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College Students Who Have a Physical Disability and Their Nondisabled Peers

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The authors conducted two studies on thoughts concerning interaction between nondisabled students and their peers with physical disabilities. The first provided psychometric data on the College Interaction Self-Statement Test (CISST), an inventory that includes both valence and focus of attention dimensions. The second compared the thoughts of nondisabled students and those with disabilities concerning interaction with each other. Results show that both groups of students have similar thoughts when thinking about interaction with nondisabled peers. Nondisabled students, however, have more negative thoughts, especially about the other person, when thinking about interaction with individuals who have a disability. The implications of the results for theory, research, and practice are discussed.

Casual interaction between college students who have a physical disability and their nondisabled acquaintances and classmates is characterized by anxiety on the part of nondisabled students (Marinelli & Kelz, 1973; Robillard & Fichten, 1983). Although one would assume that social skill deficits are likely contributors to such anxiety (Curran, 1979), data indicate that nondisabled students know the right thing to say or do in casual interaction with disabled strangers and acquaintances. Results also suggest, however, that cognitive factors such as negative self-evaluation and self-consciousness are likely contributors to interaction problems (Fichten & Bourdon, 1986).

Thoughts about interaction have been shown to affect social anxiety and behavioral enactment in a variety of contexts (cf. Schwartz & Garamoni, 1986). Recently, cognitive factors have also been shown to be important in influencing interaction between nondisabled people and

those who have a physical disability (Fichten, 1986; Fichten, Bourdon, Amsel, & Fox, 1987).

The social cognition literature suggests that both the valence of thoughts (positive/negative) as well as their focus of attention (on the self/on others/on the situation) are important determinants of social perception, causal attribution, anxiety, and behavior in social contexts (cf. Arkin & Duval, 1975; Buss, 1980; Fiske & Taylor, 1984). In the cognitive assessment and therapy literatures, the importance of the valence of thoughts has been heavily investigated; the focus of attention factor, however, has been sadly neglected (cf. Arnkoff & Glass, 1982). It is only very recently that investigators have explored the role of the focus of attention variable (Fichten, 1986; Hope, Heimberg, Zollo, Nyman, & O'Brien, 1986).

In one of these studies, thoughts listed by nondisabled students concerning interaction with nondisabled and with physically disabled peers were compared (Fichten, 1986). Thoughts were coded both for valence (positive/negative) and focus of attention (on the self/on the other person/on the situation). The results showed that more self-referent than other-referent thoughts were indicated and that, as in the attribution literature (Fichten, 1984), thoughts concerning the situation were least frequent. In addition, 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 who have a physical disability. Furthermore, the absence of positive thoughts about oneself and the presence of negative thoughts about the other person were closely related to lack of ease with people who have a disability. These results suggest that cognitive factors are important contributors to interaction difficulties between people who have a disability and their nondisabled peers. The results also suggest that thoughts, especially negative thoughts about the other person, probably should be addressed in programs that attempt to foster problem-free interaction.

An easy to use, reliable, and valid measure of thoughts is needed both to assess dysfunctional cognitions as well as to evaluate the effects of various intervention efforts. The convenience of an inventory, when compared with the alternative of identifying and coding thoughts that are collected in an open-ended manner, is obvious. An inventory of self-statements concerning interaction between nondisabled students and those with disabilities could be used profitably in both research and program development endeavors. For example, the measure could be administered at various times in the context of "sensitization" or attitude change programs to evaluate the effectiveness of the intervention and to explore the mediational links between cognitive, affective, and behavioral events.

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A frequently used inventory of self-statements is Glass, Merluzzi, Biever, and Larsen's (1982) Social Interaction Self-Statement Test (SISST). It would be tempting to simply use this existing instrument to evaluate thoughts of nondisabled individuals concerning interaction with disabled peers. The items on this measure, however, are heavily oriented toward dating, and the scale does not evaluate whether the focus of attention of thoughts is on the self or on the other person, even though the focus of attention dimension may be particularly important when thoughts about specific categories of people, such as those with physical disabilities, are evaluated.

Therefore, we developed the College Interaction Self-Statement Test (CISST), an inventory measure of thoughts concerning "typical college interactions" between nondisabled students and both their nondisabled and disabled peers. The instrument is intended to evaluate thoughts concerning interaction with a same-sex or an opposite sex individual who is either nondisabled or has a physical disability. Furthermore, the measure examines not only the valence (positive/negative) of thoughts but also their focus of attention (on the self/on the other person). The items that make up the measure are based on frequently occurring thoughts, listed in an open-ended manner, concerning various college interaction contexts in Fichten's (1986) investigation of nondisabled college students. It was the objective of Study 1 to provide reliability and validity data on the CISST; Study 2 provides additional validity data and compares the thoughts of nondisabled, visually impaired, and wheelchair user students concerning interactions with each other.

STUDY 1

METHOD

Participants

Participants were 115 college students in Montreal, 60 men and 55 women. All were enrolled in psychology courses and were participating in the study as part of a class laboratory exercise. The mean age for both men and women was 18 years. None had a physical disability.

Measures

General Information Form. Questions were asked about sex, age, and absence or presence of a physical disability. Ease with nondisabled students and with students who have a physical disability was assessed using 6-point scales, with high scores denoting greater ease.

Social Avoidance and Distress Scale (SAD). The SAD, developed by Watson & Friend (1969), is a 28-item true-false questionnaire that mea-

sures anxiety or distress experienced in a variety of social situations. It is one of the most frequently used measures of social anxiety (Arkowitz, 1981). The higher the score, the greater the social anxiety.

Fear of Negative Evaluation Scale (FNE). This widely used scale, also developed by Watson & Friend (1969), measures concerns about being evaluated negatively in interpersonal situations. The higher the score, the greater the fear of negative evaluation.

College Interaction Self-Statement Test (CISST). This 40-item inventory measure of thoughts about interaction with nondisabled and with physically disabled college students was developed for this investigation. The measure has two dimensions: focus of attention (on the self/on the other person) and valence (positive/negative). A brief description of a hypothetical interaction situation between same or opposite sex students in the college context is provided. Respondents are asked to imagine that they are involved in the interaction and to indicate on a 6-point scale how comfortable they would feel in such a situation. Respondents then rate on a 5-point scale how often they would have each of 40 thoughts, with 10 thoughts listed in each of the following categories: positive thoughts about oneself (e.g., "I enjoy meeting new people"), negative thoughts about oneself (e.g., "I'd better be careful how I say things"), positive thoughts about the other person (e.g., "he or she looks friendly"), and negative thoughts about the other person (e.g., "I don't think he or she can have many friends"). The instrument is available from the first author upon request.

We selected the hypothetical interaction task from common interaction situations in the college context (Fichten 1986; Fichten & Bourdon, 1986); the task we chose for the CISST represents a moderately difficult interaction task with both nondisabled and wheelchair user students (Fichten & Martos, 1986). The wording of this interaction was:

Imagine that you are sitting with some friends in the cafeteria. A male or 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. You have 15 minutes before class. Try to imagine that you are actually in the scene.

Item content of the CISST is based on thoughts that were listed frequently by nondisabled college students concerning interaction with nondisabled and with wheelchair user peers (cf. Fichten, 1986). The CISST yields five scores: a Comfort Interacting score (6-point scale) and four thought frequency scores that are based on the summed ratings for the 10 items contained in each of the following scales: Self-Referent Positive, Self-Referent Negative, Other-Referent Positive, and Other-Referent Negative. The maximum score for each of these subscales is 50.

Social Interaction Self-Statement Test (SISST). This 30-item self-statement measure was developed by Glass et al. (1982). It asks re-

spondents to indicate on 5-point scales how often they have each of 15 positive and 15 negative thoughts about interaction with a specific person. Frequently used, the SISST provides useful information concerning a variety of topics when used with actual or hypothetical interaction tasks (e.g., Beidel, Turner, & Dancu, 1985; Beidel, Turner, & Larkin, 1984; Zweig & Brown, 1985). Because the thoughts listed in this measure are heavily oriented toward dating, we made minor modifications to the phrasing of items to permit participants to respond in terms of interaction with a same-sex individual.

Procedure

We assigned participants to the two experimental conditions: hypothetical interaction with a same-sex wheelchair user or with a nondisabled college student. Because students were enrolled in two class sections of three types of psychology courses (General Psychology, Psychology of Sexual Behavior, and Abnormal Psychology), those enrolled in one of the two sections of each course were assigned at random to complete all measures in the wheelchair user or in the nondisabled condition.

The 58 participants enrolled in the General Psychology and Psychology of Sexual Behavior courses, 26 men and 32 women, were to have completed measures at two testing times 4 weeks apart. Of the participants, 33 were in the nondisabled condition and 25 were in the wheelchair user condition. Measures at the first testing time were administered in the following order: CISST, SISST, and the General Information Form. The same hypothetical interaction task was specified on the CISST and the SISST. Four weeks later, participants again completed the CISST and the General Information Form in the same experimental condition as before. To assure the anonymity of respondents, date of birth was used to match responses. Only 24 participants in the nondisabled condition and 12 in the wheelchair user condition were present to complete measures at both testing times.

Because of the nature of the course material, the 57 students enrolled in the two sections of Abnormal Psychology, 34 men and 23 women, were no longer expected to be "naive" 4 weeks after completing the measures. Therefore, they completed the CISST, the General Information Form, FNE, and SAD in one testing session and did not complete any measures 4 weeks later. Of the participants, 29 completed the measures in the nondisabled experimental condition and 28 in the wheelchair user experimental condition. Because of limitations on testing time, these participants did not complete the SISST.

In summary, 62 participants completed measures in the nondisabled experimental condition and 53 in the wheelchair user experimental

condition. Because of the sampling conditions noted above and because of missing data, sample sizes in the various comparisons differ.

RESULTS

Reliability of the CISST

Internal consistency. To determine split-half reliability, the relationships between scores based on odd and even numbered items on each of the four thought subscales were examined. Correlation coefficients are presented in Table 1; all were significant at the .01 level or beyond.

The relationships among CISST subscale scores were also examined using Pearson product-moment correlations. As the coefficients in Table 2 show, the clearest results were found on the frequencies of Self- and Other-Referent thoughts of the same valence: Self-Referent and Other-Referent Positive scores are significantly related to each other in both the nondisabled and in the wheelchair user conditions. The same is true for Negative scores.

Temporal stability. Scores obtained 1 month apart on each of the four CISST thought frequency subscales were correlated to estimate test-retest reliability. Results presented in Table 1 show significant correlation coefficients in the nondisabled condition, which range from .542 to .631. In the wheelchair user condition, only three of the *r* values reached significance (the *r* value on the Self-Referent Negative subscale was not significant). Test-retest correlation coefficients on the Comfort

TABLE 1
Reliability Estimates for the CISST

CISST	Subscales	Experimental Condition			
		Wheelchair User		Nondisabled	
		<i>n</i>	Pearson <i>r</i>	<i>n</i>	Pearson <i>r</i>
Split-Half ^a					
Positive	Self-Referent	25	.536**	33	.615***
	Other-Referent	25	.660***	33	.574***
Negative	Self-Referent	25	.687***	33	.866***
	Other-Referent	25	.878***	33	.757***
Test-Retest					
Positive	Self-Referent	12	.506*	24	.598***
	Other-Referent	12	.622*	24	.542**
Negative	Self-Referent	12	.265	24	.631***
	Other-Referent	12	.892***	24	.602***

^aSpearman-Brown correction formula was applied.

**p* < .05.

***p* < .01.

****p* < .001.

TABLE 2

Pearson Product-Moment Correlation Coefficients Related to Construct Validity of the CISST

	CISST				SISST				Ease with Students ^a	SAD	FNE
	Positive Thoughts		Negative Thoughts		Positive Thoughts		Negative Thoughts				
	Self	Other	Self	Other	Self	Other	Self	Other			
CISST Positive Self											
Other	.607** (47)	-.135 (47)	-.279* (47)	.412** (47)	.487* (19)	-.173 (19)	.299* (47)	-.348 (27)			
	.534*** (59)	-.313* (47)	-.346** (47)	.360** (47)	.533** (19)	.187 (19)	.270* (47)	-.275 (27)			
CISST Negative Self											
Other	.332** (59)	.215* (59)	.503*** (47)	-.287* (47)	-.151 (19)	.199 (19)	-.409** (47)	.300 (27)			
Comfort Interacting	.133 (59)	.471*** (59)	-.249* (59)	-.364** (47)	-.496* (19)	.259 (19)	-.559*** (47)	.113 (27)			
	-.093 (59)	.151 (59)	-.418*** (59)	-.008 (19)	-.008 (19)	-.401* (19)	.534*** (47)	.036 (27)			
SISST Positive											
Negative	.654*** (30)	.449** (30)	-.117 (30)	.264 (30)	N/A	-.066 (19)	.045 (19)	N/A			
Ease with Students ^a	.197 (30)	.205 (30)	.290 (30)	-.641*** (30)	-.090 (30)	-.439** (30)	-.270 (19)	N/A			
SAD	.037 (58)	.167 (58)	-.019 (58)	.420*** (58)	.089 (30)	N/A	-.434* (27)	-.176 (27)			
FNE	-.076 (28)	-.181 (28)	-.069 (28)	-.483** (28)	N/A	N/A	-.420* (27)	.478** (28)			
	.164 (28)	-.187 (28)	.316 (28)	-.580*** (28)	N/A	N/A					

Note. Pearson r values. Wheelchair user condition above the diagonal, nondisabled condition below. Values in parentheses are sample sizes.

^aRefers to ease with disabled students above the diagonal and ease with nondisabled students below.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Interacting scale were acceptable, $r(22) = .647$, $p < .001$, in the nondisabled condition, and $r(10) = .578$, $p < .05$, in the wheelchair user condition.

Validity

Construct validity estimates for the CISST were obtained by correlating subscale scores with SISST, Ease With Disabled/Nondisabled Students, Comfort Interacting, SAD, and FNE scores.

Nondisabled condition. Pearson product-moment correlation coefficients in Table 2 show that in the nondisabled condition, both CISST Self-Referent Positive and Other-Referent Positive scores were related significantly to SISST Positive scores. Similarly, CISST Self-Referent Negative scores were related significantly to SISST Negative scores. Other-Referent CISST scores were not significantly related ($p < .10$).

Neither CISST nor SISST Positive scores were related significantly to Ease With Nondisabled Students. CISST Self-Referent Negative (but not Other-Referent Negative) and SISST Negative scores, however, were inversely related to this variable.

CISST and SISST Positive scores were not significantly related to Comfort Interacting; however, both CISST Negative scores as well as the SISST Negative score were related to Comfort Interacting, showing that the more frequent negative thoughts that participants indicated, the more uncomfortable they felt with nondisabled students. CISST Self-Referent Negative thoughts were also significantly related to SAD and FNE scores. Overall, in the nondisabled condition, the SISST and the CISST seem to measure the same construct.

Wheelchair user condition. In the wheelchair user condition, however, the results on the CISST and SISST differ considerably. For example, although both CISST Positive scores are significantly related to Ease With Disabled Students and to Comfort Interacting scores, the SISST Positive score is not related to either of these variables. It is in the realm of negative thoughts, however, that the two scales differ most substantially. First, CISST and SISST Negative scores are unrelated. Second, although both CISST Negative scores are related to lack of Comfort Interacting and lack of Ease With Disabled Students, the SISST Negative score is related only to the former. Thus, the CISST in the disabled condition seems to be a better measure of facilitative and inhibitory thoughts concerning interaction.

Differences between nondisabled and wheelchair user conditions. Participants indicated that they were more at ease with nondisabled ($M = 4.93$) than with disabled ($M = 2.93$) students, $F(1,101) = 131.87$, $p < .001$. Nevertheless, a $2 \times 2 \times 2$ mixed design analysis of variance (ANOVA) comparison of SISST thought frequency scores [$2 \text{ Sex} \times 2$

Experimental Condition (Nondisabled/Wheelchair User) \times 2 Valence (Positive/Negative), with the latter factor being a repeated measure] showed no significant differences between the disabled and nondisabled conditions; indeed, the only significant finding in this analysis was that participants had more frequent Positive ($M = 47.61$) than Negative ($M = 33.24$) thoughts about interaction, $F(1,45) = 57.74$, $p < .001$. Planned comparisons with alpha level at .05 show that this was true in both experimental conditions. On the CISST, however, many significant differences were found.

A similar ANOVA comparison to that used on the SISST was made on CISST thought frequency scores. Here, an additional factor, Focus of Attention (Self-Referent/Other-Referent) was added as a second repeated measure. Means for this analysis are presented in Table 3. Results show a higher frequency of thoughts in the wheelchair user than in the nondisabled condition, $F(1,102) = 12.39$, $p < .001$. The significant interaction of Experimental Condition \times Focus of Attention, $F(1,102) = 4.57$, $p < .05$, and the Tukey HSD test show that this is true both for thoughts about oneself as well as thoughts about the other person. In addition, although the means in the wheelchair user condition did not differ significantly, in the nondisabled condition there were significantly fewer Other-Referent than Self-Referent thoughts. The Focus of Attention and the Valence main effects were also significant, $F(1,102) = 25.08$, $p < .001$, and $F(1,102) = 85.82$, $p < .001$, respectively. These show that thoughts about oneself were more frequent than thoughts about the other person, and that, as on the SISST, more frequent positive than negative thoughts were indicated.

The significant interaction of Experimental Condition \times Valence, $F(1,102) = 10.11$, $p < .01$, and the Tukey HSD test show that although there was no difference between the wheelchair user and the nondisabled conditions in the frequency of positive thoughts, there were significantly more negative thoughts in the wheelchair user condition than in the nondisabled condition. Although the 3-way interaction was not significant, the largest between-groups difference in means was on the frequency of negative thoughts about the other person. These results

TABLE 3
Ratings of Thought Frequency by Nondisabled Participants on CISST Subscales

Condition	n	Self-Referent		Other-Referent	
		Positive	Negative	Positive	Negative
Nondisabled	59	34.33	25.45	31.62	22.34
Wheelchair User	47	33.58	29.59	32.86	27.97

Note. Maximum score = 50.

indicate that the CISST seems to be effective in discriminating between thoughts about interaction with nondisabled and with wheelchair user students. The sex variable was included because both CISST and SISST scores may have been affected by the sex of the participants. Because no significant sex main effects or interactions were found, this variable was dropped from subsequent analyses.

Glass et al. (1982), using the SISST, reported that negative thoughts are more important than positive ones. It can be seen in Table 2 that Glass et al.'s (1982) findings for the SISST also hold true for the CISST, but only in the nondisabled condition: The frequency of negative thoughts is more important than the frequency of positive ones in predicting lack of Comfort Interacting, lack of Ease with Students, Social Anxiety, and Fear of Negative Evaluation, with positive thoughts making little, if any, contribution. In the wheelchair user condition, however, not only are the two CISST Negative scores related to both lack of Comfort Interacting and lack of Ease with Disabled Students, with the most important predictor of these variables being the frequency of negative thoughts about the other person, but both CISST Positive scores are significantly related to these variables as well. Furthermore, although trait measures such as the SAD and the FNE are closely related to the frequency of negative thoughts in the nondisabled condition, in the wheelchair user condition, the relationships among these variables are by no means clear-cut.

DISCUSSION

The findings of Study 1 are encouraging in documenting the psychometric properties of the CISST as a measure of the frequency of positive and negative thoughts about oneself and about the other person when interaction with same-sex wheelchair users and nondisabled students are considered. The results also show that interaction with an individual who is nondisabled or one who has a physical disability generate different frequencies of positive and negative thoughts about oneself and about the other person. Different factors seem to be important when one thinks about interacting with a nondisabled or with a disabled individual. When thinking about interaction with a nondisabled person, negative self-referent thoughts seem to be the most important predictors of anticipated comfort and ease; in interaction with someone who has a disability, positive thoughts as well as negative thoughts, especially negative thoughts about the other person, seem to be particularly important. Thus, the CISST produces results equivalent to those of the SISST in the nondisabled condition.

In the wheelchair user condition, however, the CISST seems to be more closely related to other variables of interest. Furthermore, data indicate that the pattern of scores on CISST subscales closely resembles

that found on open-ended thought-listing protocols (Fichten, Amsel, & Robillard, in press) and that individuals who have had contact with people with disabilities score differently from those who have not had such contact (Amsel & Fichten, 1988).

Although this investigation suggests that the CISST has merit as a research instrument, it should be noted that the reliability coefficients were somewhat low. In addition, in this investigation thoughts concerning interaction were evaluated in one situational context only. Although data indicate similar validity findings on two situational context evaluations (Amsel & Fichten, 1988), further research using different interaction tasks clearly is needed to evaluate the cross-situational consistency of the measure.

Another aspect of the validation of the CISST concerns investigating the thoughts of nondisabled individuals about interaction with students who have different disabilities. Therefore, in Study 2, one goal was to explore nondisabled students' thoughts concerning interaction with a different group of students, those who have a visual impairment. To promote easy and comfortable interaction, it is important to know about the thoughts of people with disabilities as well. Therefore, a second objective of Study 2 was to explore the thoughts of students with different disabilities concerning interaction with nondisabled individuals.

STUDY 2

METHOD

Participants

Participants were 86 nondisabled, 15 visually impaired, and 17 wheelchair user college students, of which 49 were men and 69 were women. All were participating in a larger study (cf. Fichten, Amsel, Robillard, & Judd, 1988; Fichten, Bourdon, Amsel, & Fox, 1987).

Nondisabled participants were enrolled in three class sections of an Abnormal Psychology class at a Montreal college. The professor allowed the experimenter to recruit volunteers for the study and provided time at the end of the class for those who wished to participate to complete the measures. Approximately 95% of the students present on the day of testing volunteered to participate.

Students with disabilities were enrolled in various colleges in the Montreal area and constituted a convenience sample. All were volunteers recruited through personal contacts, organizations for individuals with disabilities, and the offices of the coordinators of services for students with disabilities. Mean ages for the nondisabled, visually impaired, and wheelchair user groups were 20, 23, and 26, respectively.

Participants in the visually impaired sample were all "legally blind;" the mean duration of the visual impairment was 19 years (range = 5–27 years). In the wheelchair user sample, the mean duration of wheelchair use was 15 years (range = 6–29 years).

Procedure

All participants completed the CISST and the General Information Form. We slightly modified this latter measure to inquire about the specifics of the disability and to assess ease with visually impaired and with wheelchair user college students, as well as with nondisabled students.

Nondisabled students completed the CISST in one of three experimental conditions: hypothetical interaction with a same-sex college student who is (a) nondisabled, (b) visually impaired, or (c) a wheelchair user. We assigned each of the three class sections of the Abnormal Psychology course to one of the three experimental conditions on a random basis, resulting in 31 participants in the nondisabled, 28 in the visually impaired, and 27 in the wheelchair user conditions. Visually impaired and wheelchair user participants completed the CISST in the nondisabled experimental condition (large print or audiotaped versions of the measures were supplied to visually impaired participants). All participants also completed a variety of questionnaires required by the larger study in which they were participating; the sequence in which the measures were completed makes it extremely unlikely that participation in the larger investigation had any effects on the variables of this study.

RESULTS

Nondisabled Participants' Thoughts

To evaluate nondisabled participants' thoughts concerning interaction with nondisabled, visually impaired, and wheelchair user students, a 3-way mixed design ANOVA was conducted [3 Stimulus Person (Nondisabled/Visually Impaired/Wheelchair User) \times 2 Focus of Attention (Self/Other) \times 2 Valence (Positive/Negative), with the latter two factors being repeated measures]. Because there were no significant sex differences found in Study 1, the sex variable was dropped from all Study 2 analyses. Means are presented in Table 4.

Results indicate a significant main effect for Stimulus Person, $F(2,83) = 3.453, p < .05$. In general, more frequent thoughts were listed in the wheelchair user and in the visually impaired conditions than in the nondisabled condition; however, the Tukey HSD test shows that only the difference between the nondisabled and the wheelchair user conditions was significant. Significant main effects were also found on

TABLE 4

Mean Ratings of Thought Frequency by Nondisabled Participants Concerning Interaction with Different Types of Students

Interaction With Stimulus Person Who Is:	n	Thoughts			
		Self-Referent		Other-Referent	
		Positive	Negative	Positive	Negative
Nondisabled	31	31.90 (8.90)	28.00 (9.27)	31.87 (5.77)	23.32 (8.60)
Visually Impaired	28	35.64 (5.75)	28.25 (7.42)	33.07 (6.63)	25.93 (7.50)
Wheelchair User	27	35.63 (5.94)	31.44 (7.18)	34.30 (6.41)	28.37 (5.20)

Note. Maximum score = 50. Numbers in parentheses are standard deviations.

Focus of Attention, $F(1,83) = 27.32, p < .001$, and Valence, $F(1,83) = 53.20, p < .001$. Inspection of the means suggests that more frequent Self-Referent than Other-Referent thoughts and more Positive than Negative thoughts were indicated. The Focus of Attention \times Valence interaction was also significant, $F(1,83) = 5.29, p < .05$. Tukey HSD post hoc comparisons show that although the frequencies of Self- and Other-Referent Positive thoughts did not differ, both were more frequent than Self-Referent Negative thoughts ($p < .01$).

Because of the suggestion in Study 1 that differences in thought frequency are likely to be greatest on Other-Referent Negative thoughts, pre-planned 1-way ANOVA comparisons (Nondisabled/Visually Impaired/Wheelchair User Stimulus Person) on each thought type were performed. The only significant difference found was on Other-Referent Negative thoughts, $F(2,83) = 3.446, p < .05$. Comparison of the means showed that more negative thoughts were listed in the two disabled conditions than in the nondisabled condition, with the difference between the nondisabled and wheelchair user conditions being significant at the .05 level.

Comparison of Nondisabled and Disabled Participants' Thoughts

Thoughts concerning interaction with nondisabled students. To compare nondisabled, wheelchair user, and visually impaired students' thoughts concerning interaction with nondisabled students, a 3-way mixed design ANOVA comparison (3 Respondents \times 2 Focus of Attention \times 2 Valence) was carried out. Means for this analysis are presented in Table 5. Results show significant main effects for Focus of Attention, $F(1,60) = 22.53, p < .01$, with more frequent Self- than Other-Referent thoughts indicated, and for Valence, $F(1,60) = 69.26, p < .01$, with higher

TABLE 5

Mean Ratings of Thought Frequency by Nondisabled and Disabled Participants Concerning Interaction with Nondisabled Students

Participants	n	Thoughts			
		Self-Referent		Other-Referent	
		Positive	Negative	Positive	Negative
Nondisabled	31	31.90 (8.90)	28.00 (9.27)	31.87 (5.77)	23.32 (8.60)
Visually Impaired	15	29.80 (7.90)	24.40 (9.01)	28.27 (7.06)	20.73 (5.82)
Wheelchair User	17	32.41 (9.92)	21.24 (6.23)	30.82 (9.15)	15.76 (5.30)

Note. Maximum score = 50. Numbers in parentheses are standard deviations.

Positive than Negative scores. A significant interaction for Focus of Attention \times Valence was also found, $F(1,60) = 14.50, p < .01$. The Tukey HSD test shows that although there was no difference between the frequencies of Self- and Other-Referent Positive thoughts, more Self-Referent Negative than Other-Referent Negative thoughts were listed and that, for both the Self- and Other-Referent categories, more Positive than Negative thoughts were indicated ($p < .01$).

In addition, a significant Respondents \times Valence interaction was also found, $F(2,60) = 4.73, p < .05$. Planned comparisons between nondisabled and disabled (visually impaired and wheelchair user) participants' scores showed differences for both Self-Referent and Other-Referent Negative thoughts [$t(61) = 2.46, p < .05$; $t(61) = 2.89, p < .01$, respectively], with nondisabled participants ($M = 28.00, SD = 9.27$; $M = 23.32, SD = 8.60$, respectively) having more such thoughts than disabled participants ($M = 22.72, SD = 7.70$; $M = 18.09, SD = 6.01$, respectively). There were no significant differences found on either Self- or Other-Referent Positive thoughts.

Thoughts concerning interaction with each other. To compare nondisabled participants' thoughts concerning interaction with students who have a disability (visually impaired or wheelchair user) with disabled participants' thoughts concerning interaction with nondisabled students, a 4-way mixed design ANOVA comparison was carried out, with Valence and Focus of Attention as repeated measures. In addition, there were 2 levels of Participant (Nondisabled/Disabled) and 2 levels of Condition (Visually Impaired/Wheelchair User). Thus, the Respondent \times Condition interaction represents the following four combinations: thoughts of (a) nondisabled respondents concerning interaction with a visually impaired student, (b) nondisabled respondents concerning interaction with a wheelchair user, (c) visually impaired respondents concerning interaction with a nondisabled student, and (d)

TABLE 6
Mean Ratings of Thought Frequency by Nondisabled and Disabled Participants
Concerning Interaction with Each Other

Participants	Condition	Interaction With a Student who is:	n	Thoughts			
				Self-Referent		Other-Referent	
				Positive	Negative	Positive	Negative
Nondisabled	Visual	Visually Impaired	28	35.64 (5.75)	28.25 (7.42)	33.07 (6.63)	25.93 (7.50)
Nondisabled	Wheelchair	Wheelchair User	27	35.63 (5.94)	31.44 (7.18)	34.30 (6.41)	28.37 (5.20)
Disabled (Visually Impaired)	Visual	Nondisabled	15	29.80 (7.90)	24.40 (9.01)	28.27 (7.06)	20.73 (5.82)
Disabled (Wheelchair User)	Wheelchair	Nondisabled	17	32.41 (9.92)	21.24 (6.23)	30.82 (9.15)	15.76 (5.30)

Note. Maximum score = 50. Numbers in parentheses are standard deviations.

wheelchair user respondents concerning interaction with a nondisabled student. This analysis yielded a Respondents main effect, $F(1,83) = 27.87$, $p < .001$. As the means in Table 6 show, nondisabled participants indicated more frequent thoughts than did participants with disabilities. A Respondents \times Valence interaction, $F(1,83) = 4.74$, $p < .05$, was also found. The means suggest that nondisabled respondents indicated relatively more frequent negative thoughts than did disabled respondents; post hoc tests were performed within the context of the 3-way interaction reported later. In addition, the significant Focus of Attention \times Valence interaction, $F(1,83) = 4.63$, $p < .05$, and the Tukey HSD test show higher Positive than Negative scores for both Self- and Other-Referent thoughts ($p < .01$) as well as higher Self-Referent than Other-Referent scores for both Positive and Negative thoughts ($p < .05$; $p < .01$, respectively).

A significant 3-way interaction, Respondents \times Condition \times Valence, $F(1,83) = 7.07$, $p < .01$, was also found. The means suggest that relatively more negative thoughts were indicated by nondisabled than by disabled participants. Post hoc tests show the following: for each Respondents and Condition combination, the Positive score was higher than the Negative ($p < .05$ or better). In addition, visually impaired participants had fewer positive thoughts about interaction with a nondisabled student than nondisabled participants had concerning interaction with a visually impaired student ($p = .05$), and wheelchair condition participants had fewer negative thoughts concerning interaction with a nondisabled student than nondisabled participants had concerning interaction with a wheelchair user ($p < .05$).

DISCUSSION

Results for nondisabled participants again show that there were (a) more frequent thoughts in the disabled than in the nondisabled conditions, (b) more frequent self- than other-referent thoughts, and (c) more frequent positive than negative thoughts. As in Study 1, although there were no differences in the frequency of positive thoughts, somewhat more frequent negative other-referent thoughts were indicated in the disabled conditions than in the nondisabled condition, with the difference being particularly noteworthy in the wheelchair user experimental condition.

Comparisons of nondisabled and disabled students' thoughts concerning interaction with nondisabled peers show that there are no differences among groups in the frequency of positive thoughts. Paradoxically, nondisabled participants had more frequent negative self-referent and other-referent thoughts than did participants who had a disability; this may have been due to the nature of this nondisabled sample because

somewhat more negative thoughts were indicated by nondisabled participants in the nondisabled condition in Study 2 than in Study 1. Replication of the results with a larger sample is needed.

As for interaction with each other, results showed that, generally, nondisabled participants had more self- and other-referent negative thoughts concerning interaction with peers who have a disability than respondents with disabilities had concerning interaction with nondisabled students.

GENERAL DISCUSSION

The results show that the CISST has merit as a research instrument for the evaluation of thoughts about interaction between nondisabled students as well as between nondisabled students and their peers who have physical disabilities. Nevertheless, validation in various "real world" situations, using behavioral indices of comfort during interaction, is needed to determine the ecological validity of the measure and to assess the responsiveness of the scale to changing situational demands.

The Valence and Focus of Attention components of the scale both seem to be important dimensions. Results show that thoughts about oneself were more frequent than thoughts about the other person and that positive thoughts were more common than negative ones, regardless of the nature of the interaction task. In spite of the frequent positive thoughts, consistent with the results of Glass et al. (1982), it was found in the nondisabled condition that frequency of negative thoughts was more closely related to Comfort Interacting and Social Anxiety. When thoughts concerning interaction with a person who has a disability were evaluated, however, frequency of positive thoughts was found to be a significant predictor of comfortable interaction as well.

The importance of the Focus of Attention component of the CISST becomes particularly evident when thoughts about interaction with different groups of people are evaluated. The social cognition literature as well as the Hope et al. (1986) study suggest that it is the frequency of self-referent thoughts that is an important predictor of social anxiety and distress. In the nondisabled experimental condition, this was found to be true in the present investigation as well. As in Fichten's (1986) study of thought-listing data, however, it was found in the present investigation that negative thoughts about the other person (i.e., the person who has a disability) are particularly important predictors of comfort and ease with individuals who have a disability.

The results suggest that thoughts about the other person are more reactive to situational demands than are self-referent thoughts, which seem to be an index of dispositional social anxiety. For example, when

nondisabled students' thoughts concerning interaction with individuals who have different disabilities were evaluated, the data suggested that interaction with a wheelchair user results in more negative thoughts than interaction with a person who has a visual impairment. This is consistent with findings reported in the literature that show that, in social situations, nondisabled individuals not only prefer to be with persons who have a visual impairment rather than with persons who use a wheelchair (Stovall & Sedlacek, 1983), but that they are also more comfortable with visually impaired peers than with wheelchair users (Fichten, Amsel, Robillard, & Judd, 1988). The differences in thoughts about people who have different disabilities demonstrate that when thoughts concerning interaction are evaluated, it is unwarranted to assume that all situations are equivalent.

The data show that when interaction with nondisabled people is evaluated, the thoughts of students who use a wheelchair and those who have a visual impairment are similar to the thoughts of nondisabled students. Other studies (Fichten, Amsel, Robillard, & Judd, 1988; Fichten & Bourdon, 1986) have also shown that people with disabilities are as comfortable with their nondisabled peers as are nondisabled individuals. Therefore, when planning intervention programs designed to promote interaction, it is the nondisabled students' cognitions rather than the thoughts of students who have a disability that may have to be altered. In such endeavors, thoughts about the person with a disability should be carefully evaluated and possibly targeted for change.

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Rehabilitation Counselor Performance Measures: A Comparative Study

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Five counselor performance measures were investigated for their application and use in state-federal vocational rehabilitation agencies. The five measures analyzed were Status 26 Closure, Sather's Composite Index Score, Sermon's Total Weighted Closure Index, Sermon's Average Weighted Closure Index, and Phillips's Multivariate Index. The sample consisted of counselors employed by one state agency over 3 fiscal years. Each measure was assessed for test-retest reliability, internal consistency, and relationship with four of the eight RSA standards. The results suggested that a combination of counselor performance measures may be more effective than any single index.

After passage of the 1954 Amendments to the Rehabilitation Act, which permitted federal funding of rehabilitation counselor education, there followed an accelerated development of counselor training programs, and subsequent concerns about the professional identity of rehabilitation counseling. This concern was exemplified by Muthard and Salomone's (1969) investigation of the roles and functions of rehabilitation counselors. During the next two decades, two parallel and interrelated phenomena occurred within the profession. One was focused on roles and functions (e.g., Rubin, Matkin, Ashley, Beardsley, May, Onstott, & Puckett, 1984). The second was focused on the quality of counselor performance and its correlates (e.g., Hardy, Luck, & Chandler, 1982; Scofield, Berven, & Harrison, 1982; Thomas, 1987). Lofaro's (1983) review of doctoral research in rehabilitation revealed the continuing concern with roles and functions as well as with the competencies of counselors. The latest national venture under the auspices of the National Council on Rehabilitation is a study of the roles, functions, and competencies of counselors and related rehabilitation personnel reported by Wright, Leahy, and Riedesel (1987).

Despite the range of indices now available to reflect counselor competency, including certification, licensure, training program accredi-

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