Augmentative Communication News

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INSIDE THIS ISSUE . . .

UPFRONT

Hold on to your butterfly nets! This issue presents information about autism and the role of augmentative and alternative communication (AAC) in the intervention of persons with autism. Manual signs and gestures, symbols, pictures, typewriters and a range of assistive devices are being used with varying degrees of success. Many thanks to those interviewed (see Resources, page 8) for sharing their time, writings, knowledge and opinions.

It is an exciting time. Some argue that our basic understanding and presumptions about autism are being challenged; many acknowledge underestimating some individuals with autism; still others say

they don't know what to think. The phenomena is a method called *Facilitated Communication.* When a facilitator physically supports their arm, hand, and/or wrist, some people labelled "autistic, retarded, and mute" begin to type/point to letters creating meaningful, linguistically intact messages. No one really understands this *laying on of hands*, but it is really happening.

My goals are not to focus exclusively on one approach or write definitively, but to alert and encourage you to become involved. If you work with persons with autism, stay in close touch with your colleagues and read the literature. By all means, try the Facilitated Communication method. If the successes continue to be replicated, the lives *(continued on page 2)*

For Consumers
AAC and autism

Childhood autism was first described as a distinct diagnostic category by Kanner in the early 1940s. Today the diagnosis of autism is often made according to the American Psychiatric Association's Diagnostic and Statistical Manual (DSM III-R) and involves a:[1]

1. Qualitative impairment in reciprocal social interaction (e.g., lack of awareness of existence or feelings of others; no or abnormal social play.)

2. Qualitative impairment in verbal and nonverbal communication and in imaginative activity (e.g., no mode of communication; marked impairment in the production, form or content of speech; inability to sustain a conversation with others.

3. Markedly restricted repertoire of activities and interests (e.g., stereotyped body movements; insistence on routines; restricted range of interests; preoccupations.)

4. Onset during infancy or childhood.

Professionals can be overheard debating whether a particular individual is "classically autistic," "autistic-like," or has "autistic features," but most agree on the behavioral characteristics associated with autism. The validity of the diagnosis, however, is questioned because autism does not provide differential information about etiology, treatment, or prognosis.[2] Here's what is currently known:

Etiology

1. Autism occurs in from 2 to 5 births per 10,000 and is more common in males than in females.[1,3]

2. Autism is not a single entity, but rather a grouping of behavioral characteristics, which can be observed in persons with multiple etiologies (e.g., PKU, maternal rubella). It is a syndrome, but unlike Down's syndrome, a single cause is unlikely. Subgroups of autism await further definition.[1,2,3]

3. Autism probably results from "physiologic dysfunction of **(continued on page 2)**

(continued from page 1)
of many more persons with autism will be enhanced. In **For Consumers**, current literature and thinking about the syndrome of autism and AAC approaches are covered. You'll also read what 9 experts feel should be done. **Clinical News** highlights *Facilitated Communication, Functional Communication; and Picture Exchange*, three approaches to persons with autism that incorporate AAC symbols and devices. **The Equipment** section focuses on intervention materials for children, including those with autism. In **Governmental**, the policies of two U.S. agencies toward assistive technology are noted. Finally, **University/Research** features activities in Ontario, Canada.

The coming months (and years) will help us learn more about what autism is (and is not) and define more clearly the role of AAC and assistive technology in intervention. Remember the Hotline number is (408) 649-3050. For those on vacation in August, I hope you had fun. Welcome back to work!

Sarah W. Blackstone, Ph.D., Author

For Consumers (cont. from page 1)

one or more as yet unidentified brain systems." A comprehensive, collaborative study led by Folstein at Johns Hopkins Medical Center in Baltimore and Rutter in London aims to further describe familial characteristics in persons (ages 6 - 25 years) with idiopathic autism and a range of IQs. Families of children with Downs' syndrome serve as controls. Preliminary findings strengthen the possibility of genetic factors. Families of children with autism have:[4,5]

- a statistically higher incidence of depression and anxiety in natural parents, which predates the birth of the autistic child;
- a higher occurrence of language-based learning difficulties in siblings;
- pragmatic differences in the communication styles of a subgroup (approximately 30%) of natural parents;
- no differences in the incidence of mental retardation in siblings.

<u>Prognosis:</u> Few follow up studies are reported. Whereas childhood IQ seems to predict the outcome of low functioning adults, the adequacy of social skills weighs more heavily in higher functioning individuals.[1] The prevalence of mutism (lack of speech) in autistic people ranges from 25 to 61 percent.[6] Causes are attributed to severe cognitive deficits, speech motor deficits (apraxia/dysarthria), and severe language and social impairments.[3] A full range of intellectual levels also is associated with the autistic syndrome. While the mean IQ is low, at least 30% of autistic individuals have an IQ above 70. However, these statistics may have limited

validity because intelligence depends on many different abilities.[1] Recent studies suggest individuals diagnosed as autistic who receive intensive early intervention may do quite well.[7] Also, reports of individuals using Facilitated Communication suggest some individuals with autism may be far more capable than previously thought.[7,8]

<u>Treatment:</u> There is no "cure," but there are a plethora of treatment approaches described in the literature. Caregivers *(and professionals who work with autistic individuals)* can chose from among pharmacological approaches; treatments directed at enhancing speech, language, communication, and social skills; interventions aimed at decreasing aberrant behaviors and/or modifying environmental variables; and/or psychoanalytic approaches. Although many approaches demonstrate a degree of success, the short and long term effects of intervention on the daily lives of individuals, and the social validity of approaches are rarely described.

The role of AAC in autism.

As summarized in Table I, the strengths and preferences of persons with autism offer good rationale for using AAC aids, devices, and symbols. Descriptions of

persons with autism using signs, symbols (Bliss, pictures, traditional orthography), homemade boards and various devices to communicate confirm that AAC approaches offer, at least some individuals with autism, expressive options, may facilitate learning, and lessen maladaptive behaviors.[3,6,9-14]

However, it is not just AAC tools and techniques that make a difference. The philosophy, beliefs, and experiences of AAC professionals also are relevant:

- Belief that people who don't talk <u>can</u> and <u>do</u> understand and often want to communicate
- Belief that individuals have a "right" to communicate, albeit in alternative ways
- Experience of successfully providing access to language and social interaction using alternative modes,
- Experience providing intervention in natural contexts and involving communication partners.
- Experience working and interacting with individuals whose means of expression are different.
- Philosophy that professionals are responsible for finding ways to make communication possible.

. . .as a child, the "people world" was often too stimulating to my senses. Ordinary days with a change in schedule or unexpected events threw me into a frenzy. . . Thanksgiving or Christmas were even worse

Temple Grandin, Ph.D., in her 1986 autobiography <u>Emergence labeled autisticc:</u> Novato, CA: Arena Press (as cited in Beukelman & Mirenda)[6]

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29 Future challenges

I asked the experts "What should professionals be focusing on over the next 5 years to improve the lives of persons with autism?" Here's the 29 items on their wish lists . . . *no more vacations!*

Service delivery

1. Stay focused. Keep an open mind. Take nothing for granted. Be responsible and work together.

2. Autism is a family problem. Use family-centered intervention models.

3. Acknowledge the life-long course of autism. Begin to document how needs and treatment approaches differ for very young, school-aged children, for adolescents, and for young, middle-aged and older adults.

4. Increase number of professionals who have knowledge and skills in autism <u>and</u> AAC. Teach professionals and consumers about available AAC tools.

TABLE I. USE OF AAC FOR PERSONS WITH AUTISM		
Characteristic	**Description of Individuals**	**Rationale for AAC Aids, Techniques, Symbols**
UNIQUE INFORMATION PROCESSING STYLE	Difficulty processing and organizing information. Information may be coded as a gestaldt, in a non-sequential manner. Visual spatial better than auditory skills. Learning style may underlie language and social problems. Good rote memory.	Visual cues help organize and sequence information. Sign language, graphic symbols, and traditional orthography are not as transient as spoken words and may be easier to learn. Synthesized speech is reproduced in a more consistent manner and may be more recognizable than natural speech over time (note: some react negatively to synthesized speech.)
LANGUAGE PROBLEMS & HYPERLEXIA	Difficulty with semantic & pragmatic aspects of language. Echolalia common. Interest in text, symbols. Reading & writing skills may be advanced. Echographica.	Symbols, writing, typing, capitalizes on strengths and reflects preference of some individuals. Printed words, signs, symbols may facilitate language growth. Other modes may help bridge gap from echolalia to meaningful language. Nonverbal as well as verbal is often needed.
INTEREST IN INANIMATE OBJECTS	Restricted and odd range of interests. Objects may be preferable to people. Interest and preference for mechanical devices.	Communication boards, typewriters, communication aids & devices are mechanical. Computer programs are predictable, don't require interaction, help focus attention, have linear steps and binary structures, no time constraints.
DIFFICULTY WITH SOCIAL INTERACTION	Limited responsiveness to people (not always true.) Verbal and nonverbal communication difficulties interfere. Don't seem to have a "script" for social interaction.	Device can act as an intermediary. Computers can be a context for social interaction. Speech output is a medium for social closeness. Speech ouput/computer may alter perceptions of peers and raise expectations. Use of communication devices may be qualitately different (e.g., to respond rather than initiate; instrumental rather than socially mediated.)
EXCESS BEHAVIORS	Stereotypic preoccupations, tantrums, etc. May be communication acts. May have sensorimotor etiology.	Symbols, signs, aids, devices are useful in encouraging more effective communicative behaviors. Can provide structure and information (e.g., schedule cards, a place labelled as a quiet corner to "escape/regroup.)" Behaviors may decrease as communicative repertoires expand.
ONSET PRIOR TO 36 MONTHS	Infant/toddler may have atypical behaviors and communicative patterns, which affect interaction with family members.	Many are reluctant to make an early diagnosis. A neurophysiological basis argues for providing compensatory strategies early in life including formalized communication through gestures/vocalizations/signs/etc. Don't wait for speech to fail to develop.

5. Promote ecological models of service delivery that support participation in meaningful, integrated contexts and utilize community resources.

6. Find sources of funding for assistive devices and services.

Etiology

1. Given that autism is a syndrome associated with various disabling conditions, sort out the cause(s) and subgroups (if they exist).

2. Figure out what is going on with children who regress in speech and other areas as toddlers or preschoolers and develop autism.

3. When describing individuals with autism (at conferences or in the literature), be comprehensive. Test scores are helpful, but never enough! If we don't know whom you are talking about, as well as what you did, the information you share will be confusing and may be misunderstood.

4. Get away from the notion that autism is a behavioral disorder and first and foremost requires behavior management!

Intervention

1. Encourage the early diagnosis of autism (without stigmata). Even being "at risk for autism" is reason enough to intervene in light of the apparent positive effects.

2. Keep vocational options open for older students and adults.

3. Focus on assessment and treatment approaches that are compensatory and result in functional outcomes and demonstrate social validity.

4. Determine which assessment and treatment approaches are preferred by consumers, both primary and secondary, and why.

5. Identify and respect learning styles.

6. Determine the effects of specific intervention strategies on the course of autism and identify assessment and treatment protocols that are effective with subgroups.

7. Focus on compensatory approaches. Work in contexts and on tasks that highlight an individual's capabilities, that motivate, and at which they are successful.

8. Determine the effects of well-defined, well-supported integration experiences. What is the impact, over time, on the lives of individuals, families, and the community?

9. Provide a full range of integration options for persons with autism.

10. Try Facilitated Communication.

11. Figure out what is going on with Facilitated Communication.

12. Use a combination of communication modalities and make differentiations by function.

AAC options

1. Evaluate the role of graphic symbols, communication boards, signs, devices, and computers. What works best, with whom?

2. Be more open to using technology with individuals who are autistic, particularly those who are nonspeaking.

3. Identify desirable features of devices for persons with autism and provide input to manufacturers.

4. Determine how, when, and why individuals with autism use AAC symbols, aids, and techniques in their daily lives.

5. Explore the computer as an educational, recreational, and social tool. Carefully define protocols and assess their effectiveness.

6. Evaluate effect of various device features on behaviors, opportunities, and experiences of individuals with autism (e.g., synthesized speech, alphanumeric keyboards, printers, telecommunication options, graphic symbols, rate enhancement techniques) to accomplish specific tasks in specific contexts (e.g., during play with peers.)

7. Determine how the use of AAC devices and techniques affects the perception of others, the opportunities of persons with autism, and their level of participation across contexts and activities.

Clinical News
Approaching persons with autism using AAC

As a syndrome of behaviors with multiple etiologies and a problem that persists over an individual's lifetime, the "best" approach for one individual with autism may not be the "best approach for another, or for the same person over time.

Intervention Approaches

· Professionals and families have options when seeking to improve the communication skills and lives of persons with autism. The following features are common among programs providing the most positive outcomes:[6]
- implement in natural settings
- begin early
- provide intensive programming in all contexts
- involve peers and caregivers
- make it a positive experience for everyone.

Of those interviewed, many, but not all, feel there should be a strong behavioral component. They concur we should take a functional approach, use multi-modalities, follow the individual's lead, and remember developmental discontinuity exists in autism. Individualized attention, a focus on language and communication, integration with support, and 12 month programming were also recommended by those interviewed.

While we often agree on what we call progress and whether what we do benefits individuals, we may not concur on the best approach to take or procedure to follow. Several excellent reviews of treatment approaches using AAC are available.[10-16] These identify strategies (e.g., modelling, prompting, error correction, incidental teaching, mand-model techniques, time delay procedures, interrupted behavior chains, verbal prompt-free strategies), delineate instructional steps from several protocols (e.g., teaching signs), and/or make comparisons across studies.

The purpose of this section is to highlight three intervention approaches for persons with autism that specifically use AAC symbols, aids, and/or devices and have been successfully carried out in integrated settings.

1. Facilitated Communication

As mentioned earlier, Crossley (in Australia) and Biklen (in the United States) are reporting dramatic success, which others are replicating.[7-8] Elements of the Facilitated Communication method include:[17]

1. Physical support. The facilitator provides physical support on the individual's forearm or hand to help the person isolate the index finger and/or slow the movement of the hand to a selection, e.g., a letter on a keyboard. The physical support also serves the purpose of helping the person initiate the action of pointing, literally to get started, and at the same time conveys emotional support. The facilitator does not assist the individual in selecting a letter or other target. Communication devices include picture boards, Canon Communicator, Casio, alphabet board, computer, or portable typewriter. Note: Physical support can be faded over time, but this may take months or even years.

2. Avoid testing for competence. It is important to treat the person being facilitated as competent. The facilitator attempts not to test the person, but merely provide support for typing or pointing and encouragement in a natural manner.

3. Initial training/introduction. Individuals are encouraged to progress through a series of activities or choices successfully, being pulled back from incorrect selections if they are impulsive or perseverate.

4. Set-work. Initially, work such as "fill in the blank" activities, math problems, answers to questions based on materials read, or other activities where the answers are more predictable gradually evolves to a more open ended dialogue.

4. Maintain focus. The facilitator reminds the person typing or pointing to keep his/her eyes on the targets, find a position so pointing is relatively easy, maintain isolation of the index finger, and reduce extraneous actions such as screeches, slapping of objects, hand flicking, pushing the typing device away and similar actions. The facilitator ignores these behaviors and physically supports the student in redirecting to the typing or pointing. If the individual engages in echoed speech, the facilitator asks the person to type what he/she wants to say.

A videotape is available. Send $25 payable to Syracuse University to Rosemary Alibrandi, Syracuse University, Division of Special Education and Rehabilitation, 805 S. Crouse Avenue, Syracuse, NY 13244-2280.

Results: Case reports and videotaped examples show children and adults, previously diagnosed as autistic and severely retarded with very limited communication, using typewriters, language boards, and Canon Communicators. They often reveal very rich linguistic output, social awareness, sometimes concurrent with stereotypic behaviors. Crossley and colleagues[7] reported on 34 people

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A First Grade Teacher's Account of Faciliatated Communication[17]
Lenny (age 6) uses a few words and a picture book. He is supported at his hand during Facilitated Communication,
At reading time, Lenny typed, "I WANTT REAADING'. We read a short story about a girl and a boy eating a hot dog where a little dog stole the hot dog. I asked Lenny to write a sentence using some of the same words. He typed, "THEDOG HAAS NO TAIL." I said, "the dog has a tail," and pointed to the dog in the picture. "What dog are you talking about?" I asked. Lenny typed, "NOTAIL" Then Lenny typed, "HOT DOG."

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using Facilitated Communication: 23 were spelling sentences (none without facilitation); 2 were spelling single words, 1 was using yes/no signals, 3 had not changed, and 5 were lost to followup. Biklen and Schubert[17] describe 21 students in Syracuse public schools (ages 3-21). Observations, videotapes, and writing samples were collected over a six month period with these results:
- 18 students are producing sentences, 2 are typing individual words, and 1 points to pictures.
- None of the students type with just any facilitator, but most type/point with several.
- All are more fluent doing "set work."
- Language samples include some phonetic spelling errors; but in general, the language skills demonstrated are near-normal.
- None has lost his/her autistic behaviors, e.g., echolalia or muteness, abnormal responses to external stimuli, difficulty in establishing or participating in normal social interaction (except through facilitated communication), light gazing, frequent use of peripheral vision.
- None is independent. All require physical support. Progress in complexity of typed material and level of independence was noted.
- No changes in speech are documented.

Issues: To date, testimonials and case reports comprise the growing data-base underlying this method. Professionals describe being moved (often to tears) when students they or others have worked with (and expected little from over the years) begin typing meaningful utterances that reveal social awareness, sensitivity, intelligence and

humor. Unquestionably exciting, the results raise a myriad of questions, including:

- Who are these subjects? What is the language profile, communication repertoire, cognitive capability? sensori-motor status?
- To what extent is a severe apraxia (verbal, oral, limb) present?
- Does Facilitated Communication make a difference to persons with autism over time,increasing opportunities, friendships, independence, and so on?
- How does it affect achievement? Can we predict who will benefit from the method? Who will not?
- What components of instruction are critical? Which are not?
- What makes a good facilitator? Is the method person specific? context bound?
- How should we approach literacy skills?
- Who will pay for devices? What devices are most effective and why? Who will pay for facilitators, for how long?

Note: Most are relevant to all approaches.

2. Functional communication

Another important area of intervention addresses the excess behaviors of persons with autism. Durand[17,18] describes the successful use of communication aids to teach communicative responses that reduce/replace challenging behaviors. Individuals, he postulates, who engage in excess behaviors serving a function *(e.g., getting attention, taking a break/escape)* are capable of acquiring more formal communication systems. Functional Communication Training helps clinicians & teachers assess the function of challenging behaviors and teach individuals to use alternative behaviors to serve the same function, thus reducing problem behaviors. In a recent study carried out through the Pennsylvania Assistive Device Center[18], teachers, parents, and related staff of 3 students (3-15 years old) received training in:

1. The functional nature of challenging behavior (e.g., hair pulling, crying, face slapping, head hitting, and hitting others)

2. Various assessment procedures to determine the functions of student behavior. Note: The Motivation Assessment Scale[20] (available soon.) Contact Monaco-Beck, 531 N.E. 35th, Topeka, KS 66617. (800) 798-1309. See also Communication Interview.[21]

3. How to teach students to use assistive devices (Wolf for 2 students and Introtalker for 1 student) Note: Specifications used to select communication devices were: easy to operate, costs less than $1000, durable, portable, easy access, intelligible speech output.

4. How to carry out functional communication, e.g. showing students how to use the device, prompting its use, and gradually withdrawing the prompts.

5. How to implement an intervention plan, e.g., how to instruct and how to correct errors.

Results: All students used devices successfully and reduced the severe aggression, self-injurious, disruptive, and stereotyped behaviors that were targeted. Social validity measurements showed an increase in positive facial expression and students appeared happier.

Issue: The use of speech output with persons who have autism requires further study. Durand[22] advocates the use of intelligible voice output because:

- Signs are often produced idiosyncratically
- People often don't respond to someone pointing to symbols, and
- It is not cost effective to train everyone to respond to every communication act.

"Everyone should be able to understand individuals and respond to their communicative acts," he says. Speech output may serve as a bridge between student's requests and a teacher's response.

3. Picture exchange.

The Delaware Autistic Program uses a Picture Exchange approach to establish the use of symbols in a communication exchange and promote success at interacting. Bondy

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Governmental

Clarifying U.S. Federal Agency Policies

Last year, the Office of Special Education Programs (OSEP) and the Rehabilitation Services Administration (RSA) wrote policy statements clarifying the rights of children and adults with disabilities to assistive technology devices and services. Summarized below, these statements may help you with funding problems:

1.The Office of Special Education Programs (OSEP):
In a letter dated August 10, 1990 Judy A. Schrag, Director, OSEP stated that under P.L. 94-142, the federal mandate for a free appropriate public education (FAPE) means:

- 1. It is not permissible for public agencies (including school districts) to presumptively deny assistive technology to a child with handicaps before a determination is made as to whether such technology is an element of a FAPE for that child.
- 2. Consideration of a child's need for assistive technology must occur on a case-by-case basis in connection with the development of a child's individualized education program (IEP)
- 3. Assistive technology can mean both "assistive technology services" and "assistive technology devices."
- 4. Assistive technology could qualify as "special education" or as "related services."
- 5. Assistive technology can be a supplementary aid or service utilized to facilitate a child's education in a regular educational environment.
- 6. Services must be provided at no cost to parents if participants on the IEP team determine a child requires assistive technology in

order to receive a FAPE and designate such assistive technology as either special education or a related service.
Dr. Judy Schrag, Director, Office of Special Education Programs, 330 C Street SW, Washington DC 20202-2736.

2. The Rehabilitation Services Administration. RSA's Commissioner Nell Carney issued a policy directive on assistive technology on November, 16, 1990, to State vocational rehabilitation agencies, stating:

- 1. Rehabilitation technology is defined as a range of services and devices which can supplement and enhance individual functions. It includes services which impact the environment through environmental changes such as job redesign or worksite modifications
- 2. Rehabilitation technology services should be applied when making determinations of eligibility..."particularly for those individuals whose disability conditions are of severity that otherwise might lead to a finding of ineligibility."
- 3. Assistive technology is equally important for individuals who are in extended evaluation to determine rehabilitation potential, receiving services under an individualized written rehabilitation program (IWRP), undergoing annual review when the case was closed as too severe, receiving post-employment services, undergoing annual review and re-evaluation when the case is in extended employment in rehabilitation facilities.
- 4) The provision of rehabilitation technology services is not conditioned on a determination that comparable services and benefits are not available under any other programs. (This minimizes waiting or delays in accessing assistive technology services/devices.)
- 5) Each state VR agency should provide a description of how rehabilitation technology services will be made available to individuals with disabilities.
Commissioner Nell C. Carney, RSA Mary E. Switzer Bldg., 330 C Street, SW, Room 3325, Washington, DC 20202-2899

Share this information with your colleagues and with families. People who have been denied assistive technology in the past may indeed benefit now!

describes the approach:[23]

- 1. identify desired objects (i.e., things the child reaches for) and take a picture of it.
- 2. while the child is reaching for the object, put the picture in their hand. Note: children are not expected to identify or even attend to the picture
- 3. assist the youngster to give the picture to an adult. The adult responds as if the child were talking i.e., making a request and gives the child what they ask for.
- 4. adults gradually move farther away from the child and encourage the child to pick up the picture, look for an adult, and put it in the adult's open hand.
- 5. after 10 photos are used, each is placed (using velcro) on a miniboard. Youngsters have a personal board and access to activity based classroom boards.
- 6. to introduce picture sequencing, a separate brightly colored card is attached with velcro to the personal/activity boards. Child puts pictures (want + cookie) on this board, thereby constructing messages and then pulls off the brightly colored card and gives the card to the adult.

Results: Data on 66 children introduced to this approach under the age of 5 reveal in less than 1 month, they use picture/symbols to make a request. Whereas demands are not made for speech (despite echoing of words), most students with communication repertoires of 80-120 symbols begin speaking. Some, but not all, demonstrate a range of functions (e.g., labelling, commenting). As communication skills increase, aberrant behaviors decrease.

Final Comments

The literature is replete with studies designed to determine whether a procedure is effective in increasing or decreasing behaviors (e.g., requests, tantrums, use of signs). The answer is nearly always "yes." Another, perhaps a more important question is SO WHAT?

Is the change maintained over time? Does it matter in the lives of the subjects? Does it increase their opportunities and degree of participation? Are they happier?

We learned early on in AAC that "success" depends not on a device or whether someone can do "something" after systematic training. Success depends on what individuals do Do. Does assistive technology change the way they choose to communicate with others across contexts? Does the environment responds in a supportive manner? Do people have friends, achieve in school, get a job and so on?

Functional outcomes and ecological validity are what we are after. *That's the butterfly.* Get those nets ready!
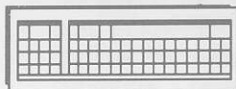
Equipment

Early Intervention materials to consider

These materials can help professionals enhance the communication skills of young children with severe handicaps. Because of federal funding some are still available for limited distribution at no or minimal cost.

1. Integrated Play Groups (IPG). *A. Schuler & P. Wolfberg.* The IPG Project through San Francisco State University, is field testing and expanding training materials to be used by teachers and others to promote the development of social interaction skills in the context of integrated play groups. Typically an adult facilitator guides 5 elementary school students (2 with social/communication problems and 3 similarly aged peers without disabilities) to initiate and incorporate their desired activities. Gradually peers are coached to become facilitators and mediators of social play. Groups meet 30 minutes, 2 x per week throughout the school year. Data shows increases in symbolic object use and social interaction. Communication functions extend beyond requests. A newsletter is currently available and other training materials are being finalized. These include an IPG's Training Manual; 4 short stories for integrating children with special needs, e.g., *Why Doesn't Jonas Talk* (autism); and 4 training tapes: *An Introduction, Assessment, Intervention, Evaluation/Social Validation.*
To get on their mailing list contact: Pamela Wolfberg, Program Director IPG, Dept. of Special Education, San Francisco State University, 1600 Holloway, San Francisco, CA 94132 (415) 338-1919

2. A.C.E. Analyzing the Communication Environment: An inventory of ways to encourage communication in functional activities. *C. Rowland & P. Schweigert.* This manual is the product of Oregon Research Institute's "Proactive Communication Project." The Inventory has two parts:

1) Inventory of Ways to Encourage Communication in Functional Activities. This part assesses behaviors of children and adult caregivers. An observation tool covering activities, materials, interaction with adults, group dynamics, communication system, and opportunities for communication. It asks, for example, "Is the student receptive to engaging in some level of interaction?"

2) Descriptions and illustrations of how to encourage change. The second part gives strategies for encouraging communication across functional activities in order to shift the "balance of power toward the child." Ideas are included about how to change a student's behavior. For example, if a student is not responsive to interaction, the authors advise, "identify behaviors that suggest the student does not want to interact with anyone, determine if they are interfering with an activity, whether the problem is typical or unique and what to do." A clear, concise writing style and illustrations (by Carolyn Mills) make this manual easy to follow.
Limited copies available from Oregon Research Institute, 425 S.E. 11th Avenue, Portland, OR 94214.

3. Communication systems and routines: A decision-making process. *K. Stremel, V. Molden, C. Leister, J. Matthews, R. Wilson, d. Goodall, J. Holston.* This product results from the University of Southern Mississippi's "Communication modes for infants/young children with dual sensory impairments project." It's question and answer format makes for easy reading and it is full of good ideas. Designed to have an impact on communication systems and routines of infants and young children, the manual includes Decision making processes associated with:
- Assessment of receptive and expressive communication
- Assessment utilization
- Analysis of routines
- Incorporation and movement of communication skills (receptive and expressive)
- Interactional intervention and
- Movement
For information, contact: Jan Holstein, Box 5115, Hattiesburg, MI 39406-5115.

4. Communication and Symbolic Behavior Scales. *A. Wetherby & B. Prizant.* Complete kit includes 22 scales covering play, language, affect, and social relatedness. For children functioning between 8 and 24 months.
Available from Riverside Publishers, 8420 Brynmawr, Chicago, IL 60631. (800) 888-4506. Note: The complete kit costs $432 U.S.

University & Research

Rehabilitation Technology R & D Consortium

Table II. Consortium Teams		
AREA	**LEADER(S)**	**AFFILIATIONS**
PROSTHETICS & ORTHOTICS	S. Naumann S. Olney	HMRC, University of Ontario Queens University
MOBILITY	G. Fernie G. Verburg	Sunnybrook Hospital/Univ. of Toronto HMRC
SEATING	M. Milner S. Ryan,	HMRC/Univ. of Toronto HMRC
HEARING	D. Jamieson	Univ. of Western Ontario
VISION	G. Strong	Univ. of Waterloo
COMMUNICATION	P. Parnes, G. Fagerberg	HMRC, Univ. of Toronto University of Western Ontario
PSYCHO-SOCIAL EVALUATION	P. Lindsay	Ontario Institute for Studies in Education
RESPIRATORY	R. Goldstein	Univ. of Toronto, West Park Hospital

The Ontario Ministry of Health is establishing a consortium of scientists, health care providers, industrial representatives and consumers of assistive devices from across this Canadian province. The Consortium is mandated to:

- a) pursue programs of rehabilitation research and development of utmost relevance to consumer needs, and

- b) contribute to the economic development of the Province.

Note: Currently, Canadian companies supply only a small fraction of the domestic market for medical devices, which necessitates huge expenditures on imported products.

The Hugh MacMillan Rehabilitation Centre (HMRC) is facilitating this collaboration, under the direction of Dr. Morris Milner, Vice President of Research and Development at HMRC and professor at the University of Toronto. The Consortium is comprised of eight teams, listed in Table II above.

Communication Team

The mandate of the communication team led by Penny Parnes and Gunnar Fagerberg, past presidents of the International Society for Augmentative and Alternative Communication (ISAAC), is to focus on research and development of systems that augment face-to-face, written and telecommunications of individuals with severe communication problems. The team is carrying out a project *The Development of Multi-Modal Augmentative Communication Technology*. Coordinated by Frasier Shein, objectives are to:

- Increase the amount and quality of information between AAC users and their partners *(F. Shein, P. Parnes, G. Fagerberg)*. By increasing the number of simultaneous input channels used to control an AAC device (e.g., techniques to sense/interpret low-resolution pointing skills; speech recognition), they hope to increase communication speed .

- Provide effective means to express nonverbal aspects of communication, both in face-to-face and remote communication settings *(P. Reich, P. Lindsay)*. They hope to establish the types of information communicated in this domain, the ways it is used, and how to encode and transmit non-linguistic information crucial to the "social part" of messages.

- Develop techniques for evaluating both quantitative and qualitative aspects of AAC system use *(T. Wallace, B. O'Keefe)*. Unobtrusive electronic devices to measure device utilization and psychosocial concerns will be developed and field tested. Also, changes in quality of life after introduction to more powerful technology will be evaluated.

Communication team partners:
Clinical agencies, consumer, industrial and scientific partners will play a role in the team's activities:

CLINICAL AGENCIES will provide insights into the clinical applications of AAC technology as well as review ongoing developments. Participating agencies include Level 3 AAC centres in the province (i.e., HMRC, Thames Valley Children's Centre, Chedoke-McMaster Hospitals) and others.

CONSUMERS will assist in developing the needs statement and design requirements, and will be involved in field trials. Measures related to the hypotheses as well as measures of satisfaction and preferences will be included.

INDUSTRIAL PARTNERS will provide expertise and support to ensure transfer of technology to the market place. IBM Canada Ltd., Apple Canada Ltd. and companies manufacturing AAC devices are included.

SCIENTIFIC PARTNERS will serve as consultants and will review the work of the team. They will be drawn from the international community.

Expectations are that new devices and technology will be available in prototype by the end of 1993 and ready for production before 1996. Space precludes a description of other Consortium team activities; each area has projects applicable to meeting the assistive technology needs of individuals with disabilities.

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INROADS
(Initiatives in Research on Assistive Devices)

The University of Western Ontario, and Thames Valley Children's Centre have announced an *Initiative* to conduct research related to communication and sensory disabilities. Current projects include:

- evaluation of computer-based picture communication for aphasics
- development of a light pointer
- voice recognition system for communication by dysarthric speakers
- evaluation of synthetic speech output in communication devices
- development of mounting system for communication devices on wheelchairs.

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Resources

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References

[1] Rapin, I. (1991). Autistic children: diagnosis and clinical features. In M. Denckla & L. James (Eds). An update on autism: A developmental disorder. Pediatrics. 87:5, 751-760.

[2] Durand, V.M. & Carr, E.G. (1988). Autism. In V. Van Hasselt, P. Strain, & M. Hersen (Eds.). Handbook of developmental and physical disabilities. New York: Pergamon Press.

[3] Prizant, B. (1988). Communication problems in the autistic client. In Lass, N., McReynolds, L., Northern, J. & Yoder, D. (Eds.) Handbook of speech-language pathology and audiology. Toronto: B.C. Decker, Inc.

[4] Rebecca Landa (September, 1991). Personal communication.

[5] Folstein, S. & Piven, J. (1991). Etiology of autism: Genetic influences. In M. Denckla & L. James (Eds). An update on autism: A developmental disorder. Pediatrics. 87:5, 767-773.

[6] Beukelman, D. & Mirenda, P. (in press). Persons with autism. In Augmentative and alternative communication: Management of severe communication disorders in children and adults. Baltimore: Paul Brookes (expected publication date, Spring, 1992)

[7] Crossley, R., Batt, M. & Remington-Gurney, J. (August, 1990). Communication training involving facilitated communication and Facilitated communication in mainstream schools. Papers presented at ISAAC 4th Biennial Conference, Stockholm.

[8] Biklen, D. (1990). Communication unbound: Autism and praxis. Harvard Educational Review. 60 (3), 291-314.

[9] Schuler, A., Gonsier,-Gerdin, J., & Wolfberg, P. (1990). The efficacy of speech and language intervention: Autism. Seminars in Speech and Language.11:4, 242-255.

[10] Schuler, A. & Baldwin, M. (1981). Non-speech communication and childhood autism. Language, speech, and hearing services in schools. 12, 246-257.

[11] Mirenda, P. & Schuler, A. (1988). Augmenting communication for persons with autism: Issues and strategies. Topics in language disorders. 9 (1), 24-43.

[12] Bonvillan, J., Nelson, K., & Rhyne, J. (1981). Sign language and autism. Journal of autism and developmental disorders. 11 (1), 125-137.

[13] Kiernan, C. (1983). The use of nonvocal communication techniques with autistic individuals. Journal of child psychology and psychiatry. 24 (3), 339-375.

[14] Mirenda, P. & Iacono, T. (1988). Strategies for promoting augmentative and alternative communication in natural contexts with students with autism. Focus on autistic behavior. 3 (4), 1-15.

[15] Mirenda, P., Iacono, T. & Williams, R. (1990). Communication options for persons with severe and profound disabilities: State of the art and future directions. The journal of the association for persons with severe handicaps. 15 (1), 3-21.

[16] Schuler, A. (1985). Selecting augmentative communication systems on the basis of current communicative means and functions. Australian journal of human communication disorders. 13:2, 99-115.

[17] Biklen, D. & Schubert, A. (in press, November 1991, Volume 12, No. 6). New words: The communication of students with autism. Remedial and special education.

[18] Durand, V.M. & Berotti, D. (in press). Treating behavior problems with communication. Asha Magazine. Rockville: American Speech-Language-Hearing Association.

[19] Durand, V.M. (Manuscript under review). Functional communication training using assistive devices: Effects on challenging behavior and affect.

[20] Durand, V.M. & Crimmins, D. (in preparation). The Motivation Assessment Scale. Kansas: Monaco-Beck.

[21] Schuler, A., Peck, C., Willard, C. & Theimer, K. (1989). Assessment of communicative means and functions through interview: Assessing the communicative capabilities of individuals with limited language. Seminars in speech and language. 10:1, 51-62.

[22] Mark Durand, (September, 1991) Personal communication.

[23] Andrew Bondy (September, 1991) Personal communication.

PLEASE FORWARD