The Testing of a Protocol for Validating Claims of Facilitated Communication

Jorge Teodoro

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THE TESTING OF A PROTOCOL FOR VALIDATING CLAIMS OF FACILITATED COMMUNICATION

by

Jorge Teodoro

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So many people have contributed to the realization of this thesis that it is difficult to claim this project as my own. Necessarily, only one person's name can appear on the title page. I am honored to accept that appointment, although without the work and support of others, this project would never have been completed.

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To all of you this manuscript is as much yours as it is mine.

Jorge Teodoro
Facilitated Communication (FC), is a new and controversial augmentative communication technique. This study examined the facilitated messages of six severely mentally impaired school children, produced under naturalistic, yet controlled, experimental conditions. The students were removed from the presence of their facilitators and experienced out-of-classroom events. When the students returned, their facilitators read descriptions containing True, False or No Information about the students' experiences. Messages produced in the ensuing facilitation sessions indicated that the facilitators influenced the facilitated messages, although they appeared unaware that they were doing so. Meanwhile, students showed little resistance to the testing procedures. Based on these results it was concluded that successes reported with FC as a means of augmenting the communication of language disabled individuals are likely illusory. Less controversial and very effective methods (e.g., operant based training techniques) should not be displaced by FC.
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INTRODUCTION

Facilitated communication (FC) is a relatively new augmentative communication technique that is said to dramatically enhance the expressive language abilities of nonverbal, developmentally disabled people. Although the first published references to FC appeared as recently as 1990 (Biklen), it has received substantial media attention in Australian television and newspapers, Canadian television and radio, and in the United States (e.g., the ABC television program 20/20, the PBS television program Frontline, and in the New York Times, Makarushka, 1991). Despite little more than anecdotal reports of efficacy, FC has already been propelled into the mainstream of special educational services (Jacobson and Mulick, 1992).

FC is said to provide nonverbal disabled people a unique means of communication that can lend expression to previously hidden intellectual, emotional, and social abilities (Biklen, 1990; Biklen, Morton, Saha, Duncan, Gold, Hardardottir, Karna, O'Connor & Rao, 1991). Thus, when using FC, a person thought to be severely or even profoundly intellectually impaired might begin to communicate at a level suggesting highly sophisticated cognitive skills. For example, in a typical anecdotal case report, a completely non-verbal, autistic, and retarded child might abruptly begin to type out statements communicating frustration about the experience of being autistic and being misunderstood by others.
The implications of such reports are staggering and, as might be expected, FC has generated an intense controversy among educators, parents, and others working with severely disabled people (e.g., Biklen, 1992a vs. Cummins & Prior, 1992a; Biklen, 1992b vs. Calculator, 1992; Cummins and Prior, 1992b; "Horror Story," 1992).

As with other forms of augmentative communication, FC is based on the use of a nonvocal system of expressive language chosen on the basis of the client's presumed motor impairments and repertoire of cognitive skills. The form of the expressive response can be the pointing of a finger at a sequence of pictures, words, or letters, or, for more severely physically impaired clients, using a head-mounted pointing stick or choosing items by the direction of their eye gaze (e.g., Interdisciplinary Working Party (IDWP), 1988).

FC differs from these traditional methods of augmentative communication according to the type and degree of physical assistance provided to the communicator. An assistant, or facilitator, plays a critical role in physically assisting a student to make selections from a keyboard or alphabet display. The assistance is typically in the form of hand-over-hand, wrist or forearm support of the person, as he or she makes pointing responses (e.g., Biklen and Schubert (Table 1), 1991). The degree of support is usually faded as time passes, but need not be either faded or removed for the technique to be successful. The physical support serves many purposes: isolation of the index finger; initiating the response; slowing the hand and pulling it back from the letter; communicating emotional support; and
generally providing a steadying, supportive form of control over the client's motor responses (Biklen & Schubert, 1991). However, this support is not meant to allow the facilitator to make choices for the client.

According to the developers and proponents of FC, the success of the technique rests on two major factors (Biklen, 1990; Crossley, 1990). The physical support provided by the facilitator in the form of hand-over-hand or other assistance is said to be critical (at least in treatment) because it compensates for uncontrolled, or apraxic forms of motor responding. The facilitator steadies the client's hand in such a way that interfering motor activity can be minimized, allowing the client to choose letters or words more easily. The second factor said to be critical to FC is the social and emotional support and acceptance expressed by the facilitator. The best facilitators are supposed to: (a) believe in the ability of their students and avoid testing them for competence; (b) speak to them in a normal manner; (c) help the students to avoid mistakes; and (d) encourage students to maintain their focus on the keyboard (Biklen, 1990; Biklen & Schubert, 1991). In fact any skepticism about the client's ability to communicate, either expressed by the facilitator (Crossley & McDonald, 1984), an outsider (Biklen et al., 1991), overtly or covertly (Calculator, 1992) could make the person being facilitated unwilling to cooperate.

Given the level of physical assistance required with FC, controversy has centered on the validity of reports that the individuals using FC are in fact communicating. The skeptic's primary criticism is that the person's apparent
expressive abilities are little more than the product of a "Clever Hans" phenomena (Sebeok, 1981), or worse, a "Ouija Board effect" (Review Panel, 1989). In other words, it is the facilitator, not the client, who is producing the words or sentences in question (e.g., Cummins & Prior, 1992a; IDWP, 1988).

Biklen (1990, 1992a) and Crossley (Crossley & McDonald, 1984) also sometimes expressed concern over the possible influence of the facilitator over the messages attributed to the individual being facilitated. According to Biklen (1992a; Biklen & Schubert, 1991) the facilitated messages have several characteristics that can only be attributed to the communicator, not the facilitator. These include idiosyncrasies in the messages (such as unique expressions the facilitator would not use), phonetic spellings, typographical errors, information not known to the facilitator, and the uncovering and consistency of an individual's personality across facilitators. Unfortunately, this kind of evidence exists only in the form of anecdotal reports as no attempt has been made to measure "personality characteristics" and "unique expressions" across students.

Despite these "proofs," controversy over the degree to which a facilitated statement is in fact the client's has generated heated court battles (e.g., Cummins and Prior, 1992b; Rimland, 1992). In some instances parents have confronted their school districts over the authenticity of their child's communication abilities (Russell, 1992, personal communication), particularly when those abilities would suggest that the child requires a different educational program to support the previously unrecognized abilities. In more than one example, court battles have
ensued after an individual's facilitated communications included allegations of abuse (Cummins and Prior, 1992b; Facilitated communication, 1992; Rimland, 1992; "US courts", 1992). Clearly there is an urgent need to develop a means of validating claims of FC, particularly in those cases where the abilities of the client are in question.

The difficulties inherent in proving that the client is in fact responsible for the facilitated messages have been a recurring theme from the earliest days of FC. During the 1970's, Rosemary Crossley while working at the St. Nicholas Hospital in Melbourne, Australia began using FC to steady the hands of people with severe cerebral palsy to allow them to use a communication board. Crossley (Crossley & McDonald, 1984) described how her most celebrated case, Annie, often "fooled about," gave incorrect or un-interpretable answers, or was resistant at all the wrong times--when she was asked to perform for outside observers, skeptics, and supervisors. Consequently, Crossley had tremendous difficulty convincing others that Annie and Crossley's other cases were not severely or profoundly developmentally disabled and could communicate independently using FC. Although Crossley's claims regarding Annie were eventually accepted by the Australian Supreme Court, no empirical evidence has ever been published to validate the communicative abilities of Crossley's original clients. Questions are still raised about their capacity to communicate independently (Bettison, 1991; IDWP, 1988).

Controversy over FC only became more heated when the technique was extended to autistic individuals. Autism has been fertile ground for major shifts
in conceptualization. It has already undergone at least one major shift in theories about its etiology. As recently as the mid 1960's autism was thought to be caused by cold, distanced parents (Bettleheim, 1967). Etiological theories of this sort were rejected when it became clear that these parental characteristics were more likely to be the result of having an autistic child than causing autism (Schreibman, 1988). Autism is now accepted as a disease of varied biological etiologies, although the physiological underpinnings are still being explored (e.g., Courchesne, 1991; Rapin, 1991). Biklen (1990) compared a brief review of the literature on autism with his anecdotal reports of the facilitated messages of some of Crossley's students. He concluded:

> [a]mong other things it forces me to redefine autism. While the students in this study included some who previously had been thought of as severely intellectually disabled and autistic, they demonstrated unexpected literacy skills (p. 312).

Furthermore,

> among those for whom facilitated communication has allowed high levels of literacy and numeracy are people who were previously presumed to be among the 'lowest' intellectually functioning persons labelled autistic (p. 312).

The re-conceptualization of autism offered by Biklen (1990; Biklen, 1992a; Biklen & Schubert, 1991; Biklen et al., 1991) is that the communication deficits characteristic of the disorder result from an impaired motoric "speech output device"--apraxia of speech--and not intellectual or cognitive deficits related to language understanding or production. To date, no research has ever been reported that would support or refute the notion that autism is primarily a dysfunction in the
performance of planned and voluntary movements (i.e., apraxia).

Research aimed at validating or invalidating claims of FC abilities has generally taken one of three forms: anecdotal case reports (e.g., Biklen, 1990; Biklen & Schubert, 1991; Biklen et al. 1991; IDWP, 1988), controlled case studies that manipulate the information provided to the facilitator about the client's experience and topic of communication (e.g., Catanese, 1988; Hudson, Melita, & Arnold, 1992; IDWP, 1988; Review Panel, 1989), and a controlled message-passing protocol in which clients communicate information unknown to the facilitator (Review Panel, 1989).

Biklen (1990) visited the Dignity through Education and Language Communication Centre (DEAL) in Melbourne, Australia where FC was being used with the autistic clients. He was impressed with the high level of comprehension demonstrated through facilitation by the DEAL clients. All of the clients could read and they could type messages, although their only speech might be echolalic. The facilitated messages indicated a level of comprehension and intelligence in the normal to bright ranges. The question of the validity of these messages was first answered by Biklen (1990) in two ways. First, several of the clients were able to type relatively independently (i.e., with no more that a hand on the sleeve of the student). Second, the students often indicated their understanding through facial expressions, laughing, and other forms of verbal noises that frequently confirmed the content of their FC expressions.

More recently, in two other naturalistic (and very similar) studies of the
facilitated communications of the same set of autistic students (Biklen & Schubert, 1991, Biklen et al., 1991), Biklen and his colleagues described their own work and findings with FC. Students were observed and videotaped in their classrooms. The students began their FC with single word answers and over 12 months progressed eventually to sentences (Biklen et al. 1991). Again with FC, the students demonstrated high levels of comprehension and speed of learning. Despite the students’ literacy, any autistic behaviors (e.g., echolalic, stereotypic, self-injurious) that existed before the trial remained. Students communicated, through FC, that they had acquired reading skills mostly through incidental learning. Finally, all of the students still required touch, usually to the hand or wrist. As had been reported elsewhere (Biklen & Schubert 1991; Crossley & McDonald, 1984; IDWP, 1988), when physical contact was faded too quickly the quality of facilitated messages deteriorated. Students’ comments indicated that they resisted fading and generalization to other facilitators because they feared it meant losing an important relationship and/or settling for a lower level of accomplishment.

To date all of the empirical data reported by Biklen and his colleagues (Biklen, 1990, Biklen & Schubert 1991, Biklen et al., 1991) have not included control or comparison conditions. Calculator (1992) and Jacobson and Mulick (1992) have dismissed Biklen and his colleagues’ research strategy as anecdotal while calling for controlled single-subject research. The appropriateness of utilizing ethnographic, or purely descriptive studies to answer questions about the validity of facilitated messages has been questioned by Cummins & Prior (1992a),

The IDWP (1988) used three different methods involving control or comparison situations to assess the validity of FC. They found substantial evidence that the facilitators, and not the nonspeaking individuals, were responsible for facilitated messages. The first method used by the IDWP included a comparison of the recommendations and opinions of staff, from the DEAL Communication Centre, with those of professionals, from various other organizations, who specialized in the field of severe communication disabilities. The communicative abilities of 31 cases known to the IDWP were reviewed. Partial agreement between DEAL staff and the communication disability specialists occurred in only three cases. The two groups could not agree on the other 28 cases. None of the people in this sample carried a diagnosis of autism.

In a second evaluation--a controlled study requiring clients to do a matching task--the test patterns presented to the facilitators and the clients were manipulated (Catanese, 1988). Through facilitation the client then selected the correct test pattern from a display of options. Rosemary Crossley involved herself in this evaluation by approving the stimulus materials as well as speaking to all of the participants before the testing. The presentations of the test patterns were manipulated so that: (a) only the client saw the test pattern; (b) both the facilitator and client saw the same test pattern; or (c) different test patterns were shown to the facilitator and client who were unaware that the other had seen a different pattern. The selections made during facilitation corresponded with the test
patterns shown to the facilitator and not those shown to the client. When the facilitators were not shown any materials the facilitated answers were still incorrect.

The third evaluation involved the video-taping of the head movements of two physically disabled men (DL and L) who used head pointers to indicate "yes" or "no" on a display held by a facilitator. Measurements made from the videotape showed that the men never moved their head pointer sufficiently to indicate an answer. It was only through the facilitators' moving of the display that responses were made. In these examples, as in all of the other cases in the IDWP report, the facilitators seemed genuinely unaware of their influence over FC.

Biklen (1992a) criticized the IDWP (1988) report saying it was "poorly constructed" because it mixed people with various disabilities: cerebral palsy, head injury, autism, and physical disabilities. Furthermore, the Catanese (1988) matching task did not involve typing or people with autism, and there was not enough detail about the test and the level of support provided to the clients.

The Review Panel (1989) used an experimental design ("controlled study") to validate the FC messages of three autistic and/or intellectually disabled clients. For each client a set of questions was agreed upon and randomly assigned to some conditions: (a) a baseline where, in their usual style, the facilitator asked questions and the client responded; (b) the same questions were given to the facilitator and the client; (c) different questions were given to the facilitator and the client; (d) only the client was asked questions while the facilitator listened to
music. During conditions "b","c", and "d" the facilitator wore headphones through which the questions or music were transmitted while the client received audio-recorded questions through an audio-tape player.

The results of the controlled study were equivocal. One client did not demonstrate independently correct answers, but the Review Panel (1989) concluded that this did not necessarily mean that he was not able to communicate. Based on another client's two correct responses the Review Panel (1989) concluded that she could communicate independently through FC even though she could not answer questions that her facilitator did not hear. A third client's messages were clearly influenced by the facilitator. All of the clients' messages were influenced at least once by their facilitators.

A "message passing exercise" was used by the Review Panel (1989) to determine the validity of the FC of three other clients. In this exercise three DEAL clients were each presented with gifts while their facilitators were absent from the room. When the facilitators returned, they used FC in their accustomed fashion to learn what had occurred when they were absent. All three clients were able to convey some information to their facilitator about their experiences thus confirming their capabilities for independent communication.

In summary, of the six clients studied by the Review Panel four of them had their communication validated either through the controlled study or the message passing exercise. The authors added that negative results did not necessarily invalidate a person's communications; to do so it would be necessary to collect
data over several trials. The authors concluded that their results had not wholly supported either side of the FC controversy.

Both of the Review Panel's studies have been criticized by Cummins and Prior (1992a) and Biklen (1992a). Cummins and Prior (1992a) believed the interpretation of the controlled study was too generous since the facilitators' influence over communication was demonstrated for all clients. Biklen (1992a), on the other hand, claimed that one of the control study clients, whose communication was not validated, now types independently. Furthermore, he stated that the usefulness of the study was questionable since there was no information on the questions asked of the clients or the extent of support provided to each client.

Criticisms have been levied at the Review Panel's message-passing study. The Review Panel said nothing about the disability of the message passing subjects. Cummins and Prior (1992a) suspect that since these clients were offered by DEAL (which refused to participate in the controlled study) their ability to communicate was not in doubt. In Biklen's (1992a) rebuttal he commented that the Review Panel did not say that the characteristics of the clients in the message-passing study differed from those of the control study (i.e, they were all autistic). Furthermore, three of the four students, whose communications the Review Panel validated, at some time had been in special schools for the developmentally disabled.

In summary, previous studies on FC have had methodological difficulties, such as headphone wearing facilitators being able to hear their clients' questions,
and problems with the subject-selection criteria. Proponents of FC (e.g., Biklen, 1992a) claim that the more scientifically rigorous studies cannot measure "true" communicative abilities because participants (especially when autistic) become resistant when they know they are being tested and evaluated. Testing breaks the bond of trust that is claimed to be essential to the facilitator-student relationship. On the other hand, evidence for the communicative abilities of FC clients have been dismissed as being only anecdotal. Leaving open the question of the effects of both therapist and researcher biases is the fact that not one single double-blind study has been done on FC. Another methodological issue not yet addressed is the process by which a message is categorized as "valid" or "invalid". This kind of information would be extremely valuable to service-providers who are trying to determine the appropriateness of this technique for a given client. Finally, FC as an augmentative communication technique cannot be validated globally. Validation of this technique must occur on an individualized basis through the use of single-subject research methods.

The present study was a response to Biklen’s call for research on FC (Biklen, 1992b). This study attempted to strike a balance between several factors. Scientifically rigorous research versus validating FC in a naturalistic setting; an intermediate school district's need to develop a policy concerning the use of FC as an augmentative communication technique versus individual validations based on a single-subject rather than a group design; translating qualitative data (i.e., transcripts of facilitated messages) into quantitative data. Facilitated messages
were generated under controlled conditions in order to directly compare the control of the student and facilitator over their content.

The subject-selection criteria for this study was more rigorous than in previous studies of FC. Referrals were procured from a school board for children diagnosed as developmentally disabled and receiving FC. It was hoped that by collecting background information (such as the level of assistance provided during FC, school assessments of communication and cognitive skills, and family characteristics) on each participant, possible indicators of success with FC could be discovered.

The study employed a message-passing paradigm to evaluate FC. By manipulating information provided to the facilitator, a direct comparison could be made of the contributions to the facilitated messages made by both the facilitator and the child. Attempts were made to measure the students' resistance to being tested. Finally, the study was conducted in the students' natural settings—the school or home—using out-of-classroom experiences that were both highly salient and highly familiar to the children with the hope that such activities would evoke a natural flow of communication, given the children could communicate independently. So far, studies of facilitated communication have failed to consider all of these factors in an experimentally controlled manner.
METHOD

Subjects

The communicative abilities of six developmentally disabled children who were communicating through FC techniques were examined. Representatives of the Genesee Intermediate School District (Flint, MI) solicited parents whose children were being facilitated either at home or at school. Referrals were sought for children actively communicating through FC and meeting the following selection criteria: (a) currently classified as "developmentally disabled" for the purposes of educational placement (Michigan Educational Placement Guidelines), (b) a history of at least six months experience using FC, (c) reliable (i.e., at least daily) demonstration of FC ability reported by at least one adult who is either the child's parent or a member of the Genesee Intermediate School District staff, and (d) consent from the legal guardians for participation in the study. Six parents agreed to allow the participation of their children in this study. Information was gathered on each child through a review of school records and structured interviews with teachers and parents who knew the children well.

Background Information

Each child's educational review was examined for information regarding
the following variables (see Appendix A): (a) current level of intellectual functioning, (b) current level of expressive and receptive language functioning (independent of FC skills), (c) child demographics (age, diagnosis, presence of behavioral problems, motor or physical impairments), and (d) family demographics (e.g., SES, and number of siblings).

Structured Interviews

Structured interviews with at least one adult who knew each child well were conducted by the principal investigator (see Appendix B). Originally the intention of these interviews had been to find two adults who were involved in the child's educational planning team--one who reported reliable facilitation with the child, and another who doubted the validity of the child's facilitated messages. For a number of reasons it was not possible to do this. For most of the children involved in the study it was not possible to find adults who knew the child well and had sufficiently divided opinions on the child's FC abilities. Therefore, this component of the methods was dropped. For the two cases (Betty and Brian to be described shortly), where adults of sufficiently divided opinions could be found, it was not possible to set up a time for interviewing. The interviews were conducted in order to assess each adult's perceptions of: (a) the typical content of the child's statements using FC, (b) the child's typical means of communication aside from the use of FC and the typical content of those communications, (c) the child's current level of overall cognitive and adaptive abilities, and (d) the child's
preferred activities and objects that appear to be reinforcing to the child. Facilitators were also asked to describe the level of assistance provided to their students during FC sessions.

Participants

Characteristics

Each child who participated in the study is described below. (Appendix C contains more complete information) These descriptions are based on the reviews of the children’s educational records and the interviews with the knowledgeable adults. Data from the educational records review and the VABS interviews are presented in Table 1.

Sean. Sean was a 10-years-old at the time of the study who had been diagnosed as autistically impaired. His IQ was estimated to be in the low 40's. The results of Vineland Adaptive Behavior Scale (VABS) indicated that his adaptive behavior was at about the 2-6 year-old level and his fine motor skills were less well developed than his gross motor. The best developed of his communication skills were his written abilities. Sean had little vocal skills, outside of some echolalia. His mother facilitated with him on a home-made letter board. His responses mostly consisted of yes/no responses.

Mark. Mark, aged 17 years, was diagnosed as autistically impaired. He
was estimated to have an IQ of less than 30. His receptive and expressive lan-
guage abilities were at the 2-5 and 1-9 year levels, respectively, while the level of
his adaptive behavior was measured with the VABS to be about 2-5 to 2-11 years.
His Written Skills were the best developed of these (AE = 4-3/5-11). Mark's
speech tended to be echolalic with the first consonant usually dropped from
words. His primary facilitator was his teacher who facilitated with Mark on an
electronic spell checker.

Margaret. Margaret was 16 years old at the time of the study. She had
been diagnosed as autistically and severely mentally impaired. Intelligence and
communication assessments had placed her abilities at about the 4-9 to 2-8 year
levels. The VABS was administered to both her teacher-facilitator and her
mother. According to the VABS, her written language abilities were the best
developed of her language skills (AE = 5-11 to 7-10). Margaret had no func-
tional speech and could use a few signs. Her teacher facilitated with her on a
Canon Communicator. Her facilitated messages were limited mostly to single
word and yes-no responses.

Betty. During her participation in the study Betty was 12-years-old. Her
IQ was estimated to be 23. Both her mental abilities and communication skills
were at the two to 2½ year-old level. According to the VABS interview with her
teacher her most highly developed abilities were her receptive and written com-
munication skills (AE = 4-0 for both). Her speech tended to be perseverative
and difficult to understand. She could recognize some written words, such as her name and familiar breakfast foods. Betty's facilitated messages usually contained full sentences and correctly spelled words. A volunteer, whom Betty trusted and was reportedly her most proficient facilitator, facilitated with her on a Canon Communicator.

Joe. Joe, age 17, had the same teacher/facilitator as Mark. Intelligence testing had placed his IQ from as low as 30 to as high as 55, while the most recent communication assessments placed Joe's abilities within the 2½ to three year range. Within the Communication Domain of the VABS his Written skills were his best developed by far. His parents reported that at four or five years he developed features of autism. During the time of the study his speech was well articulated but almost completely echolalic. His teacher facilitated with him on an electronic spell checker. His facilitated messages usually contained phrases or single words. According to his facilitator Joe was very definite about the letters he selected during FC.

Brian. Brian was seven years, four months old at the time of the study. He suffered from a profound motor impairment, the result of post-meningeal encephalopathy, spastic quadriplegia, that left him with little or no voluntary control over his limbs. At the time of the study Brian was considered untestable for purposes of intellectual and communication assessment. The results of the VABS interview with his mother indicated that by far his best developed skills were
within the Communication Domain, especially his Receptive and Written abilities. Brian was facilitated by his mother on a home-made alphabet board on which messages containing correctly spelled words and full sentences were produced. Outside of FC, with little voluntary control of his muscles, he had very circumscribed communicative abilities aside from squealing noises, smiling appropriately when spoken to, and tapping his foot to indicate yes or no.

In summary, the children who participated in this study had been assessed as severely mentally impaired. Furthermore, according to the VABS interviews, their most highly developed Communication skill was in the Written Domain. All of the students had been exposed to FC for at least six months with their designated facilitator. The level of assistance provided to all of the children consisted of their pointing hand being held by their facilitator either at the palm or at the wrist. Some of the students (Betty, Brian, and Mark) produced correctly spelled words from their first session with FC. All of the facilitators had attended at least a single day of FC workshops conducted by an FC expert.

Sean and Brian, were facilitated by their parents. Three, Joe, Mark, and Margaret were facilitated by a teacher. The sixth student, Betty, was facilitated by a trusted volunteer with whom Betty had frequently facilitated and was reported to feel comfortable. The six students ranged in age from 7 to 17-years-old. Four were males and two were females. Two of the students, Betty and Brian, produced sentences with consistency. The facilitated messages of the other students consisted mostly of single word or yes-no responses (see Table 1).
Table 1
Educational Records Review Data

Based on school records and interview with parents

**Sean:**
**Chronological Age:** 10-3
**Motor Impairments:**
visual perception and motor planning deficits
**Diagnosis:**
Autistically Impaired (CARS=42; severely autistic)
**Intelligence Testing:** (Chronological Age at time of testing: 9-2)
Stanford-Binet
- Verbal Reasoning SAS: 40
- Abstract/Visual Reasoning SAS: 41
- Quantitative Reasoning SAS: not determinable
- Short-Term Memory: 43
**Communication Assessment:** (Chronological Age at time of testing: 9-2)
Receptive One-Word Picture Vocabulary Test: AE = 2-7
Expressive One-Word Picture Vocabulary Test: AE = 4-8
Informal Language Sample: most responses = one word

**Vineland Adaptive Behavior Scale:**
Administered to parents
(Sean's Chronological Age at time of assessment: 9-2)
Communication Domain: AE = 2-1
- Receptive: AE = 3-11
- Expressive: AE = 1-9
- Written: AE = 1-6
Daily Living Domain: AE = 3-3
Socialization Domain: AE = 1-10
Motor Skills Domain: AE = 4-11
- Gross Motor: AE = >5-11
- Fine Motor: AE = 4-5
Adaptive Behavior Composite: SS = 32; AE = 2-4

Administered to mother (primary facilitator)
(Sean's Chronological Age at time of assessment: 10-3)
Communication Domain: SS = 51; AE = 2-1
- Receptive: AE = 4-2
Table 1--Continued

Expressive: AE = 1-9  
Written: AE = 5-8  
Daily Living Domain: SS = 21; AE = 3-8  
Socialization Skills Domain: SS = 47; AE = 2-3  
Motor Skills Domain: SS = Est71; AE = 4-2  
Gross Motor: AE = > 5-11

Fine Motor AE = 3-10

Adaptive Behavior Composite: SS = 37; AE = 2-8

Maladaptive Behaviors:
temper tantrums (yells, SIB, aggressions)

Mark:  
Chronological Age: 17-0  
Motor Impairments: None noted  
Diagnosis: Autistically Impaired, Seizures  
Intelligence Testing: (Chronological Age at time of testing: 14-4)  
Stanford Binet Form L-M:  
CA 14-4, MA 3-3, IQ < 30  
Developmental Test of Visual-Motor Integration:  
SS = 55, AE = 4-3  
Wide Range Achievement Test:  
No score was earned  
Peabody Picture Vocabulary Test:  
Raw Score = 14, AE = 2-5

Communication Assessment:  
Receptive-Expressive Emergent Scale:  
Receptive Language AE = 2-3 to 2-6  
Expressive Language AE = 1-8 to 1-10  
Goldman Fristoe Test of Articulation:  
Multiple misarticulations and omission in all parts of the word  
Verbalizations generally mono-syllabic  
Tendency to omit beginning consonant of words  
Long and short vowels generally well pronounced; difficulties with consonant sounds

Vineland Adaptive Behavior Scale: (Chronological age at time of assessment: 17-0)
Table 1--Continued

Administered to teacher (primary facilitator)

Communication Domain: SS <20; AE = 1-9
   Receptive: AE = 3-1
   Expressive: AE = 1-5
   Written: AE = 4-3

Daily Living Domain: SS <20; AE = 3-10

Socialization Skills Domain: SS <20; AE = 1-7

Motor Skills Domain: SS = Est65; AE = 3-10
   Gross Motor: AE = 3-4
   Fine Motor AE = 4-2

Adaptive Behavior Composite: SS <20; AE = 2-5

Administered to mother

Communication Domain: SS <20; AE = 2-3
   Receptive: AE = 4-1
   Expressive: AE = 1-9
   Written: AE = 5-11

Daily Living Domain: SS <20; AE = 4-9

Socialization Skills Domain: SS <20; AE = 1-9

Motor Skills Domain: SS = Est86; AE = 5-2
   Gross Motor: AE >5-11
   Fine Motor AE = 4-8

Adaptive Behavior Composite: SS <20; AE = 2-11

Maladaptive Behaviors:
Tends to sit in one place too long
Unmotivated
Easily distracted

Betty:
Chronological Age: 12-4
Motor Impairments: None
Diagnosis:
Severly Mentally Inpaired
four or more standard deviations below mean
Intelligence Testing:
CA = 11-10
Leiter International Performance Scale
   MA = 2-9
   IQ = 23
Bayley Mental Scale
Table 1--Continued

Functioning Level: 22.5-23.5 months
Peabody Picture Vocabulary Test (12-4)
  raw score = 12
  AE = 2-4

**Communication Assessment: (CA = 12-4)**
Receptive Expressive Emergent Language Scale
  Receptive Language AE = 20-22 months
  Expressive Language AE = 18-20 months
  Combined Language AE = 19-22 months
Expressive One Word Vocabulary Test
  Raw Score = 6
  AE = 2-2

**Vineland Adaptive Behavior Scale: (CA = 12-11)**
Administered to teacher
Communication Domain: SS = 20; AE = 1-11
  Receptive: AE = 4-0
  Expressive: AE = 1-8
  Written: AE = 4-0
Daily Living Domain: SS <20; AE = 2-9
Socialization Skills Domain: SS = 23; AE = 1-5
Motor Skills Domain: SS = Est40; AE = 2-0
  Gross Motor: AE = 3-11
  Fine Motor AE = 1-3
Adaptive Behavior Composite: SS <20; AE = 2-4

**Maladaptive Behaviors: (CA = 11-10)**
Vineland Social Maturity Scale:
  doing all tasks at the 1-2-year-old level except
  playing with other children, 2-3-year-old level;
  highest score in self-care and toileting

Infrequent aggressions (e.g., slapping).

**Margaret:**
**Chronolocal Age:** 16-3
**Motor Impairments:** hand dominance unclear
**Diagnosis:** Autistically Impaired; Severely Mentally Impaired
**Intelligence Testing:**
Peabody Picture Vocabulary Test (CA: = 15-0)
  Raw Score = 6
Leiter International Performance Scale (CA = 15-1)
  MA = 4-9
  IQ = 20

Communication Assessment: (15-1)
Test for Auditory Comprehension of Language
  Word Classes and Relations: Raw Score = 4; AE = 2-5
  Grammatical Morphemes: Raw Score = 1; AE = 2-5
  Elaborate Sentences: Raw Score = 5; AE = 3-0 to 3-3
  Total: Raw Score = 10; AE = 2-7 to 2-9

Vineland Adaptive Behavior Scale: (CA = 16-2)
Administered to mother
Communication Domain: SS <20; AE = 2-0
  Receptive: AE = 3-11
  Expressive: AE = 0-10
  Written: AE = 7-10
Daily Living Domain: SS <20; AE = 2-0
Socialization Skills Domain: SS <20; AE = 1-5
Motor Skills Domain: SS = Est113; AE = >5-11
  Gross Motor: AE = >5-11
  Fine Motor AE = >5-11
Adaptive Behavior Composite: SS <20; AE = 2-8

Administered to teacher (primary facilitator)
Communication Domain: SS <20; AE = 1-9
  Receptive: AE = 4-2
  Expressive: AE = 0-11
  Written: AE = 5-11
Daily Living Domain: SS <20; AE = 5-2
Socialization Skills Domain: SS <20; AE = 1-10
Motor Skills Domain: SS = Est86; AE = 5-2
  Gross Motor: AE >5-11
  Fine Motor AE = 4-8
Adaptive Behavior Composite: SS <20; AE = 2-11

Maladaptive Behaviors:
  runs away; compulsive behaviors and sounds
Joe:
Chronological Age: 17-4
Motor Impairments: None
Diagnosis: Autistically Impaired

Intelligence Testing: (CA = 14-7)
Stanford Binet (Form L-M): CA = 14-8; MA = 3-10; IQ = 30
Peabody Picture Vocabulary Test: Raw Score = 15; AE = 2-6
Beery Developmental Test of Visual-Motor Integration
AE = 5-6; SS = 55; Percentile = 1

Wide Range Achievement Test
Reading: Raw Score = 15; Grade Equivalent < 3
Spelling: Raw Score = 2; Grade Equivalent < 3
Arithmetic: Raw Score = 5; Grade Equivalent < 3

Communication Assessment: (CA = 14-7)
Test for Auditory Comprehension of Language
Word Classes and Relations: AE = 2-7 to 2-9
Grammatical Morphemes: no basal established
Elaborate Sentences: no basal established
Total Score: AE 2-5 to 2-7

Expressive One-Word Picture Vocabulary Test-Revised
Raw Score = 16; AE = 3-0

Vineland Adaptive Behavior Scale: (CA = 17-4)
Administered to teacher (primary facilitator)
Communication Domain: SS <20 ; AE = 2-3
Receptive: AE = 1-10
Expressive: AE = 1-10
Written: AE = 6-7

Daily Living Domain: SS <20; AE = 3-2
Socialization Skills Domain: SS <20; AE = 1-4
Motor Skills Domain: SS = Est51; AE = 3-0
Gross Motor: AE = 2-5
Fine Motor AE = 3-10

Adaptive Behavior Composite: SS <20; AE = 2-3
Administered to parents
Communication Domain: SS <20; AE = 2-11
Receptive: AE = 3-9
Expressive: AE = 2-4
Written: AE = 5-10

Daily Living Domain: SS = 36; AE = 6-4
Table 1--Continued

Socialization Skills Domain: SS <20; AE = 2-1
Motor Skills Domain: SS = Est97; AE = 5-9
  Gross Motor: AE = 5-3
  Fine Motor AE > 5-11
Adaptive Behavior Composite: SS = 23; AE = 3-9

**Maladaptive Behaviors:**
Hand biting when agitated.
Stereotypic body rocking and echolalia.

**Brian:**
**Age:** 7-11
**Motor Impairments:** Profound motor impairment as a result of post-meningeal encephalopathy
**Diagnosis:** Severely Mentally Impaired
**Intelligence Testing:**
Peabody Picture Vocabulary Test
**Communication Assessment:**
Considered Untestable
**Vineland Adaptive Behavior Scale:**
Administered to mother (10-92)
Communication Domain: SS = 52; AE = 3-10
  Receptive: AE = 3-10
  Expressive: AE = 2-7
  Written: AE = 4-0
Daily Living Domain: SS < 20; AE = 1-8
Socialization Skills Domain: SS = 54; 3-1
Motor Skills Domain: SS = 54; AE = 1-2
  Gross Motor: AE = 0-3
  Fine Motor: AE = 0-2
Adaptive Behavior Composite: SS = 39; AE = 2-10

**Maladaptive Behaviors:**
None

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CA = Chronological Age
AE = Age Equivalence
In each case there was at least one person who believed the child could communicate using FC. For each child it was possible to procure the participation of the child’s most successful facilitator. Based on the reports of each of those facilitators, the most successfully facilitated children, in terms of consistency, quality, variety, and quantity of facilitated messages were Brian, Betty, and Joe; while the least successful were Sean, Margaret, and Mark.

Procedures

Each child was facilitated by his or her most successful facilitator. That adult was instructed to conduct two regularly scheduled FC sessions per school day with their student throughout the course of the study.

For most participants, the study design consisted of a Pre-Baseline phase, followed by a Test phase, followed by a second Post-Baseline phase. The Post-Baseline phases were not conducted with Betty and Brian. During all phases the facilitators conducted FC sessions with a tape recorder present so that audio-taped versions could be made of the facilitated messages. In the Test phase, just before the time of their regularly scheduled FC session, each child was removed from the presence of their facilitator to experience a salient out-of-classroom experience. This provided a controlled experience about which the child would be likely to communicate. Following the salient experience, the child returned to the facilitator for an FC session. The experimenter provided the facilitator with a written page of either True, Misleading, or No information about the nature of
the event experienced by the child. During the scheduled FC Sessions, that followed the out-of-classroom experience, the facilitator questioned the child about the out-of-classroom experience.

Before the Test phase facilitators were informed that some sessions might involve deception. They had the choice of being excluded from that pool if they so wished. All agreed with the deception condition.

Following the Test phase each facilitator was debriefed about their child’s experiences and reminded of the resulting facilitated messages. They were then to conduct one more Baseline phase of FC sessions. These were audio-taped as before.

**FC Samples**

**Baseline**

The Pre-Test Baseline consisted of each child experiencing a number of 10 to 15-minute FC sessions scheduled over the week before the testing sessions. Facilitators were instructed (Appendix D) to schedule these sessions at times when the children would normally be approached for a FC session, and to make them as natural as possible. The number of Pre-Test Baseline sessions experienced by each child ranged from two to six.

Sessions began when the facilitator turned on a tape recorder to make an audiotape of the session. Each time the child pointed to a letter the facilitator
read that letter out loud in order to create an audio recording of all the communications produced by the child. All letters indicated by the child were to be read. In this way a record of the exact sequence of letters selected by the children was produced.

**Out-of-Classroom Experience**

Following the Pre-Baseline sessions each child was exposed to enjoyable and highly salient activities in another room of the school. The content of these experiences were determined from information gleaned from the Structured Interviews and Baseline sampling. Four 21.5 x 28 cm cards, each printed with a predetermined "Keyword" about the activity, were displayed. These were to help reduce the use of idiosyncratic or grossly misspelled labels and thus make more salient the times when children really were communicating. The children then had an opportunity, via FC, to report to their facilitators about what happened.

In the cases where the main facilitator was a parent, these sessions were conducted at home, the most natural environment for FC, during the time when the child was normally there. Such was the case for Brian (all sessions at home) and Sean (approximately one half of the sessions at home). In order that these children have "out-of-classroom" experiences that could not be directly known by the parents, these parents were required to either leave the house during the "out-of-classroom" experience or, remove themselves to a room in the house where they could not hear the activity.
At approximately the same time of the day when the FC sessions had been conducted during the Pre-Baseline sessions, the principal investigator approached the child. Accompanied by the classroom teacher, or child’s parent, he said to the child: "Hello, [child’s name], my name is Jorge. We have something planned for you in the _____-room that we think will be fun for you. Please come with me so we can go to the _____-room." The principal investigator then attempted to remove the child from the room, leading the child by hand if necessary. When a child resisted, the principal investigator allowed the child an opportunity to finish what he or she was doing before making a second attempt. If the child still refuses, the teacher’s, or parent’s, assistance was sought. Further refusal result in the postponement of the session. Only Sean refused to participate in two sessions that were conducted at home. Provided the child’s cooperation, he or she accompanied the investigator to the activity. On their way nothing else was said to the child. On a number of occasions the child remained in the home-room for the out-of-classroom activity while the rest of the class and facilitator left.

The out-of-classroom experience began with the researcher directing the child’s attention to the activity and attempting to engage the child in it. Participants never needed to be physically turned to orient toward the activity. Giving the item to the child or placing it in front of the child was sufficient. As the principal researcher talked to the child and discussed the activity, several (at least five) references were made to the Keywords that were displayed on four 21.5 x 28 cm cards (each with a Keyword written on it). The Keyword cards were
displayed in a semi-circle above and beside the activity. Every time a key word was mentioned the child’s attention was drawn to the appropriate card. The child’s exposure to the event lasted at least ten minutes. The out-of-classroom experiences were audio-taped. Brief descriptions of each participant’s out-of-classroom experiences are provided in Appendix E.

The principal investigator then accompanied the child to the facilitator for the child’s regularly scheduled 15-minute FC session. Before commencing the session the facilitator was given the written Instructions to the Facilitator (Appendix C). There were no vocal communications between the primary researcher and the facilitator about the out-of-classroom experience. For the sessions where the facilitators are provided with information about the children’s out-of-classroom experiences, these instructions included brief statements about the content of the child’s experiences. When a facilitator receives True Information about the out-of-classroom event the statement contained the true nature of the child’s experience and the four Keywords. For the sessions where a facilitator receives Misleading or Information, the statement contained false Keywords and False Information about the nature of the event. There were no statements and no Keywords provided to the facilitators for sessions where the facilitators had No Information about the out-of-classroom experiences. The facilitators were instructed not to share information that had been provided to them with the children. The experimenter left the facilitator and child alone before the facilitation session began in order to avoid influencing or negatively
affecting the communications of the child.

Following each of these FC sessions the facilitators completed the items on the second page of the Instructions to the Facilitator. These items required the facilitators to rate their confidence in the veracity of their children’s communication, to rate the accuracy of the children’s messages, and to provide a short summary of what was communicated. When the experimenter returned to the classroom following the final Test Session, he debriefed the facilitator about the study as it pertained to that facilitator’s child.

The Review Panel (1989) determined that very few sessions were required to demonstrate competency using the message-passing technique. Therefore, each child, except Brian and Sean, experienced three of each type of session—True Information, False Information, No Information—for a total of nine Test sessions. Brian experienced two of each, while Sean had an extra No Information condition. The ordering of these sessions was decided three at a time by random selection without replacement.

Return to Baseline

Following each child’s final Test Session the facilitators were debriefed. The primary researcher informed each facilitator of her child’s true out-of-classroom experiences and reminded her of the corresponding messages that were conveyed through FC. Facilitators were then instructed to conduct 10 Post-Test Baseline sessions over five days as they did during the original Baseline (i.e., same
daily times, audio-taping, etc.). Brian's and Betty's facilitators were unable to conduct these Post-Test Baseline sessions. The rest of the facilitators conducted between three and six Post-Test Baseline sessions with their children.

**Audio-tape Transcriptions**

The audio-taped facilitated messages were transcribed into written records. The principal researcher listened to the audiotapes and made typed transcripts of the exact sequence of letters pointed to by the children and the statements and questions expressed by the facilitators. Since the Cannon Communicators produced print-outs of the messages typed into them, any errors in transcribing Margaret's and Betty's sessions were corrected by examining the print-outs. Nine (11%) of the audio-taped messages were selected on the basis of the quality of their recording for checking inter-observer reliability. The principal investigator selected the recorded messages with the poorest sound quality for this reliability check. Inter-observer agreement was estimated using the formula: agreements /(agreements plus disagreements). The rate of agreement between the primary investigator and an undergraduate judge, who was kept blind to the experimental conditions, was 98% (range: 97% - 100%).

**Transforming Letter Patterns to Words**

Undergraduate judges then viewed the transcripts. These judges were kept blind to the type of information the facilitator had received and the actual nature
of the out-of-classroom experiences. They examined the facilitated messages for any letter combinations that appeared to be sensible words, and recorded the correctly spelt versions of those words. Two judges examined each transcript. To avoid being conservative, any word found in a transcript by at least 50% of the judges evaluating it was accepted. Inter-observer agreement amongst the judges on this word search averaged 84% (range: 30% - 100%, n = 67 sessions) for transcripts produced from the Test Sessions, using the method of agreements divided by the total number of words found (agreements plus disagreements). The same method of estimating inter-observer agreement was used to determine that the average level of agreement for the word-search of the transcripts produced from the Baseline Sessions was 91% (range: 78% - 100%) based on seven, or 22%, of the Baseline sessions that had no Canon printouts.

**Correspondence Ratings of the Facilitated Transcripts**

The same undergraduate judges who searched the transcripts for words, rated the transcripts of the facilitation sessions. They were presented with pages that each contained a transcript of a FC session and a description of an out-of-classroom event that included a list of four Keywords. First, as described above, they examined the transcript for words. Next, they were trained by the principal investigator using the instructions found in Appendix F. He trained the judges to evaluate the level of agreement and concurrence between each facilitated message and the corresponding description of the out-of-classroom experience.
Ratings were made on a seven-point scale ("one" indicated no agreement or concurrence and "seven" indicated a very high degree of agreement). Two judges rated each facilitated message. The correlation between the two ratings was $r = .86$ ($n=66$).

Correspondence ratings were made between the facilitated messages and four types of descriptions of the out-of-classroom events (see Table 2): (1) the real description of the child's experience that the facilitator had read (given under the True-Information/Real Description condition, TI/RD), (2) the real description of the child's experience when the facilitator had received No Information (given under the No-Information/Real Description condition, NI/RD), (3) the false description of the child's experience that the facilitator had read (given under the False-Information/False Description condition, FI/FD), and (4) the real description of the child's experience, when the facilitator had received False Information (given under the False-Information/Real-Description condition, FI/RD).
Table 2
Facilitated Messages Compared With Four Types of Descriptions of the Out-of-Classroom Events

Comparisons made by the undergraduate judges in the Correspondence Ratings of the facilitated messages.

<table>
<thead>
<tr>
<th>1. TRUE-INFORMATION (Tl/RD)</th>
<th>2. NO-INFORMATION (NI/RD)</th>
<th>3. FALSE-INFORMATION (Fl/FD)</th>
<th>4. FALSE-INFORMATION (Fl/RD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The real description of the event that was also read by the facilitator.</td>
<td>The real description of the event when the facilitator did not receive any information.</td>
<td>The false description of the event that was also read by the facilitator.</td>
<td>The real description of the event when the facilitator had been given false information.</td>
</tr>
</tbody>
</table>
RESULTS

Correspondence Ratings

The mean of the ratings made by the judges is presented in Table 3 and Figure 1. A repeated-measures mixed-model ANOVA (with subjects as a random factor) was performed on the judges' ratings. The type of information received by the facilitators had a significant effect on judges' ratings of the ensuing facilitated messages ($F = 7.51; df = 3, 15; p = .003^1$). The highest correspondence ratings were obtained under True-Information/Real-Description and False-Information/False-Description conditions (TI/RD mean = 3.39, FI/FD mean = 3.04). The lowest ratings occurred under the No-Information/Real-Description condition (NI/RD mean = 1.19). When facilitated messages, obtained under False Information conditions, were compared with the real descriptions of the child's experience (the False-Information/Real-Description condition), the correspondence ratings were also observed to be low (FI/RD mean = 1.50).

To compare differences among the obtained means, Tukey HSD tests were performed. The mean correspondence rating was significantly higher in the True-Information/Real-Description condition than in the No-Information/Real-

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1 Using Greenhouse and Geisser's (in Howell, 1992) conservative recommendation, degrees of freedom were adjusted to 1, 5 which has a critical $F$ value = 6.61 at $p < .05$. This value was still exceeded by the obtained $F$-ratio.
Table 3
Summary of the Correspondence Ratings

<table>
<thead>
<tr>
<th>Participant</th>
<th>TI/RD</th>
<th>NI/RD</th>
<th>FI/RD</th>
<th>FI/FD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joe</td>
<td>2.0</td>
<td>1.0</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Mark</td>
<td>3.67</td>
<td>1.33</td>
<td>1.17</td>
<td>2.83</td>
</tr>
<tr>
<td>Margaret</td>
<td>3.33</td>
<td>1.33</td>
<td>1.17</td>
<td>3.33</td>
</tr>
<tr>
<td>Betty</td>
<td>1.33</td>
<td>1.0</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Sean</td>
<td>5.00</td>
<td>1.5</td>
<td>2.67</td>
<td>1.83</td>
</tr>
<tr>
<td>Ryan</td>
<td>5.00</td>
<td>1.0</td>
<td>2.00</td>
<td>5.25</td>
</tr>
</tbody>
</table>

Means: 3.39 1.19 1.50 3.04

E-test on difference among means: $F = 7.51$; df = 3, 15; $p = .003$.
According to Greenhouse and Geisser conservative adjustment to degrees of freedom: critical value of $F = 6.61$; df = 1, 5
Significant multiple comparisons with the Tukey HSD test (all df's = 4, 15; all p's < .05): $\text{TI/RD - NI/RD, } q = 8.00$; $\text{TI/RD - FI/RD, } q = 4.73$; $\text{FI/FD - NI/RD, } q = 4.62$.

Description ($q = 8.00$) and False-Information/Real-Description ($q = 4.73$) conditions. Furthermore, the mean rating obtained during the False-Information/False-Description condition was higher than that obtained from the No-Information/Real-Description condition ($q = 4.62$; all df's = 4, 15; all p's < .05).
Figure 1. Correspondence Ratings.

In other words, the facilitated messages receiving the highest correspondence ratings were observed during conditions when facilitators were provided with information about the child's experience. When facilitators had No Information about the child's experience the facilitated messages had very low correspondence to the child's experience. Messages produced under False Information conditions corresponded closely to the false information given to the facilitator and not to the real experience of the child.
Keywords

A summary of a count of the Keywords that appeared in the facilitated messages is presented in Table 4 and Figure 2. These data represent the average number of Keywords reported by the two judges who scored each message. A repeated-measures, mixed-model ANOVA (with subjects as a random factor) was performed on the Keyword counts. As with the judge’s ratings, the type of information received by the facilitators had a significant effect on the number of Keywords that appeared in the facilitated messages ($F = 9.36; \text{df} = 3, 15; p = .001^2$). When facilitators received True Information, 17 of the real Keywords that the children had experienced were observed in the facilitated messages (TI/RD). No real Keywords appeared in any of the facilitated messages produced under conditions when facilitators received No Information about the children’s out-of-classroom experiences (NO/RD). Under the False Information condition two real Keywords were observed in the facilitated messages that had also been presented to two of the children during their out-of-classroom experiences (FI/RD), however 14.5 false Keywords, that had appeared in the false descriptions read by the facilitators, were observed (FI/FD).

Tukey HSD multiple comparison tests among the observed means produced the following results. More real Keywords were observed in the facilitated messages produced under the True Information condition than under any of the other three conditions (TI/RD > NO/RD > FI/RD > FI/FD). When facilitators were given No Information, no real Keywords were observed. Under False Information two real Keywords were observed, however, 14.5 false Keywords were observed (FI/RD > FI/FD). No real Keywords were observed under True Information conditions (TI/RD > NO/RD > FI/RD > FI/FD).

Using Greenhouse and Geisser’s (in Howell, 1992) conservative recommendation, degrees of freedom were adjusted to 1, 5 which has a critical $F$ value = 6.61 at $p < .05$. This value was still exceeded by the obtained $F$-ratio.
Table 4
Summary of the Keywords

<table>
<thead>
<tr>
<th>Participant</th>
<th>TI/RD</th>
<th>NI/RD</th>
<th>FI/RD</th>
<th>FI/FD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joe</td>
<td>2.5</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Mark</td>
<td>4.5</td>
<td>0</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>Margaret</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Betty</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sean</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Brian</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
<td>0</td>
<td>2</td>
<td>14.5</td>
</tr>
</tbody>
</table>

F-test on difference among means: $F = 9.36$; df $= 3, 15$; $p = .001$. According to Greenhouse and Geisser conservative adjustment to degrees of freedom: critical value of $F = 6.61$; df $= 1, 5$.

Significant multiple comparisons with the Tukey HSD test (all df's $= 4, 15$; all $p$'s $< .05$): TI/RD - NI/RD, $q = 6.04$; TI/RD - FI/RD, $q = 5.33$; FI/FD - None, $q = 5.15$; FI/FD - FI/RD, $q = 4.44$.

messages produced during the True Information condition than either the No Information (TI/RD vs. NI/RD, $q = 6.04$) or False-Information/Real Description (TI/RD vs. FI/RD, $q = 5.33$) conditions. From the messages facilitated during the False Information condition there were more false Keywords observed than real Keywords (FI/FD vs. FI/RD, $q = 4.44$; all df's $= 4, 15$; all $p$'s $< .05$).
Figure 2. Number of Keywords.

As another way of describing the Keyword data, Keywords that appeared in the information provided to the facilitators also tended to appear in the facilitated messages. When the facilitators were not provided with any information about the children’s out-of-classroom experiences not a single Keyword was produced through FC. Facilitated messages produced under False Information conditions contained the false Keywords the facilitators had read rather than the true Keywords that had accompanied the children’s out-of-classroom experience.
Quality of Facilitated Messages

In order to determine how the Quality of facilitated messages was affected by the testing conditions a measure of Quality was calculated from the transcripts. The estimate of Quality was based on the following procedures. For each FC session a count was made of the number of letters in the correctly spelt versions of the words found by the judges. This number was divided by the total number of letters in the transcript. Quality was defined as the quotient of this procedure. High levels of Quality meant that facilitated messages contained mostly correctly spelt words. For example, a Quality measure of 100% indicated that all of the words in the message were spelled correctly. When Quality was measured to be 0%, the facilitated message consisted of a string of functionally random letters. Fifty percent Quality indicated that one half of the letters in a facilitated message were superfluous.

Figures 3 to 8 present the observed Quality measure for each participant. Beginning with Mark's data (Figure 3), Quality was observed to vary considerably across all sessions. It fell steadily across the Pre-Baseline sessions from about 95% to 0% and averaged at less than 20% over the three Post-Baseline sessions--after his facilitator had been debriefed about the results of the test sessions. Across the Test sessions there was considerable fluctuation too, but Quality

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3Precision measures greater than 100% were possible if a facilitated message contained abbreviations or word fragments that were translated into full words by the judges.
Figure 3. Proportion of Meaningful Letters in Mark's Messages.

tended to be lowest in the No Information condition. There appeared to be no difference between the Quality measured in the Test sessions and that measured in the Baseline sessions.

Betty’s, Brian’s, and Sean’s Quality measurements are displayed in Figures 4 to 6. The observed Quality of Betty’s and Brian’s messages remained at high levels throughout the study. This meant that Betty’s and Brian’s facilitated messages contained few superfluous letters and were almost completely and consistently made up of correctly spelt words. Similarly, Sean’s messages carried few extra or incorrect letters, however, across the test conditions (especially the No Information conditions) the measured level of Quality tended to be lower.
Figure 4. Proportion of Meaningful Letters in Betty’s Messages.

Figure 5. Proportion of Meaningful Letters in Brian’s Messages.
Figure 6. Proportion of Meaningful Letters in Sean’s Messages.

Margaret’s and Joe’s Quality data are presented in Figures 7 and 8. Their messages appeared to have slightly more Quality during the Baseline conditions than during the testing conditions. There was little difference among the Test conditions except that Quality seemed to be slightly higher in the False Information and slightly lower in the True Information conditions. Margaret’s facilitator reported that by the end of the Post-Baseline sessions Margaret required full

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4Margaret and her facilitator conducted seven Pre-Baseline FC sessions but only five are shown on her graph. Two of the sessions involved a computerized mathematics exercise that required only a numeric response that could not be analyzed using the formula described above. Therefore these data were not included on her graph.
hand-to-hand contact in order to be facilitated effectively. When the study had begun Margaret had required only a slight touch to the elbow or the resting of her facilitator’s finger in the palm of her hand.

Sean

The general pattern of results found with the other participants of this study was not altogether replicated with Sean. Recall that Sean’s FC was mostly limited to yes/no responses that were spelled out on an alphabet board. He only produced one Keyword, during a session in which his facilitator had been provided with True Information. Examining Table 3 reveals that Sean’s messages,
Figure 8. Proportion of Meaningful Letters in Joe’s Messages.

like those of the other participants, earned the highest ratings when his facilitator was given True Information about his out-of-classroom experiences (TI/RD mean = 5.00; range from 3 to 7) and the lowest rating when she received No Information (NI/RD mean = 1.19; range from 1 to 3). However, the facilitated messages produced when his facilitator received False Information were rated more highly when compared with the real description of his out-of-classroom experiences (FI/RD mean = 2.67; range from 1 to 7) than when compared with the false description given to his facilitator (FI/FD mean = 1.83; range from 1 to 4). This suggested that Sean may have demonstrated independently-produced messages at least during some of the False Information sessions. In order to explore this
possibility his yes/no responses to his facilitator's questions were further analyzed.

Two-by-two contingency tables of the frequency distributions of yes and no responses were created for each condition (BL's, True, None, False and False Message) and chi-squares calculated for each distribution. Those tables, their expected frequencies, and resulting chi-squares can be seen in Table 5. Chi-square values were high for the two Baseline conditions (Pre-BL $X^2 = 47.69$, Post-BL $X^2 = 22.97$) and True-Information/Real Description condition ($X^2 = 18.0$). These chi-square values were all significant (at $p < .005$ the critical value of $X^2 = 7.88$; $df = 1$) indicating a high level of correct responding during these conditions. Stated another way, Sean got 65 out of a possible 71 correct responses during the Pre-Test Baseline, 18 out of 18 correct responses during the TI/RD sessions, and 28 out of 30 correct during the Post-Test Baseline. Thus, during the Baseline and True Information conditions Sean's facilitated, yes/no responses were highly accurate.

During the No-Information/Real Description condition Sean's accuracy dropped to chance level ($X^2 = 0.087$; $p > .05$, $df = 1$). During these sessions correctness of responding was 21 out of 41. However, in the False Information conditions his answers concurred more closely with the Real Descriptions of his out-of-classroom experiences (FI/RD $X^2 = 5.79$; $p < .05$, $df = 1$) than with the False Descriptions that had been provided to his facilitator (FI/FD $X^2 = 0.049$; $p > .05$, $df = 1$). An inspection of the False Information sessions disclosed that Sean did especially well on the last day of testing when he responded correctly to
<table>
<thead>
<tr>
<th>Sean’s Responses</th>
<th>CORRECT ANSWERS</th>
<th>TOTAL</th>
<th>$X^2 = \ldots$</th>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td>NO</td>
<td></td>
</tr>
<tr>
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<td>42 (28.5)</td>
<td>2 (15.5)</td>
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<tr>
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<td>4 (17.49)</td>
<td>23 (9.5)</td>
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</tr>
<tr>
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<td>71</td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
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<td>4</td>
<td>18</td>
</tr>
<tr>
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<td></td>
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</tr>
<tr>
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<td>NO</td>
<td></td>
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Table 5--Continued

**FALSE INFORMATION**

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<td>23</td>
<td>23</td>
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<td></td>
<td>(1.9)</td>
<td>(21.1)</td>
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<tr>
<td>Total</td>
<td></td>
<td>3</td>
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</tbody>
</table>

\[X^2 = 5.79\]

**CORRECT ANSWER (ACCORDING TO FALSE INFORMATION)**

<table>
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<tr>
<th>Sean's responses</th>
<th>CORRECT ANSWER</th>
<th>YES</th>
<th>NO</th>
<th>TOTAL</th>
</tr>
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<td>5</td>
<td>8</td>
<td>13</td>
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<tr>
<td></td>
<td></td>
<td>(4.69)</td>
<td>(8.31)</td>
<td></td>
</tr>
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<td>8</td>
<td>15</td>
<td>23</td>
</tr>
<tr>
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<td></td>
<td>(8.31)</td>
<td>(14.69)</td>
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<tr>
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<td>36</td>
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</table>

\[X^2 = 0.05\]

**POST-BL**

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<th>TOTAL</th>
</tr>
</thead>
<tbody>
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<td>14</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(7.46)</td>
<td>(8.53)</td>
<td></td>
</tr>
<tr>
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<td>14</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5.44)</td>
<td>(7.46)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
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<td>16</td>
<td>30</td>
</tr>
</tbody>
</table>

\[X^2 = 22.97\]
all nine (two yes's, seven no's) questions of the final False Information session. Overall, Sean's yes/no responses in the False Information condition correctly fit the Real Description of his out-of-classroom events 26 out of 36 times while they fit False Description presented to his facilitator only 20 out of 36 times. Therefore, Sean appears to have succeeded in responding independently of his mother's influence at least during a few of the False Information sessions.

Betty

Analysis of Betty's communicative abilities under FC were complicated by resistance to the testing protocol described above. Several comments appeared in her facilitated messages that she "hate[d] being tested" and "hat[ing] people who test". Very little content of her messages had anything to do with the out-of-classroom activity in which she had participated, except for one minor artifact. Unbeknownst to Betty's facilitator, in four of the nine out-of-classroom experiences Betty accompanied the principal investigator to her home classroom while the other five experiences occurred in another classroom or outdoors on the swing. These sessions had not been randomly ordered and only occurred as a result of the principal investigators observation, after the first day of testing, that the only tangible information in Betty's facilitated messages pertained to having returned to her homeroom. Overall, six of her facilitated messages claimed she had returned to her homeroom. A contingency table of this analysis is shown in Table 6. As can be seen, the obtained values across the cells of this table do not
deviate markedly from the distribution expected by chance alone. Another way of stating these results is that Betty’s facilitated messages contained correct information about whether or not she had returned to her homeroom only three of nine times.

Much frustration and anger was often expressed in Betty’s messages with people who questioned her ability. However, Betty was consistently well tempered during her out-of-classroom sessions. She smiled, verbalized, showed her dollar bills, and eagerly participated in all of the activities with the primary investigator. On occasion he took her hand and attempted to facilitate her, while indicating the Keywords, and found no resistance. On one occasion Betty took the principal investigator’s hand to facilitate him! Never was there any aggression or opposition during these sessions. However, Betty slapped or scratched her
facilitator three times during the course of the study. Furthermore, her facilitator reported that Betty had reported through facilitation that she liked the principal investigator. One would expect, if Betty was truly upset by being tested, then aggression and bad feelings would have been directed towards the principal investigator who was also the principal skeptic.

Mark

Another interesting observation occurred with Mark. During one out-of-classroom activity in which he drank a Pepsi he repeated "epsi" several times. He said "epsi" every time he was shown the Keyword Pepsi, and several times as he walked back to the classroom to facilitate with his teacher in a No Information session. On the audio-recording of the FC session one can hear Mark repeating "epsi" twice followed by a facilitated message about assembling a raccoon jigsaw puzzle. His facilitator dutifully followed the FC directive of favoring the facilitated message over any vocal ones.

Following each FC session facilitators had rated the accuracy of the child's message and their confidence in its veracity. Unfortunately, these ratings did not provide much useful information since facilitators frequently did not complete them. They have not been included in the analysis.
DISCUSSION

The present study evolved as a response to Biklen's (1992b) call for research on FC. It attempted to validate FC in a naturalistic setting and to assess FC abilities using single-subject methodologies on a group as well as individual level. To determine the source of the facilitated messages the level of contributions made by the child and the facilitator were compared. The FC abilities of six severely developmentally delayed children were assessed. Five children were unable to demonstrate FC abilities during conditions when No Information was given to the facilitator. The messages of one child, Betty, were, at best an unreliable method of communication. Furthermore, there was evidence from the messages of five participants that the facilitators had influenced the content of the facilitated messages. Only Sean's facilitator did not appear to have influenced the messages produced during at least some of the False Information sessions.

These results confirm other recent studies that have shown that apparent emerging FC abilities disappear under controlled conditions and that facilitators influence the facilitated messages (e.g., Eberlin, McConnachie, Ibel and Volpe, 1993; Hudson, Melita, and Arnold, 1993; Szempruch and Jacobson, in press; Wheeler, Jacobson, Paglieri, and Schwartz, 1993). In the present study FC was evaluated across three experimental conditions.
True Information Condition

The True Information condition tested for the non-specific effects of the testing environment. It was reasoned that little, or no differences in the level and quality of facilitation between the True Information and Baseline conditions would indicate that children were unaffected by, and not resistant to, the testing protocol. In all cases, the quality of facilitation presented during the True Information condition was at a level comparable to, or slightly below, that observed in the Pre-Test and Post-Test Baseline messages. Furthermore, Correspondence Ratings were generally high and Keywords most abundant during this testing condition. Betty, the only participant with very low Correspondence Ratings in the True Information condition, produced messages containing evidence of resistance both in the test sessions and in the Pre-Test Baseline. Thus, the True Information condition appears to have performed well in detecting resistance to the testing protocol, although it cannot be determined whether the source of the resistance was the child or facilitator.

Others doing controlled studies of FC are beginning to realize the importance of including a component to check for cooperation. For example, Moore, Donavan, Hudson, Dykstra, and Lawrence (1993) discontinued testing of two of their eight subjects after there were no meaningful responses during the preliminary condition of questions verbally posed by the facilitators. The addition of such a component in the evaluation of claims of FC is necessitated by proponents'
claims that individuals being facilitated are against being tested (e.g., Biklen, 1992b). Taking the Moore et al. (1993) study together with the present one it would appear that such resistance is relatively rare.

False Information Condition

This condition was included in the test protocol in order to determine the extent of the facilitator’s influence over the messages being produced through facilitation. This condition provided a head-to-head comparison between the child’s control and the facilitator’s control of the facilitated messages. Messages containing details about the child’s real experience indicated the child controlled the content of the facilitation, whereas facilitator control and influence was demonstrated by messages containing the False Information that the facilitator had read. In four cases there was clear evidence of facilitator control over the messages. (Betty’s case was more ambivalent, although anecdotal evidence, in the form of her behavior during the sessions and indications in her messages of going back to her room when she had gone outside, point to the likelihood of her facilitator having influencing her communications.) Only Sean was able to demonstrate control over the messages produced in this condition without his facilitator’s false knowledge influencing the outcome of the facilitation.

The level of facilitator influence was surprising considering that many of the facilitators made brief, seemingly cursory examinations of the information given them. Also most of the participating facilitators expressed reasonable
expectations for the potential of their students. For example, Mark and Margaret's facilitators stated that although FC was helpful, and they tried to keep an open mind about the potential of their students, it was unlikely that either child could eventually produce full sentences with correctly spelt words.

Two of the Keywords that had been presented to the children during their out-of-classroom experience were produced during the False Information condition. The appearance of these Keywords warrant closer examination since it suggested that some participants demonstrated limited facilitated abilities on these occasions. The reader will recall that the primary investigator interviewed facilitators in order to generate a list of possible out-of-classroom activities. These lists never exceeded 15 possibilities. Because each facilitator knew her child would experience one of those list items, chance alone may account for the appearance of one or two Keywords over the course of the 17 False Information sessions.

One incident involved the appearance of "COMPYHTER" in one of Mark's facilitated messages following a computer activity. His facilitator had asked if he had done anything else aside from eating a muffin. The rest of the exchange proceeded as follows:

Mark: COMPYHTER
Facilitator's question: You played computers?
Mark: NO
Facilitator's question: You would like to play computers?
Mark: YRETDS

This facilitated message received a correspondence rating of "1" from both judges.
The other Keyword, produced by Brian and his facilitator, occurred out of context. His facilitated message stated that he liked wrestling with "Dad" best, while his experience included viewing a photograph of his "Dad".

No Information Condition

Each child's true abilities were expected to be revealed in the No Information condition. We expected, since the facilitators had received No Information about the child's experiences, details that appeared in those messages about those experiences could only be attributed to the child or chance. None of the participants demonstrated independent control over the facilitated messages produced during the No Information sessions. This condition produced the lowest Correspondence Ratings of all of the conditions and no Keywords appeared in any of the messages.

Even in the No Information condition the possibility of facilitator influence was apparent. For example, previous to one of Brian's block of three testing sessions, Mutant Ninja Turtles had been playing on the television. The television was turned off before the first test session. The first two messages (produced under False and then True information conditions) contained content reflective of whatever information the facilitator had received. During the third session, a No Information condition, a message about viewing a turtle cartoon was facilitated. In this case it appeared that the messages produced by this facilitator-student dyad was under the control of the facilitator's knowledge of the child's
most recent experience. The effects upon the facilitator of such contextual cues, as weak as they may be, may provide a sources for any messages that appeared in the No Information condition.

Biklen (1990) has stated that some of the most severely handicapped students turn out to be the best performers with FC. The participants in the present study were all considered to be severely impaired by their school district. However, emerging FC abilities at the level suggested by Biklen did not appear. Instead the participants' level of communication, while facilitated, was generally commensurate with their level of developmental disability as measured by the school. The subject whose facilitated responses were at the lowest level of all of the participants was Sean. It may be more than just coincidental that he was also the only subject who succeeded in demonstrating independent skills during the False Information Condition, although, like the other participants, not during the No Information condition. Although the accuracy of his responses was much less variable when his facilitator had been given True Information, it seemed plausible that Sean demonstrated some skills in using yes-no responses. It was not clear whether he acquired these skills through the use of FC or by some other means. It is possible, as suggested by Jacobson and his colleagues (Jacobson, Eberling, Mulick, Schwartz, Szempruch, and Wheeler; in press), that FC may be helpful to some individuals. In Sean's case the prompting of his facilitator may have helped him remain focused on his communication board. However, for individuals such as Sean, well known behavioral techniques that involve prompting and prompt
fading (e.g., Lovaas, 1987, Matson and Mulick, 1991) may prove to be more effec-
tive in both the short and long run. In addition, these techniques are well re-
searched and eliminate questions regarding the source of the messages. The
benefits of the use of behavioral techniques with the severely developmentally dis-
abled have been reviewed by Berkson and Landesman-Dweyer (1977).

It should be noted that never were there any indications that the facilita-
tors intentionally manipulated the messages. However, if we accept the conclu-
sion that facilitators do influence the content of facilitated messages, then how
does this occur? Similar phenomena are known to occur when the controlling
variables of a verbal response are weak or vague, for example, Ouija boards, auto-
matic writing, and false memory syndrome. In addition, the facilitators in this
study appeared to be highly motivated educators and parents who, for obvious
reasons, were likely to find the communication of their disabled children highly
reinforcing. Skinner (1957) has suggested that these types of variables establish
situations "that strengthen behavior without respect to form" (p 265). Given that
the children being facilitated really have no control over the facilitated messages,
then candidates for sources of control over the "form" (i.e., content) of the mes-
sages become the effect upon the facilitators of the immediate environment,
deprivation, aversive stimulation, thematic groupings, word associations, and other
variables in the histories of the facilitators. Examples of all of these occurred in
the messages produced during the testing sessions.

An example of the effect of the immediate environment was discussed
above with regards to Brian and the facilitated message about Mutant Ninja Turtles. The effect of the immediate environment could explain Sean's success during the final day of testing in which he ate chocolate. His facilitator may have been affected by the smell of chocolate. Messages produced just before meal times (deprivation) tended to contain more references to food. As an example of word associations affecting the messages, when Betty's facilitator was informed that four words were presented to her during her out-of-classroom experience the following list appeared in her message "HAPPY, BRANDY, FANNY, HAGGED". As examples of thematic groupings, when facilitators became more familiar with the protocol and the types of activities experienced by the children, the messages tended to contain more references to those activities and fewer to unusual activities. For example, on the final day of testing, all of Joe's messages contained information about viewing various video tapes. Betty's messages often contained themes of resistance to being tested while her facilitator was fighting the school district to have her son included in a regular classroom on the basis of his facilitated communication. This final example is also an instance of information about the personal history of some facilitators controlling the content of the messages.

The validation procedures designed for this study had several strengths. First of all, since the FC repertoire of most of the participants ranged widely from basic yes/no responses to full sentences, the protocol seemed capable of evaluating a wide range of proportioned FC abilities. Secondly, these procedures appear
to have equally high face validity for proponents and detractors of FC, parents, teachers, and school district officials. Thirdly, although it was not a focus of this study, the protocol included a component—the debriefing of the facilitator following the test sessions—that may prove helpful in convincing facilitators that they do, unbeknownst to themselves, influence (even produce) the facilitated messages. At the least it encourages dialogue centering on the necessity of validating facilitated messages. The debriefing component could help to move highly motivated and dedicated professionals and parents towards other well researched and proven means of communication training for disabled individuals (e.g., Lovaas 1987; Matson and Mulick 1991). Fourthly, this study attempted to provide the children with highly salient and enjoyable experiences that would be memorable and about which they would hopefully be motivated to communicate. Fifthly, the sessions and experiences occurred in natural environments and involved materials that were familiar to the children. Sixthly, the protocol was simple to perform, and fewer sessions and conditions could conceivably render sufficient information regarding an individual's facilitated messages. Finally, it appears that the protocol is sufficiently sensitive to identify true-positives.

Some weaknesses of the present design and directions for further research and refinements follow. Although the protocol performed well in identifying resistance, it is not clear how one should proceed with such cases. It may not always be possible to discover alternative measurements within the same protocol, and, at any rate, those measures are themselves post hoc and subject to bias.
Secondly, although the debriefing of facilitators holds some promise as discussed above, the debriefing seemed to have had only limited impact upon the facilitators. All participants continued to be facilitated after the debriefing, although the quality of Mark's messages was lower following the debriefing and his facilitator said she would have to be more careful about her influence. Also Margaret required more physical support during FC after the debriefing.

Fourthly, it may be more effective and comforting for the child to have the out-of-classroom experience conducted by someone with whom the child is familiar. However, experience with working with DD children and training in methods of establishing rapport with children may overcome this potential obstacle. Furthermore, a dimension could be added to the protocol by having a few different people conduct the out-of-classroom experience. The facilitator would then have to learn the adult's name from the child.

Although it did not appear to be too much of a problem in this study the possibility exists that facilitators may observe some environmental cues about the true nature of the child's experience. For example, Play-Doh left under the finger nails of a participant, the smell of chocolate or food on one's breath or clothing, and food particles in the participant's mouth may all provide cues to the facilitators.

In summary, the results of the present study indicate that FC offers false hope for parents and educators. Alternatives do exist, however. Perhaps the most promising is the operant-based approach developed by Ivar Lovaas and his
colleagues (e.g., 1987 and The Me Book, 1981). The operant based approach emphasizes the shaping of skills with augmentative devices (e.g., picture boards), sign language, or speech. Training techniques involve the use of reinforcement, successive approximations to targeted expressive and receptive language skills, prompting, and the fading of prompts. The goal is that children obtain spontaneous, functional use of language skills. The use of operant methods has been highly effective with autistic children in particular (see Lovaas et al., 1987 and McEachin, Smith, and Lovaas 1993).

Contrast these methods with those of FC. FC is easy to implement and requires little training. Often the outcomes are dramatic and quick. Children previously thought to be mentally retarded are no longer retarded! Operant-based approaches require specialized training, and involve intensive and time consuming effort. Positive results, if they occur at all, are very slow to develop. Furthermore, these approaches include components of prompting (also included in FC) and prompt fading (ignored in FC) that dismiss questions of who controls the communication (also missing from FC). Furthermore, operant-based techniques continually and objectively evaluate the effectiveness of the techniques being used. It would be premature (in the best case) and detrimental (in the worst case) to displace operant-based techniques with FC.
Appendix A

Educational Records Review Form
Educational Records Review Form

Educational Records Review Form (p. 1)

Name: Age: Sex:

Diagnoses in Addition to Autism:

Motor Impairments:

Behavioral Problems:

Caregiver Arrangements

Family Composition:

SES of Family: ________________________________

Most Recent Intelligence Test

Name of Test: ___________________________ Test Date: __________

Results
Most Recent Communication Assessment

Name of Test: 

Test Date: 

Results
Appendix B

Structured Interview
Structured Interview

During the following interview I would like to ask you some questions about [child's name]. The questions have to do with what _____ likes and how s/he communicates. ________’s parents have provided me with their consent in order for me to ask you these questions.
Structured Interview (p. 1)

1. Potential reinforcers.
   1a. What are _____’s favorite foods, activities, people, animals, toys, objects, sounds, sensations (sight, smell, touch, hear), places? [Get examples of each, and order them from favorite to least favorite.]

1b. How stable are each of these reinforcers over time?

1c. Will _____ communicate that s/he wants something (e.g., a favorite activity, foods, routines, object attachments). If so, how?
Structured Interview (p. 2)

2. Communication Topics.
   2a. When _____ communicates what sorts of topics are discussed?

2b. Give examples from the following areas:
   i) requests:
      
   ii) protests:
      
   iii) labelling people and objects:
      
   iv) current events (what's happening now):
      
   v) past events (what happened yesterday, or this morning, etc.):
      
   vi) declarations about his/her own feelings:
      
   vii) questions:
Structured Interview (p. 3)

3. Do Vineland Adaptive Behavior Scale. Adapt it for the modality of speech. (i.e., Facilitators will respond via their knowledge of the child acquired through FC.)

4. Other means of communication. (This section will be included with the Vineland package.)
   Does _____ use any other means of communication outside of FC (e.g., speech, vocalizations, signs, gestures, independent use of the alphabet board, misbehavior, echolalia, stereotypy)?

5. Confidence in child's communication.
   5a. When _____ is being facilitated do you believe s/he is really communicating his/her own messages?

   5b. Rate this: 0-100% of the time.

   5c. What makes you think the messages are either valid or invalid?
Structured Interview (p. 4)

Next item is only for the facilitators.
6. Description of facilitation provided.
   6a. Describe the form of assistance provided to _______ when being facilitated by you. (Use the back of the page.)

   6b. Can _______ point to letters without your assistance?

   6c. What happens when _______ uses alphabet board without facilitation?
Appendix C

Characteristics of Participants
Characteristics of Participants

Sean. Sean was 10-years-old at the time of the study. He had been diagnosed as autistically impaired and as having a "visual perception and motor planning deficit". His Childhood Autism Rating Scale score of 42 placed him in the severely autistic range. At nine years of age he achieved SAS's on the Stanford-Binet in the low 40's with one scale, Quantitative Reasoning, being undetermined. At that age he was also given a communication assessment. He obtained age equivalence scores of 2-7 years for receptive vocabulary and 4-8 years for expressive vocabulary. The median length of his verbal responses was one word. Sean's mother had been administered the VABS twice, when he was age nine and 10 years. On both administrations he earned an Adaptive Behavior Composite standard score in the mid 30's, which translated into an age equivalence of approximately 2½ years. Sean received a Communication domain standard score in the low 50's on both administrations of the VABS. However, at 10 years of age his Written skills had developed to the 4-5 year level, whereas a year earlier they had been measured at the 1-6 year level. According to the VABS administrations, his fine motor skills were less well developed than his gross motor skills.

Sean's primary facilitator was his mother. She facilitated with her son by holding his hand behind the wrist and pulling back after every selection. Facilitated messages mostly consisted of yes or no responses on a hand drawn alphabet board created by Sean's mother. Examples of their communication included yes and no responses to inquiries about Sean's feelings, the content of a school book (e.g., science text), a story that had been read to him, or a recent activity he had engaged in with his mother. His mother reported that occasionally Sean could spell words when facilitated. Sean sometimes used speech, mostly in the form of single words, to make requests or label pictures. Sean's mother believed his communication was genuine about 75% of the time. She based this confidence on her having to provide him only a slight touch to the hand during facilitation. Furthermore, she reported that he could sometimes use his communication board without being facilitated (i.e., without touch).

Mark. Mark, aged 17 years, was diagnosed as autistically impaired. He was estimated to have an IQ of less than 30 on the Stanford-Binet. He had achieved a score on the Peabody Picture Vocabulary test that had an age equivalence of 2-4. Communication assessments had placed his receptive and expressive language at approximately 2-5 and 1-9 years, respectively. The VABS was administered to his mother and teacher-facilitator. Both of these adults trusted that Mark had some limited ability with FC. There were no major discrepancies between the scores from the interviews with his mother and his teacher. According to their responses he earned an Adaptive Behavior Composite standard score of less than 20 (AE = 2-5/2-11). His Communication
Domain score was at approximately the two-year-old level with Written Skills being the best developed of these (AE = 4-3/5-11).

Mark's speech was limited and tended to be echolalic. He had difficulty pronouncing consonants and tended to drop the first consonant from words. His primary facilitator was his teacher. She facilitated Mark by supporting him under the wrist and using a ______ spell checker. She believed his facilitated messages were accurate because often he correctly answered questions. However, sometimes he punched letters randomly and did not stop at the end of words. His parents believed he had abilities that could be drawn out of him by FC, although they considered these abilities to be limited.

Margaret. Margaret was 16-years-old at the time of the study. She had been diagnosed as autistically impaired and severely mentally impaired. Margaret had an estimated IQ of 20 (AE = 4-9). She had earned an age equivalence of 2-1 on the Peabody Picture Vocabulary Test. On the Test for Auditory Comprehension of Language she had earned an age equivalence of approximately 2-8. The VABS was administered to both her teacher-facilitator and her mother. They both agreed that Margaret had some very circumscribed language skills that FC seemed successful at uncovering. According to their interviews her written language abilities were the best developed of her language skills (AE = 5-11/7-10).

She had no functional speech and used a few signs lazily (e.g., signing "bathroom" with her hand held down at her waist). Her communicative strategies often included approaching a care-provider and leading that person by the hand. Margaret's teacher facilitated with her on a Canon Communicator. The facilitated messages were limited mostly to single word and yes-no responses. According to Margaret's teacher, she used to spell words without being facilitated on her communicator. At the beginning of the study she required a light touch to the elbow or the resting of her facilitator's finger inside the palm of her hand. By the end of the study her teacher reported that Margaret required full hand-to-hand contact during facilitation. Both her teacher and mother were convinced that Margaret could report her physical and emotional states, make choices, do school work, and report on her activities through facilitation. Her mother was certain that Margaret at least knew the letters of the alphabet.

Betty. During her participation in the study Betty was 12-years-old. Her IQ was estimated to be 23, with a MA equivalent to about two to 2½ years. Age equivalents from the various communication assessments that had been administered to her also placed her in the range of two to 2½ years. According to the VABS administered to her teacher, Betty's best developed abilities were her receptive and written communication skills (AE = 4-0 for both). She normally demonstrated poorly developed gross and fine motor skills (AE = 3-11 and AE = 1-3, respectively).

Her speech capabilities were limited and tended to be perseverative and difficult to understand except for people who were familiar with her repertoire. According to her teacher she recognized some words, such as her name and
familiar breakfast foods. Betty's facilitated messages usually contained full sentences and correctly spelt words. She facilitated on a Canon Communicator.

She was facilitated by a volunteer with whom Betty felt comfortable and trusted, and was reportedly her most proficient facilitator. Betty's facilitator strongly believed in FC. Based on FC, this facilitator had been successful in securing her own handicapped son's inclusion, with a facilitator, in a regular classroom. However, she had not provided consent for him to participate in this study.

Joe. Joe was a 17-years-old who belonged to the same classroom as Mark and shared the same facilitator. Intelligence testing had placed his IQ from as low as 30 to as high as 55. Communication assessments done almost three years previous to the time of the study placed Joe's abilities at the 2½ to three year range. The VABS was administered to both his teacher (facilitator) and his parents (who did not normally facilitate with him). There were some discrepancies in the results of these two administrations. Although his performance in all areas was below that of his age level, his parents reported his Daily Living and Motor skills (Age Equivalencies = 6-4 and 5-9, respectively) as being better developed than did his teacher (AE's = 3-2 and 3-0). However, Joe's parents and teacher agreed that within the Communication Domain his Written skills were his best developed by far.

His teacher facilitated with him using a _____ spell checker. According to his parents Joe had been a precocious child who could read the newspaper when he was about 3-years-old. At about the age of four or five he stopped talking and developed features of autism. At the time of the study his speech was well articulated but tended to be echolalic and rarely functional except when he was strongly motivated (e.g., to go to the bathroom, or escape from some unpleasant activity). He repeated lists of favorite television shows (e.g., "Dukes of Hazard") and favorite country-and-western stars. He could recite words from any of several country-and-western songs. His father said that he used to read to Joe. In his facilitated messages with his facilitator Joe usually produced phrases or single words. His teacher reported that sometimes these facilitated messages contained bizarre content or random letters. Topics discussed tended to be school work and past events. His facilitator believed the facilitated messages were really being produced by Joe because he used considerable force when making each letter selection.

Brian. Brian was seven years, four months old at the time of the study. He suffered from a profound motor impairment, the result of post-meningeal encephalopathy (quadriplegia), that left him with little or no voluntary control over his limbs. At the time of the study Brian was considered untestable for purposes of intellectual and communication assessment. The results of the VABS interview with his mother indicated that by far his best developed skills were in the Communication Domain (AE = 3-10). Of these his Receptive and Written abilities were best developed.
His mother facilitated with Brian using an alphabet board on which facilitated messages containing correctly spelt words and full sentences were produced. Brian’s mother worked with him at school and home doing academic work. He had no other means of communication outside of making squealing noises, smiling appropriately when spoken to, and tapping his foot to indicate yes or no. Brian’s mother was convinced that he could communicate effectively with FC and she was fighting the school district to have her son included in a regular classroom.
Appendix D

Instructions to Facilitators
Instructions to Facilitators

This will be a 15-minute session.

Insert the cassette tape into the tape recorder. Make sure the tape is cued to where the previous session ended. Set the tape recorder for Record mode. Say the date, time, your name, and the student’s name. Use a loud and clear voice.

Conduct the session as you normally would with the child. The only exception will be that you will be tape recording your statements to the child as well as the child’s responses. As the child responds read the letters out loud in the sequence they are selected. Read all letters selected by the child, including misspellings, repeated letters and any apparent mistakes.

(If the child was removed from the classroom information, if any, about his or her experience in included in the next paragraph.)
Instructions to Facilitators. (p.2)

Time_____ Date_____ Facilitator_________ Student_______

Observations:

1. Rate the accuracy of the child’s communication in this session by circling the appropriate number.

   Accurate 1_2_3_4_5_6_7 Inaccurate

2a. Rate your confidence that the child communicated independently of your influence in this session again by circling the appropriate number.

   Not confident 1_2_3_4_5_6_7 Confident

2b. What observations about the child’s messages lead to these rating?

3. Write a short summary about what the child was communicating during this session (use back of page if necessary).
Appendix E

Brief Descriptions of the Out-of-Classroom Events
Brief Descriptions of the Out-of-Classroom Events

Below are brief descriptions of the out-of-classroom activities experienced by each participant.

<table>
<thead>
<tr>
<th>TEST CONDITION</th>
<th>OUT-OF-CLASSROOM ACTIVITY</th>
<th>MESSAGE TO FACILITATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOE TRUE INFORMATION</td>
<td>Country and western music on the radio; played with waterfall toy.</td>
<td>Country and western music on the radio; played with waterfall toy.</td>
</tr>
<tr>
<td></td>
<td>Blueberry muffin.</td>
<td>Blueberry muffin.</td>
</tr>
<tr>
<td></td>
<td>StarTrek video.</td>
<td>StarTrek video.</td>
</tr>
<tr>
<td>NO INFORMATION</td>
<td>Blueberry muffin.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Country and western music on the radio; played with a waterfall toy.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Country and Western music video.</td>
<td></td>
</tr>
<tr>
<td>FALSE INFORMATION</td>
<td>Lemon-lime softdrink.</td>
<td>Listened to a tape of Rap music.</td>
</tr>
<tr>
<td></td>
<td>Coke-Cola soft-drink.</td>
<td>Carrot.</td>
</tr>
<tr>
<td></td>
<td>Coke-Cola.</td>
<td>Flintstones video.</td>
</tr>
<tr>
<td>MARK INFORMATION</td>
<td>TRUE INFORMATION</td>
<td>NO INFORMATION</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Walked outside.</td>
<td>Ate a blueberry muffin.</td>
<td>Drank a Pepsi-Cola.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drank a Pepsi-Cola.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BETTY</td>
<td>TRUE INFORMATION</td>
<td>Ate an oatmeal and raisin cookie.</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ate an oatmeal and raisin cookie.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outside to play on the swing.</td>
</tr>
<tr>
<td>NO</td>
<td>INFORMATION</td>
<td>Outside to play on the swing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outside to play on the swing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ate an oatmeal and raisin cookie.</td>
</tr>
<tr>
<td>FALSE</td>
<td>INFORMATION</td>
<td>Story about bears hibernating in the winter.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Looked at pictures of friends in a photo-album.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Looked at pictures of friends in a photo-album.</td>
</tr>
<tr>
<td>BRIAN TRUE INFORMATION</td>
<td>Played with some noisy toys.</td>
<td>Played with some noisy toys.</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td></td>
<td>Ate a beef burrito from Taco Bell.</td>
<td>Ate a beef burrito from Taco Bell.</td>
</tr>
<tr>
<td>NO INFORMATION</td>
<td>Looked at photo-album with Dad.</td>
<td>Played with some noisy toys.</td>
</tr>
<tr>
<td>FALSE INFORMATION</td>
<td>Wrestled with Dad.</td>
<td>Ate a beef burrito from Taco Bell.</td>
</tr>
<tr>
<td></td>
<td>Looked at photo-album.</td>
<td>Wrestled with Jorge.</td>
</tr>
<tr>
<td>Margaret</td>
<td>TRUE INFORMATION</td>
<td>NO INFORMATION</td>
</tr>
<tr>
<td>----------</td>
<td>------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Walked to the bike and trampoline; visited Rochele.</td>
<td>Looked at dresses and perfume ads in an Elle magazine.</td>
<td>Ate a breakfast burrito from Taco Bell.</td>
</tr>
<tr>
<td>Looked at dresses and perfume ads in an Elle magazine.</td>
<td>Ate a breakfast burrito from Taco Bell.</td>
<td>Given a Parents magazine as a gift; looked at babies.</td>
</tr>
<tr>
<td>Ate a breakfast burrito from Taco Bell.</td>
<td>Given a Mademoiselle magazine as a gift; looked at dresses.</td>
<td>Jigsaw puzzle.</td>
</tr>
<tr>
<td>Jigsaw puzzle.</td>
<td>Looked at dresses and perfume ads in an Elle magazine.</td>
<td>Ate a beef burrito from Taco Bell.</td>
</tr>
<tr>
<td>SEAN</td>
<td>TRUE INFORMATION</td>
<td>FALSE INFORMATION</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Ate a Hershey's chocolate bar.</td>
<td>Played catch with a ball.</td>
</tr>
<tr>
<td></td>
<td>Sorted red and blue chips into an egg carton.</td>
<td>Coloring with markers and placing stickers into an activity book.</td>
</tr>
<tr>
<td></td>
<td>Ate some chocolate; snapped clothespins onto a container.</td>
<td>Ate a Hershey's chocolate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sorted and strung colored beads.</td>
</tr>
<tr>
<td>NO</td>
<td>Colored with markers and placed stickers in an activity book.</td>
<td></td>
</tr>
<tr>
<td>INFORMATION</td>
<td>Made some designs with colored blocks.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sorte colored shapes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FALSE</td>
<td>Worked on a puzzle with blocks of different shapes and colors.</td>
<td></td>
</tr>
<tr>
<td>INFORMATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>
Appendix F

Human Subjects Institutional Review Board Approval
Date: January 13, 1993

To: Jorge Teodoro

From: M. Michele Burnette, Chair

Re: HSIRB Project Number 92-12-21

This letter will serve as confirmation that your research protocol, "Validating messages of facilitated communication" has been approved after full review by the HSIRB. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the approval application.

You must seek reapproval for any changes in this design. You must also seek reapproval if the project extends beyond the termination date.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: January 13, 1994

xc: Meinhold, PSY
WESTERN MICHIGAN UNIVERSITY
HUMAN SUBJECTS INSTITUTIONAL REVIEW BOARD (HSIRB)
HUMAN SUBJECTS APPROVAL FORM

RESEARCH MAY NOT BEGIN UNTIL THE PROTOCOL HAS BEEN REVIEWED
AND APPROVED BY THE HUMAN SUBJECTS INSTITUTIONAL REVIEW
BOARD, WHICH MEETS ON A REGULAR MONTHLY BASIS. PROTOCOLS
MUST BE RECEIVED BY RESEARCH AND SPONSORED PROGRAMS
AT LEAST SEVEN DAYS PRIOR TO A REGULARLY SCHEDULED
MEETING IN ORDER TO BE ACTED ON AT THAT MEETING. THE FORM
MUST BE TYPEWRITTEN, EXCEPT FOR SIGNATURES.

PRINCIPAL INVESTIGATOR*: Jorge Teodoro

DEPARTMENT: Psychology

Office Address: 282 Wood Hall

Office Phone: 387-4459

Home Address: 3520-A North Drake Road Apt 210 Kalamazoo, MI 49006

Home Phone: (616) 388-5994

PROJECT TITLE: "Validating Messages of Facilitated Communication"

PROPOSED PROJECT DATES: From 12/15/92 To 4/30/93

SOURCE OR POTENTIAL SOURCE OF FUNDING: Stipend from Genesee County
School District to cover transportation

APPLICATION IS: New Yes Renewal

Protocols for projects extending beyond one year from date of HSIRB approval must be
submitted annually for renewal.

If this proposal is approved by the Institutional Review Board, the Principal Investigator
agrees to notify the HSIRB in advance of any changes in procedures which might be
necessitated. If, during the course of the research, unanticipated subject risks are discovered,
this will be reported to the IRB immediately.

[Signature]

P. I. Signature Date

*If the Principal Investigator is a student, complete the following:

Undergraduate Level Research: Graduate Level Research: Yes

Faculty Advisor: Dr. Patricia Meinhold Telephone: 387-4498

Department: Psychology

[Signature]

Advisor Signature Date
VULNERABLE SUBJECT INVOLVEMENT (Fill out if applicable)

Research involves subjects who are (check as many as apply)

1. ___ x ___ Children (any subject under the age of 18)   Approximate age: 6-18
2. ___ x ___ Mentally retarded persons
3. ______ Mental health patients
   ______ Check if institutionalized
4. ______ Prisoners
5. ______ Pregnant women
6. ______ Other subjects whose life circumstances may interfere with their ability to make free choices in consenting to take part in research;

   _________________________________

   _________________________________

   _________________________________

   _________________________________

   (Describe)

LEVEL OF REVIEW

To determine the appropriate level of review, refer to WMU Policy Guidelines for categories of exempted research (Appendix B).

__________ Exempt  (Forward the original application to the Chair of the Department for a cover letter, then forward to HSIRB Chair via RSP)

__________ Yes  Subject to Review  (Forward original application plus 8 copies to HSIRB Chair via RSP)

BLOOD PRODUCTS INVOLVED

If your research involves the collection of blood or blood products, then pick up and complete an addendum (HSIRB Collection of Blood and Blood Products Form).

______________________________

PLEASE TYPE THE REQUESTED PROTOCOL INFORMATION ON THE FOLLOWING PAGES. You may attach additional sheets as necessary and reference the appropriate page.
ABSTRACT: Briefly describe the purpose, research design, and the site of the proposed research activity.

The purpose of the study is to contribute to the understanding and evaluation of the effectiveness of Facilitated Communication (FC) as an augmentative communication technique. The study will describe and test a protocol for evaluating the validity of facilitated messages. Sessions will be conducted in natural settings and throughout the natural course of the child's daily routine.

Facilitators will conduct 29, 15-minute FC sessions with their child over the course of the study. The sessions will occur in the child's home classroom at school. All sessions will be audio taped. One additional session will be videotaped.

The principle investigator, or a delegate, will be involved in nine of the FC sessions-test sessions. This involvement will consist of periodically removing a child from his/her home classroom to an activity room within the school for a period of 15 minutes. In the activity room the child will participate in an enjoyable activity such as eating a tasty treat, watching a favorite television program, playing with a beloved toy, or some other such experience that the child finds interesting and enjoyable according to interviews with a parent and a teacher. When each child returns to the classroom the principle investigator will provide the facilitator with either factual, misleading, or no information about the child's experience. The facilitator will complete each test session by attempting to have the child reveal through FC what occurred in the activity room. When the primary facilitator is a parent all sessions, including the test sessions, will occur at home with the parent leaving the room for about 15 minutes in order for the child to experience an activity.

BENEFITS OF RESEARCH: Briefly describe the expected benefits of the research.

The research will help to devise a useful methodology to evaluate the effectiveness of Facilitated Communication. Due to the paucity of controlled research on Facilitated Communication the proposed study promises to be an important contribution to the field. The proposed evaluation methodology will be objective and will help school boards to provide the most appropriate service and placement to intellectually challenged students. Individuals participating in the study will benefit from a more accurate assessment of their communicative skills and intellectual functioning. When the assessments provided by this study are used appropriately by the school district, the result will be the best matching of educational planning and resources with the participants' needs.

CHARACTERISTICS OF SUBJECTS: Briefly describe the subject population (e.g., age, sex, prisoners, people in mental institutions, etc.). Also indicate the source of subjects.

Subjects are students, approximately six to 18 years of age, who have been receiving Facilitated Communication for at least one year. The students lack effective spoken communication skills. They have been assessed as being intellectually impaired for purposes of receiving special education services in Michigan. The children are in the Genesee County School District. Parents of the children and administrators of the school district have requested that a protocol be devised to test their children in order to evaluate claims of Facilitated Communication. Potential subjects (and their parents) will be identified by the Genesee Intermediate School District (Flint, MI).
SUBJECT SELECTION: How will subjects be selected? Approximately how many subjects will be involved in the research? (Attach advertisement for subjects)

Subjects will be procured from the Genesee School District. This school district, and parents thereof, have already expressed an interest in having assessed the true communicative abilities of their handicapped children who are currently receiving Facilitated Communication. A minimum of six and maximum of 15 children will be assessed using the protocol of the proposed study.

RISKS TO SUBJECTS: Briefly describe the nature and likelihood of possible risks (e.g., physical, psychological, social) as a result of participation in this research.

The results of the study may be used by the members of the child's Individualized Educational Program Committee (IEPC) to make alterations to each participant-student's IEP. For some students this could result in a change from the present placement to a more or less integrated program within the same school or another school. At any rate, the end result should be a more accurate fitting of educational services to participants' individual abilities and needs. Of course, in all cases, information pertaining to each child must be considered by the child's IEPC which includes the child's parents.

PROTECTION FOR SUBJECTS: Briefly describe measures taken to protect subjects from possible risks, if any.

Students will be allowed the choice of not accompanying the principle investigator to the activity room on a given day. Changes in scholastic services that might result from the findings of the study are entirely based on the decision of the child's parent and IEPC team.

CONFIDENTIALITY OF DATA: Briefly describe the precautions that will be taken to ensure the privacy of subjects and confidentiality of information. Be explicit if data is sensitive.

Facilitated Communication sessions will be audio taped and videotaped for purposes of data collection. The tapes will be kept in a locked cabinet in the Infant and Child Behavior Laboratory at Western Michigan University, Department of Psychology for five years before being destroyed. Information will be released to the Genesee County School District and the parents of the child. Publication and presentations resulting from this research will include no identifying information (child's name, district name).

INSTRUMENTATION: If questionnaires, interview schedules, data collection instruments, other than standardized instrumentation on file with the HSIRB, or advertisements for subjects are used, please identify them and attach a copy of what will be used in the project.

Certain information will be collected from each child's school records (Appendix A). An interview protocol will be used to interview two adults who know the child well—in most cases that will be a teacher and a parent (Appendix B). Facilitators are required to complete a short questionnaire following each of the test sessions (Appendix C).
INFORMED CONSENT: Attach a copy of the informed consent (if applicable). Each subject should also be given a copy.

A copy of the form that will be signed by parents is attached. Parents will keep a copy.
REFERENCES


Crossley, R. (1990, September). Communication training involving facilitated communication. Paper delivered to the Australian Association of Special Education Annual Conference, Canberra, Australia.


Speak for yourself, or ... I can’t quite put my finger on it! Psychology in Mental Retardation and Developmental Disabilities, 17, 3-7.


