts (on oneself, on the other person, or on the situation) were studied. Thought listings of 115 able-bodied college students concerning interaction with able-bodied students and with those who have a physical disability were coded as positive or negative and as self-, other, or situation-referent. Comfort interacting and self-efficacy beliefs were also assessed. Results indicate that valence and focus of attention are discrete elements that have differential impact on comfort interacting and self-efficacy beliefs. The situational demands of interaction with able-bodied people and with individuals with a physical disability were shown to have a marked impact not only on comfort but also on the patterning of thoughts generated. The findings illustrate the importance of assessing the effects of differing situational demands on automatic thoughts and highlight the need for both a more sophisticated typology for the coding of cognitions as well as for an empirical approach to classifying thoughts as positive or negative. The implications of the findings for the design of

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cognitive interventions inteneded to make individuals more comfortable interacting with people who have a physical disability are discussed.

KEY WORDS: automatic thoughts; self-statements; disability; social anxiety; interaction.

Casual interaction between strangers who have a physical disability and those who do not has been shown to be fraught with difficulties. The literature indicates that many able-bodied people hold negative attitudes toward those with physical disabilities (Jackman, 1983; Yuker & Block, 1979) and avoid contact with them if possible (Eberly, Eberly, & Wright, 1981). Avoidance seems to be motivated, in part, by incorrect assumptions and attributions concerning persons with a disability (Fichten & Amsel, 1986; Fichten, Compton, & Amsel, 1985; Robillard & Fichten, 1983; Siller, 1976) and by social anxiety on the part of both the able-bodied (Kleck, 1968, Snyder, Kleck, Strenta, & Mentzer, 1979) and those with a disability (Comer & Piliavin, 1972).

When interaction does take place, the literature shows that both groups of people may behave in an atypical manner. For example, when interacting with a stranger with a disability, able-bodied people have been found to behave in a more inhibited and overcontrolled manner, to terminate interaction sooner, and to show less variability in their behavior than when interacting with an able-bodied person (Kleck, 1968; Kleck, Ono, & Hastorf, 1966). Similarly, people with a disability, when interacting with an able-bodied stranger, have been shown to terminate the interaction sooner, to smile and engage in eye contact less often (Comer & Piliavin, 1972), and to perceive the other's behavior toward them as influenced by their disability (Kleck & Strenta, 1980).

Inadequate social behavior can be caused by lack of knowledge about what to say or do (skill deficit model; McFall & Twentyman, 1973) or by failure to enact the appropriate behavior in spite of knowledge about what constitutes adequate behavior (response inhibition model; Schwartz & Gottman, 1976).

Two previous studies (Fichten & Bourdon, 1986a) investigated whether the skill deficit model could account for interaction strain by studying knowledge of appropriate interpersonal behavior between people who do and those who do not have a physical disability. In one study, 24 wheelchair-using and 31 able-bodied college and university students who had contact with people with physical disabilities completed a questionnaire in which they rated the frequency of various social interaction situations on campus as well as the appropriateness of different behaviors in each situation by both wheelchair-using and able-bodied students. In the second study, 73 able-bodied college students were presented with the 11 most frequent interaction situations and were asked, for each, "In this situation, what would you say or do?" Subjects' responses were coded in accordance with Fichten and Bourdon's (1986b) scoring manual, which is based on findings from the first study. In these studies, it was found that (a) both the able-bodied and those with a physical disability know the nature of appropriate behavior by each group in frequently occurring interaction situations, and (b) able-bodied people know as much about appropriate behaviors with people with a disability as they do about appropriate behaviors with able-bodied individuals. The findings suggest that lack of knowledge about what constitutes effective behavior is not the principal cause of social strain, and that the skill deficit model alone cannot account for problematic social interaction and avoidance of people with a disability.

The response inhibition model of poor social performance proposes that people, despite knowing what to say or do, fail to perform the appropriate behavior. Appropriate responding can be inhibited by a variety of factors, including social anxiety and expectancy of negative consequences. Contributors to social anxiety include faulty appraisals of one's own performance and abilities, inaccurate evaluations of the other person's feelings and intentions, and inhibitory automatic thoughts (Curran & Wessberg, 1981).

Although the two studies noted above showed that able-bodied people know the right thing to say or do when interacting with a person with a disability, the results also suggested that self-consciousness and social anxiety are likely contributors to interaction difficulties. Each group was found to be its own worst critic: Wheelchair-using participants evaluated behaviors by wheelchair users more negatively than did able-bodied subjects, and able-bodied participants evaluated behaviors by the able-bodied more harshly. These results suggest that worry about what the "other person" thinks and about the adequacy of one's own behavior contributes to problematic interaction.

Cognitive variables such as automatic thoughts and self-statements probably play a central role in influencing interaction between people who have a physical disability and those who do not. Although there appear to be no data bearing on this issue, in other areas it has been shown that self-referent thoughts, both positive and negative, affect social anxiety and behavioral enactment (cf. Cacioppo, Glass, & Merluzzi, 1979; Halford & Foddy, 1982).

The systematic assessment of cognitions concerning dyadic interaction is relatively new (Fichten, 1984). Most studies have focused on heterosocial dating anxiety and little is known about the effects of different situational demands on thoughts concerning various types of nonheterosocial interaction. The role of valence (i.e., the relative contribution of positive and negative thoughts) is also poorly understood. For example, there is not even consen-

sus about the contribution of positive and of negative thoughts to anxiety and performance: Some studies have found that negative thoughts are more important than positive ones (e.g., Cacioppo et al., 1979), some have found the reverse (e.g., Hollandsworth, Glazeski, Kirkland, Jones, & Van Norman, 1979), and some have found both to be important (e.g., Galassi, Frierson, & Sharer, 1981). In addition, insufficient attention has been pain to the focus of attention of automatic thoughts (i.e., self-referent, other-referent, and situation-referent thoughts), even though the findings of Merluzzi, Cacioppo, and Glass (cited in Arnkoff & Glass, 1982) provide preliminary evidence suggesting that this is an important dimension.

It is one of the objectives of the present investigation to assess the extent to which positive and negative thoughts are related and to determine their relative contribution to social anxiety, comfort during interaction, and expectations that one can perform competently (self-efficacy beliefs). A similar evaluation is appropriate for self-referent thoughts (e.g., "I just can't go through with this"), other-referent thoughts (e.g., "He's a nice guy"), and situation-referent thoughts (e.g., "The job will never get done if we work together"). Since self-efficacy beliefs have been shown to be related to behavioral enactment (Bandura, 1982), the relationship between automatic thoughts and the belief that one is capable of interacting comfortably was also investigated.

The second objective is to compare thoughts concerning interaction with persons with and without a physical disability. This comparison serves two purposes. First, it provides information on the nature of the cognitions that facilitate or hamper interaction with persons with a physical disability. Second, because the nature of the interaction task is manipulated, the comparison permits evaluation of the effects of differing situational demands on the various types of cognitions assessed.

METHOD

Subjects

Subjects were 115 1st- and 2nd-year college student volunteers, 50 males and 65 females. Students were enrolled in four sections of General Psychology and four sections of Abnormal Psychology. Mean age for both males and females was 18 years. None had a physical disability.

Measures

General Information Form. This measure included questions about gender, age, absence or presence of physical disability, and previous contact with people who have a physical disability (relative, friend, acquaintance, volunteer experience). Ease with able-bodied students and with students who have a physical disability was assessed using 6-point scales.

Social Avoidance and Distress Scale (SAD). The research has shown reasonable reliability and validity for this social anxiety scale (Watson & Friend, 1969; cf. Arkowitz, 1981). The higher the score, the greater the social anxiety.

Attitudes Toward Disabled Persons Scale (ATDP)-Form O. This standardized measure (Yuker, Block, & Younng, 1970) consists of 30 Likert-type items and assesses the degree to which people see the adjustment and needs of people with a physical disability as different from those of able-bodied people. Data provided by Yuker et al. indicate reasonable reliability and validity. The single summary score is usually interpreted as a measure of acceptance-rejection of people with a physical disability (the higher, the more accepting).

Cognitive Role-Taking Tasks (Versions A and D). This measure was developed for the present investigation in order to collect automatic thoughts. It consists of brief descriptions of 11 frequently occurring social situations[3] between wheelchair-using and able-bodied college students (Fichten & Bourdon, 1986a, 1986b). Subjects are asked to imagine that they are involved in each situation and to list, in written form, their automatic thoughts and feelings. Different versions of the questionnaire permit subjects to respond in terms of interaction with a wheelchair user (Version D) or with an able-bodied (Version A) male or female college student. Thoughts are coded in accordance with Fichten and Martos's (1986) Cognition Coding Manual into seven categories: positive or negative and either self-referent, other-referent

[3]Examples of situations on the Cognitive Role-Taking Tasks (Versions A and D).

1. You and a group of students are talking about dates, sex and sports when a (male/female) classmate (in a wheelchair) arrives.
2. You and some classmates are planning to go out drinking to celebrate the end of exams. Everyone is talking about which bar to go to when a (male/female) classmate (in a wheelchair) arrives.
3. You are sitting with some friends in the cafeteria. A (male/female) student (in a wheelchair) whom you don't know well comes and joins the group. You are introduced and shortly thereafter everyone else leaves.
4. You and a (male/female) classmate (in a wheelchair) have been assigned to work together on a project. The project requires field work and background research. The two of you have to arrange how to get the project done.

or situation-referent. When a thought does not fit one of the 6 codes above, it is coded neutral. The six nonneutral categories are based on 16 different codes.[4]

Comfort and Self-Efficacy Interacting Scales. This two item measure asks subjects to indicate how comfortable they would feel during interaction (on a 6-point scale) and how confident they are of this (10-very uncertain, 100-certain). These two items were completed after each of the 11 situation questions on the Cognitive Role-Taking Tasks. Comfort interacting score is the mean of respondents' ratings for all 11 situations. Self-efficacy interacting is a self-efficacy strength score based on confidence ratings and follows Bandura's (1977) scoring system (for all situations with a comfort interacting score ≥ 4, subjects' confidence scores are summed and divided by 11). This self-efficacy strength score measures confidence in being able to interact comfortably.

Procedure

Subjects were randomly assigned to one of the two experimental conditions. All completed the General Information Form, SAD, Cognitive Role-Taking Tasks, and Comfort and Self-Efficacy Interacting Scales. Subjects in the able-bodied condition completed the Cognitive Role-Taking Tasks with reference to interaction with a same-sex able-bodied student; those in the disabled condition completed it with reference to interaction with a same-sex wheelchair-using student. Subjects in the disabled condition also completed the ATDP.

[4]Cognition Coding Manual: examples of codes and categories.

Self-referent Positive: positive consequences for the self (e.g., Maybe we'll become friends), positive affect (e.g., I'm glad to do this), knowing what to say or do (e.g., I'll say hello and . . .), thoughts making one more comfortable (e.g., It's OK to ask).

Self-referent Negative: negative consequences for the self (e.g., I may have to do his share), negative affect (e.g., I feel so uptight), not knowing what to say or do (e.g., Should I ask or not), thoughts making one more uncomfortable (e.g., I really should be careful what I say), wanting to avoid the other (e.g., I should pretend I didn't see her).

Other-referent Positive: positive consequences for the other (e.g., She'll have a ball), other is OK (e.g., He seems like a nice person).

Other-referent Negative: negative consequences for the other (e.g., He may get upset), other is not OK (e.g., She must be so embarrassed), other is not OK implied but not stated (e.g., I'm glad it's him and not me who is . . .).

Situation Positive: (e.g., We can arrange it so that it's convenient for both of us).

Situation Negative: (e.g., We probably have nothing in common).

RESULTS

Contact and Ease

Subjects who indicated that they had at least one close relative, friend, or acquaintance who has a physical disability and those who have worked as volunteers with people who have a disability were designated as having had previous contact. Fifty-five percent of females and 52% of males fell in this category. A three-way (2 × 2 between × 2 within groups) analysis of variance (ANOVA) comparison [2(Male/Female) × 2(Contact Yes/No) × 2(Ease with Disabled/Nondisabled)] shows that subjects, both males and females, are more at ease with nondisabled students ($M = 5.08$) than with students who have a disability ($M = 3.86$), $F(1, 46) = 15.26$, $p < .001$. Although there was a tendency for subjects who had previous contact with people with disabilities, relative to those who did not, to be somewhat more at ease with students who have a disability, this interaction was only marginally significant, $F(1, 46) = 2.64$, $p < .10$. Given these findings and the contradictory data in the literature (cf. Anthony, 1972; English, 1971; Fichten, Hines & Amsel, 1985), the contact variable was dropped from all other analyses in order to simplify interpretation of the results.

Thoughts

Thoughts on 20 protocols (10 in the able-bodied and 10 in the disabled conditions) were coded by the two authors of the coding manual into the seven categories. During this time an average of 83% thought-by-thought interrater agreement (Bell-Dolan, 1985; O'Leary & Kent, 1973) was attained. The reliability of each of the seven codes in each experimental condition were also evaluated: Interrater agreements range from 66% to 92%. All of the remaining protocols were coded by one of the coders; an additional 10% were coded by the second coder on a random spot-check basis. None of these fell below the predetermined 70% thought-by thought interrater agreement criterion. There was periodic consultation between the two coders in order to clarify codes and to serve as "booster sessions." Since interrater agreements were generally high, data from one coder were used in the analyses.

A preliminary 2 × 2 between × 3 × 2 within ANOVA comparison [2(Male/Female) × 2(Disabled/Able-bodied) × 3(Self/Other/Situation) × 2(Positive/Negative)] that included all thought categories was carried out. Means for this analysis are shown in Table 1.

Results indicate that more positive than negative thoughts were listed, $F(1, 94) = 18.65$, $p < .001$, and that more thoughts were listed in the disabled

Table I. Mean Number of Cognitions[a]

	Positive		Negative	
	Disabled	Able-bodied	Disabled	Able-bodied
Self-referent	9.52	8.27	5.92	4.21
	(6.00)	(4.26)	(4.60)	(2.77)
Other-referent	1.29	.59	2.60	.97
	(2.16)	(1.12)	(2.77)	(1.60)
Situation-referent	.56	.66	.15	.21
	(1.18)	(.87)	(.44)	(.64)

[a]Numbers represent the mean number of thoughts listed for the 11 situations of the Cognitive Role-Taking Tasks by males and females. Numbers in brackets are standard deviations.

than in the able-bodied condition, $F(1, 94) = 10.37$, $p < .01$. The Self/Other/Situation main effect, $F(2, 88) = 347.80$, $p < .001$, and the Self/Other/Situation × Disabled/Able-bodied interaction, $F(2, 188) = 4.93$, $p < .01$, were also significant. The Tukey h.s.d. test shows that in the able-bodied condition, significantly more self-referent thoughts were listed than either other-referent or situation-referent ones ($p < .01$), which did not differ significantly. In the disabled condition, not only were significantly more self-referent than other-referent thoughts listed but both of these were more frequent than situation-referent thoughts ($p < .01$). The Self/Other/Situation × Positive/Negative interaction was also significant, $F(2, 188) = 37.15$, $p < .001$. Self-referent positive thoughts were significantly more frequent than self-referent negative thoughts, which in turn were more frequent than other-referent negative thoughts ($p < .01$). Other-referent negative thoughts were listed more often than other-referent positive ones ($p < .01$). Other and situation-referent positive and situation-referent negative thoughts occurred with equal frequency.

Although the Disabled/Able-bodied × Positive/Negative interaction was not significant, differences between the disabled and able-bodied conditions in the frequency of positive as well as of negative thoughts were predicted. In two preplanned comparisons it was found that whereas the number of positive thoughts listed in the able-bodied and disabled conditions did not differ, significantly more negative thoughts were listed in the disabled than in the able-bodied condition, $t(96) = 3.15$, $p < .01$.

The preliminary ANOVA comparison also revealed large differences in the variability of self, other, and situation-referent thoughts; this obscured differences within different categories of thoughts. Therefore, scores were subjected to a square-root transformation and each of these variables was analyzed in separate 2 between × 2 within groups (2 Disabled/Able-bodied × 2 Positive/Negative) ANOVA comparisons in order to examine specific predictions in each thought category.

Self-Referent Thoughts. As the means in Table I indicate, more self-referent thoughts were listed in the disabled than in the able-bodied condition, $F(1, 96) = 4.29$, $p < .05$. In addition, although more positive than negative thoughts were listed, $F(1, 96) = 34.16$, $p = .001$, the Disabled/Able-bodied × Positive/Negative interaction was not significant. Thus, the prediction that fewer self-referent positive thoughts and more negative ones would be listed in the disabled condition is not supported by the data.

Other-Referent Thoughts. More thoughts about the other person were listed in the disabled than in the able-bodied condition, $F(1, 96) = 15.20$, $p < .001$; this is consistent with the findings on self-referent thoughts. The Positive/Negative main effect, $F(1, 96) = 15.59$, $p < .001$, and Positive/Negative × Disabled/Able-bodied interaction, $F(1, 96) = 3.81$, $p < .05$, indicate that more negative than positive thoughts about the other person were listed; this was especially true in the disabled condition ($p < .01$).

Situation-Referent Thoughts. On situation-referent thoughts, only a Positive/Negative main effect was found, $F(1, 96) = 15.31$, $p < .001$, indicating that more positive than negative thoughts about the situation were listed.

Comfort Interacting and Self-Efficacy Beliefs

These variables were analyzed using 2 × 2 between-groups ANOVA comparisons (2 Male/Female × 2 Disabled/Able-bodied). Results show lower levels of comfort interacting in the disabled ($M = 4.02$) than in the able-bodied condition ($M = 4.72$), $F(1, 94) = 15.14$, $p < .001$. Subjects in the disabled condition also had lower self-efficacy expectations that they would interact comfortably ($M = 54.22$) than those in the able-bodied condition ($M = 70.21$), $F(1, 94) = 10.32$, $p < .01$.

Relationships Among Variables

Positive and Negative Self, Other, and Situation-Referent Thoughts. To assess the relationships among various types of positive and negative thoughts, comfort interacting, and self-efficacy beliefs, Pearon product-moment correlation coefficients were computed separately for the disabled and able-bodied conditions; r values are presented in Table II. In addition, stepwise multiple regression analyses were carried out to predict interaction comfort as a function of the various positive and negative thoughts.

Table II shows that the relationship between comfort interacting and the various types of positive and negative thoughts are different in the able-bodied and disabled conditions. This is also shown by the two stepwise multi-

Table II. Relationships Among Thoughts, Comfort Interacting and Self-Efficacy Beliefs[a]

	Positive thoughts			Negative thoughts			Comfort interacting	Self-efficacy beliefs
	Self	Other	Situation	Self	Other	Situation		
Positive								
Self				−.535[d]	−.342[c]		.475[d]	.443[d]
Other				−.312[b]			.289[b]	.282[b]
Situation								
Negative								
Self	−.723[d]						−.353[c]	−.404[c]
Other	−.340[c]	.313[b]					−.448[d]	−.305[b]
Situation	−.309[b]							
Comfort interacting	.653[d]			−.524[d]	−.343[c]	−.349[c]		.953[d]
Self-efficacy	.649[d]			−.558[d]	−.363[c]	−.345[c]	.950[d]	

[a]Pearson *r* values. Disabled condition above the diagonal (*n* ranges from 38 to 51), able-bodied condition below (*n* ranges from 44 to 47). Cells without values indicate nonsignificant *r* values.
[b]$p < .05$.
[c]$p < .01$.
[d]$p < .001$.

ple regression analyses. In the able-bodied condition, the univariate relationship between comfort interacting and self-referent positive thoughts is the strongest and accounts for 43% of the variation in comfort interacting, $F(1, 45) = 33.53$, $p < .01$. Addition of the five other variables increased the amount of variance accounted for to 51%, $F(6, 40) = 6.86$, $p < .01$. Although the addition of the other variables added little to the variation accounted for by the regression, it should be noted that self-referent negative thoughts, which are highly related to self-referent positive ones, are also strongly related (negatively) to comfort interacting.

In the disabled condition the univariate relationship between self-referent positive thoughts and comfort interacting is still the strongest; however, this accounts for only 23% of the total variation. The addition of variables to the regression equation has a greater effect in the disabled than in the able-bodied condition, with one of the partial correlation F tests, that on negative thoughts about the other person, attaining significance, $F(1, 48) = 6.50$, $p < .01$. With all variables in the regression equation, 40% of the variation is accounted for, 37% of this by the effects of self-referent positive, other-referent negative, and self-referent negative thoughts.

Total Thoughts and Other Measures. To assess the relationship between positive and negative thoughts and other variables, total positive thoughts, total negative thoughts, comfort interacting, self-efficacy beliefs, SAD, ATDP, and ease with students with a disability and with no disability scores were related; this was done separately in the disabled and able-bodied conditions. Pearson *r* values are presented in Table III. In addition, two stepwise multiple regression analyses were carried out to predict comfort interacting as a function of the other variables.

As in the previous regression analyses, the variables that best predict variability in comfort interacting scores are somewhat different in the able-bodied and in the disabled conditions. In the able-bodied condition, total positive thoughts accounted for 30% of the variability in comfort interacting, $F(1, 41) = 17.51$, $p < .01$. Addition of SAD and of total negative thoughts increased the amount of variance accounted for to 44%, $F(3, 39) = 10.19$, $p < .01$. In the disabled condition the univariate relationship between total positive thoughts and comfort interacting is also the strongest and also accounts for 30% of the variability. In this regression, however, the only additional variable that made a significant contribution was total negative thoughts, $F(2, 44) = 15.41$, $p < .01$; the two variables accounted for 41% of the variability. In the disabled condition, SAD scores did not contribute significantly to the regression equation; similarly, ATDP scores, also entered into the analysis, did not contribute significantly.

Table III. Relationships Between Total Thoughts and Other Measures[a]

	Total thoughts		Comfort interacting	Self-efficacy beliefs	SAD	ATDP	Ease with disabled	Ease with non disabled
	Positive	Negative						
Total positive			.544[f]	.512[e]			.394[e]	
Total negative			−.373[e]	−.267[d]				
Comfort interacting	.547[f]	−.332[e]		.953[f]			.619[f]	.263[d]
Self-efficacy	.568[f]	−.349[e]	.950[f]				.645[f]	.299[d]
SAD			−.206[c]	−.185[c]				−.452[f]
ATDP[b]	N/A	N/A	N/A	N/A	N/A		.251[c]	
Ease with disabled[b]	N/A	N/A	N/A	N/A	N/A	N/A		.321[d]

[a]Pearson *r* values. Disabled condition above the diagonal (*n* ranges from 38 to 51), able-bodied condition below (*n* ranges from 44 to 47).
[b]Data not available for able-bodied condition.
[c]$p < .10$.
[d]$p < .05$.
[e]$p < .01$.
[f]$p < .001$.

DISCUSSION

The results show that both the valence (positive or negative) and the focus of attention of thoughts (on the self, on the other person, on the situation) are important discrete cognitive elements that have differential impact on comfort interacting as well as on self-efficacy beliefs. The results also show that the situational demands of interaction with able-bodied people or with individuals with a physical disability have marked impact on the types of thoughts generated.

Valence and Focus of Attention

Positive thoughts about interaction, especially self-referent ones, were shown to be more influential than other types of cognitions: (a) More self-referent positive thoughts than any other types of thoughts were listed; (b) only self-referent positive thoughts were found to be significantly related to all three types of negative thoughts; and (c) positive thoughts, especially self-referent ones, were found to be the most important contributors to comfort interacting and to self-efficacy beliefs.

These results are in marked contrast to the conclusions noted in Arnkoff and Glass's (1982) review of the literature that "positive, facilitative thoughts may be less important than the presence of negative self-statements" (p. 11). Although one could always invoke "methodological differences" to explain the inconsistency, the contradictory findings are probably due to a more fundamental problem: lack of adequate definitions and an absence of consensus concerning the nature of positive and negative thoughts. The lack of consensus is even reflected in the terminology used to designate positive–negative dichotomies: inhibitive versus facilitatory, negative versus coping, irrational versus rational, unrealistic versus realistic, and task-irrelevant versus task-relevant (Arnkoff & Glass, 1982, p. 10).

The issue of inadequate definition of what constitutes positive or negative thoughts underlies the consensus problem and is perhaps even more important. Most investigators have categorized cognitions as positive or negative on the basis of a priori assumptions based on theoretical approach, common sense, and idiosyncratic conceptualizations of the nature of thoughts that help people to cope with particular tasks or prevent them from doing so. The determination of which types of cognitions are positive and which negative should ultimately be made on less capricious grounds, that is, on the basis of empirical data.

In order to better understand the role of different types of cognitions in mediating anxiety and performance, a more sophisticated typology of automatic thoughts will have to be developed. In the present investigation,

three types of positive and three types of negative thoughts were reported. Even these six categories, however, were based on 16 individual codes. Galassi, Frierson, and Sharer (1984) also reported dichotomous categorization based on several cognition codes. Until a generally accepted typology of cognition codes is developed, investigators should be encouraged to report the codes used in their studies to derive summary positive and negative categories. The reactivity of thoughts to differing situational demands should also be considered. Perhaps different typologies will have to be developed for different situations. The thoughts that make one more comfortable and those that facilitate adequate performance may not only be found to differ but can also vary as a function of the nature of the situation (e.g., test performance, public speaking, social interaction, approach of a feared stimulus). The effects of different sequences of automatic thoughts and of the meaning and salience of particular thoughts to specific individuals also need further investigation.

The present findings support the contention of Arnkoff and Glass (1982) that focus of attention is an important variable and highlight the need for assessment of different types of automatic thoughts. For example, as in attributions about the causes of behavior (Fichten, 1984), self-referent thoughts, both positive and negative, were found to be more frequent than thoughts about the other person or about the interaction situation. Furthermore, self-referent positive and negative thoughts were strongly and negatively related. There were, however, no significant relationships found between the various types of positive thoughts (i.e., self-referent, other referent, and situation-referent) or between the different types of negative thoughts. In addition, results on other-referent thoughts were markedly different from those on self-referent ones.

It appears that other-referent thoughts are more reactive than self-referent ones to situational demands and that, depending on the nature of the situation, negative thoughts about the other person can assume major importance in contributing to anxiety and discomfort. For example, the results showed marked differences in the frequencies of other-referent thoughts concerning interaction with a person who has a disability and with an able-bodied person. In addition, in the disabled, but not in the able-bodied condition, negative thoughts about the other person made a substantial contribution to lack of comfort with interaction. These findings highlight the need to evaluate the focus of attention of automatic thoughts and underscore the need to consider the effects on cognitions of differing situational demands.

Differences Between the Disabled and Able-Bodied Conditions

It should be noted that the present study investigated thoughts about imagined casual interaction between strangers and thus is not representative

of interaction in all types of social situations. Nevertheless, since intimacy and friendship must begin somewhere and since most daily interactions are with acquaintances and strangers, the findings of this study are of broad applicability. The results indicate that in casual social encounters with individuals whom one does not know well, (a) interaction with people with a physical disability is more anxiety-provoking than interaction with able-bodied people, (b) self-efficacy beliefs concerning interaction are weaker for interaction with persons with a physical disability than with able-bodied people, (c) contact, per se, with people who have a disability is not likely to make people more comfortable with others who have a disability, and (d) although there were no differences in the number of positive thoughts, more negative thoughts, especially about the other person, were listed concerning interaction with people with a physical disability than with able-bodied individuals.

As noted earlier, the pattern of findings on valence and focus of attention for interaction with people who have a physical disability and those who do not also were different. For example, in the disabled condition, more other-referent than situation-referent thoughts were listed; this was not so in the able-bodied condition. Furthermore, more negative thoughts about the other person were listed in the disabled than in the able-bodied condition.

An interesting difference found between the disabled and able-bodied conditions concerns negative thoughts about the other person. In the able-bodied condition, the number of positive and negative thoughts listed were positively correlated, almost as if the tendency to have thoughts about the other person were an idiosyncratic characteristic of the individual. This was not the case, however, in the disabled condition; here it was found that the more negative thoughts one has about the other person, the fewer positive thoughts one has about oneself. Although it is tempting to suggest that negative thoughts about the person with a disability causes fewer self-referent positive thoughts, this is premature given the design of the present study. Empirical evaluation of this question is currently in progress.

The factors that contribute to comfort interacting with an able-bodied person are somewhat different from those that influence comfort with an individual who has a physical disability. In the able-bodied condition, comfort interacting was found to be related most importantly to positive thoughts about oneself; while other focus of attention variables, especially negative ones, also made significant contributions, these were quite small. In the disabled condition, positive thoughts about oneself were still the most important. However, two additional important predictor variables were found: negative other-referent and negative self-referent thoughts. Indeed, while in the able-bodied condition the second most important contributor to comfort interacting was SAD score, which reflects traitlike social anxiety, in the disabled condition negative thoughts were second in importance, with SAD scores making no significant contribution. In interaction with a person who has a disability, negative thoughts both about oneself and the other person seem to make

important independent contributions to lack of comfort interacting as well as to weakened self-efficacy expectations.

Differences found in the pattern of thoughts concerning interaction with people who have a physical disability and those who do not highlight the reactivity of automatic thoughts to situational demands. Although positive thoughts about oneself were characteristic of interaction in both the able-bodied and the disabled conditions, negative thoughts, both about oneself and about the other person, were characteristic of interaction only in the disabled condition. These results indicate that when thoughts concerning interaction are evaluated, it should not be assumed that all situations are equivalent. Situations such as interaction with specific categories of people (e.g., one's boss or one's professor) may well engender important negative thoughts about the other person. In cognitive intervention programs designed to make people more comfortable with specific groups of people, including individuals with physical disabilities, other-referent thoughts should be carefully evaluated and possibly targeted for modification.

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