

# **Simultaneous and Manual Communication: Their Role in Rehabilitation with the Adult Deaf**

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*Simultaneous and manual communication have significant roles to serve in rehabilitation with the deaf adult. These roles include: 1) improved communication between client and clinician; 2) development and maintenance of oral-aural communication skills; 3) development of English language skills; 4) use with "special learners;" and 5) an opportunity to understand human language, communication and intelligence better. In order for these roles to be served, rehabilitation workers with the adult deaf need: 1) to be knowledgeable about all needs of the deaf adult; 2) to have an understanding and appreciation for all modes of communication; and 3) to possess the skills needed to communicate most effectively with all members of this population. If these three prerequisites for working with the adult deaf are met, then the goal of providing more organized and better services for all hearing-impaired adults will come closer to fruition.*

## **INTRODUCTION**

In a recent editorial the president of the American Speech and Hearing Association, R. J. Van Hattum (1977), stated, "Our special concern is the manner in which people communicate . . . . I would include both verbal and nonverbal communication and both oral and nonoral avenues" (p. 410). The purpose of this paper is to discuss a nonoral avenue of com-

munication (manual communication) and the importance of this avenue alone and in combination with an oral avenue (speech) in rehabilitation with the adult deaf. Benefits of using manual and simultaneous communication are discussed under the following general areas: 1) improved communication for client and clinician; 2) co-exist, develop with, and facilitate development of oral-aural communication skills; 3) assist in development of English language skills; 4) use with "special learners;" and 5) an opportunity to understand human language, communication, and intelligence better. In addition, the importance of English and American Sign Language is the selection of manual communication systems and languages used in rehabilitation with the adult deaf persons is discussed.

#### DEFINITIONS

Misunderstandings relative to manual communication continue to persist. A major confusion is the belief that if one uses manual communication a language other than English is being used. The confusion can be solved by recognizing the difference between a mode of communication and a language. A language may be defined as an arbitrary set of symbols and the rules which govern their use, which may be used by two or more persons for communication. A mode of communication is a means by which a language may be transmitted and received. Speech, writing, and manual communication are all modes of communication which may be used to express and receive a language, be it French, German, or English.

To be more specific, manual communication is a visual-gestural mode of communication in which signs and fingerspelling are used to transmit and receive information. Signs are visual gestures which are consistent in their use. These systematic gestures are composed of handshapes, positions, movements, and orientations (orientation refers primarily to the direction of the palmar surfaces of the hand) (Battison, 1974; Bradley et al., 1976; Lane et al., 1976; Stokoe et al., 1965). Fingerspelling is a communication activity involving the use of the manual alphabet to make words visible, with the manual alphabet being composed of 19 handshapes, two movements, and three orientations which give 27 visible symbols for the alphabet and ampersand (Stokoe et al., 1965). American Sign Language (a manual language considered to be a separate, distinct language from English by Stokoe et al. and others) and manual communication systems designed to represent English (manually coded English systems) are discussed by Caccamise and Drury (1976), Cokley and Gawlik (1973), and Gustason and Woodward (1973).

Simultaneous communication is a combination of oral-aural and manual communication. The person expresses himself in speech, signs, and

fingerspelling and receives input through speechreading, listening, signs, and fingerspelling (Moore, 1970). In general, the more speaking a signer does the more likely he is using a manually coded English system rather than American Sign Language.

#### IMPROVED COMMUNICATION FOR CLINICIAN AND CLIENT

Developmental problems (personal-social, language, and learning) have often been associated with deafness in a cause-effect relationship. However, as knowledge about human development and behavior has increased, it has become evident that a hearing loss in the peripheral nervous system should not be related in a direct cause-effect relationship with abnormal development. The culprit, rather than being the hearing loss per se, is a lack of adequate communication. "A hearing loss may result in difficulties in emotional and social behavior, in educational progress, or in vocational placement. However, at the core of these problems rests a breakdown in the process of communication" (Sanders, 1971, p. 1). A similar view has been expressed by Denton (1971), Johnson (1978), and Williams and Sussman (1971). This breakdown in communication may hinder the deaf person's development and opportunities for development throughout life. Costello (1977) stressed that although millions of American adults have sought new skills needed to adapt to an ever-changing world through enrollment in continuing education classes, deaf adults cannot use such educational opportunities unless provisions are made to bridge the communication gap. Johnson's (1978) documentation of the underemployment and unemployment problems of the deaf has emphasized the importance of bridging this gap. According to Reese and Alpiner (1976), "... the basic goal of rehabilitative audiology is to help the individual reach and maintain his maximal communication ability and, in this way, assist him to better fulfill his roles in society." Therefore, the role of the rehabilitative audiologist in meeting the total needs of the adult deaf can be a significant one. However, before the audiologist can effectively assist in meeting these needs some basic changes need to occur in both attitudes and skills.

Johnson (1978) listed three necessary prerequisites the clinician needs in order to serve the adult deaf: 1) to be knowledgeable about all needs of the adult deaf; 2) to have an understanding and appreciation for all modes of communication; and 3) to possess the skills needed to communicate most effectively with *all* members of this population.

In discussing his first prerequisite, Johnson emphasized the importance of understanding and considering the whole learner and his total environment. Basically, the learner's or client's aptitudes, skills, interests, and attitudes, plus his personal, social, and work situations, must all be taken

into account when planning and implementing a rehabilitation program with an adult deaf client. Consistent with Johnson, Reese and Alpiner (1976) stressed that since the basic goal of rehabilitative audiology (to assist a person in reaching and maintaining maximal communication skills) is a specific and individualized goal, the client's unique needs and background must be taken into consideration.

The previous section of this paper (*Definitions*) addressed Johnson's second point about understanding and appreciating language and all modes of communication. Johnson stressed the importance of "communication" versus "mode-of-communication," stating that the deaf person will try every way to communicate and so must the clinician—it is not *how*, but rather that you communicate that is important. In essence, Johnson is advocating an acceptance of shared responsibility for communication by both the client and the clinician.

The communication responsibility of the clinician has been discussed by both Jerger (1952) and Rupp (1977). Jerger stated that if the client does not understand exactly what is expected of him the measures obtained are meaningless. Rupp went a step further stating that when test results cannot be used or reported because of the clinician's lack of preciseness or clarity a professional disservice has been done to the client. Johnson (1978) discussed the counseling role of the rehabilitative audiologist, stressing the clinician who can communicate in the mode(s) most effective for the client can better motivate the client since the client will better understand his hearing loss, communication needs, hearing aid usage, etc.

The disservice reaped upon hearing-impaired persons by those unable to communicate with *all* deaf persons has perhaps been most damaging in the area of psychological services. The characterization of the deaf as immature, egocentric, deficient in emotional adaptability, etc., is familiar to most professionals who work with the deaf. Yet, Levine's (1974) survey of persons responsible for providing psychological services for school age deaf persons showed that: 1) 65% of these persons reported no previous experience with deaf persons and 83% reported no previous work experience; 2) 90% had major responsibilities in other areas; 3) 50% reported "no" manual communication skills, 20% reported poor skills, 10% fair skills, and 5% good skills; and 4) 65% of the clientele served used manual communication in combination with other modes for communication. Consistent with this suggested importance of manual communication to interacting with the deaf client, Rainer et al. (1963) reported that of 167 deaf persons at an outpatient mental health clinic, 76% could be counseled only by staff members who had a thorough knowledge of manual communication. Basically, how can a "clinician" who cannot communicate with a client, provide appropriate assessment

services, and even more important, the counseling services needed by the client for adjusting to a complex and often indifferent and even hostile society? The "psychology of deafness" as described in too many articles and books is often no more than a description by a professional person who has little or no meaningful contact with the deaf, and/or who cannot communicate with many of the deaf people he pretends to describe. Given this situation, the following statement by a concerned sociolinguist is understandable: "...the deaf have been looked on as physically, socially, and linguistically pathological. While it is true there is a physical pathology, claims for social and linguistic pathology are actually no more than ethnocentric compulsions of one social group (the hearing) towards another (the deaf)" (Woodward, 1973, p. 191).

Like Johnson, Schreiber (1969), Executive Secretary for the National Association of the Deaf, emphasized the importance of distinguishing between modes of communication and communication:

We believe every child should have the opportunity to speak and read lips just as we believe every child should have the opportunity to be another Van Gogh, or Beethoven or Edison.

But our first need is to be able to communicate. Communication is not speech!

Talk to me yes, but give me the help I get from signs and finger-spelling. (pp. 2-3)

The possible negative relationship which may develop between the clinician and the "potential" adult deaf client when the clinician does not understand and appreciate all modes of communication is evident in the following quotations: 1) "... anyone who tries to deprive the deaf of the language of signs was an enemy to their interest and happiness" (resolution passed at 13th National Association of the Deaf Convention, 1920, in Shaposka, 1971, p. 6); 2) "Sign language is the hallmark of the deaf adult community. In reaction against the stigma placed upon their language, many deaf adults depreciate the value or even the usefulness of hearing aids, speech, or lipreading skills" (Schlesinger and Meadow, 1972, p. 3). The extent to which some deaf persons have rejected the importance of oral-aural communication is evident in the findings of a survey of deaf adult educational needs involving 574 adult deaf persons from 15 American cities (Costello, 1977). Results showed that from a list of 18 goals the deaf adults surveyed rated improvement of oral and auditory skills as the last priority. Interestingly, the top rated goal was improvement of language skills suggesting that the deaf adults understood the difference between language and modes of communication.

The significance of Johnson's third prerequisite that the clinician pos-

sess the skills needed to communicate most effectively with all members of the deaf adult population is supported by a recent report by Marge (1977). Marge discussed the need for a more organized approach to meeting the needs of deaf persons, stating that:

Service delivery systems for the hearing impaired are ineffective, fragmented, and disorganized. . . . The problem is with the well-intentioned. . . . professionals. . . . most professionals limit their perspective of the hearing impaired to only those who are referred to them for assistance. We need to broaden our concern to all hearing impaired in our nation. (p. 409)

The problems involved in rehabilitative audiologists waiting for referrals of adult deaf clients include: 1) as previously stated, many adult deaf have negative attitudes toward speech and hearing, and will not of their own volition seek out the services of a rehabilitative audiologist, and 2) Reese and Alpiner (1976) reported that their survey of 25 vocational rehabilitation (VR) counselors showed that few VR counselors make referral to audiologists for remediation since their general opinion is that audiologists are involved only in diagnostic services. Further, these VR counselors reported that their clients were split with approximately 50% using manual communication and 50% using oral communication as their primary means of communication. Since many audiologists are not skilled in manual communication, they are not prepared to provide adequate services for at least 50% of the adult deaf served by these VR counselors.

Reese and Alpiner did not discuss simultaneous communication, but research results suggest that clinicians who can effectively use oral and manual communication together are likely to communicate better with adult deaf clients than clinicians who can use only one of these skills well. Communication data collected on college-age deaf students entering the National Technical Institute for the Deaf has consistently shown these students to receive information better under simultaneous test conditions than under either manual communication alone or speechreading with sound alone test conditions (Caccamise, 1975; Johnson, 1976). Similar results with younger hearing-impaired students have been reported by Moores et al. (1972) and Klopping (1971). A note of caution is necessary here. All of these studies involved the use of a manually coded English system under the manual alone and simultaneous test conditions. For some adult deaf clients whose native language is American Sign Language (ASL), and who have minimal English and/or oral-aural communication skills, ASL may be more effective for communication than simultaneous communication.

The importance of simultaneous communication to the professional

interested in and responsible for providing rehabilitative services for the adult deaf client is likely to increase given the trend in educational methods used with deaf children. Jordan et al. (1976) sent a survey form to all 970 educational programs for the hearing impaired on the Office of Demographic Studies mailing list. The total number of responses was 796 (82%). Table 1, which gives the number of programs and classes report-

*Table 1.* Number of educational programs and classes for the hearing-impaired reporting use of manual communication as part of their Total Communication Approach—total number of responses 796 (extrapolated from Jordan et al., 1976)

	<i>Programs</i>	<i>Classes</i>
Pre-School	324 of 627	689 of 1259
Elementary	411 of 773	2196 of 3522
Jr. High	212 of 422	688 of 1086
High School	192 of 353	1046 of 1314

ing the use of manual communication as part of their Total Communication Approach,<sup>1</sup> shows that over 50% of all classes at all educational levels are using manual communication. Further, data reported by Jordan et al. showed that of 343 programs reporting a recent change in communication modes used, 333 of these reported a change to include the use of manual communication.

Speech and hearing professionals are beginning to develop simultaneous/manual communication skills. Davis (1976) reported that of 36 university speech and hearing programs surveyed, 20 reported offering courses in manual communication with eight requiring such courses. If this trend continues the rehabilitative audiologist should be better prepared to meet the needs of *all* adult deaf, and this should lead to more effective, organized service delivery systems. If this trend does not continue then lack of service or disservice to many adult deaf will continue to persist.

Summarizing and expanding what has been discussed, the advantages or benefits of improved communication between clinician and client through the use of simultaneous and manual communication are:

1. *Assessment*—Increased reliability-validity of test results.
2. *Counseling and Motivation*—Improved counseling skills for the clinician with the result being greater motivation in the client since he will better understand his communication needs.
3. *Respect, Trust, Motivation*—Improved motivation of the client

since the respect shown for both manual communication and oral communication by the clinician in using simultaneous communication will assist in building trust between the client and clinician.

4. *Leadership in Deaf and Hearing Communities*—Both client and clinician will be able to provide leadership for larger numbers of deaf and hearing people since they will possess the communication skills needed to adjust to their communication according to the skills and needs of a wider variety of people.
5. *Better Understanding of Role of Body Language in Communication*—This should assist the clinician in interacting with all clients since social contact without the transmission of nonverbal messages is essentially impossible, and nonverbal behavior is the main channel for affect, or feeling, possibly below the level of awareness (Egolf and Chester, 1973). Rosen (1975) stressed that in the absence of vocal intonation to receive the finer shades of meaning the deaf person is visually oriented and dependent to a large degree on facial expressions and movement. Further, Bellugi and Fisher (1972) stated that whereas facial expression and body attitude are usually considered part of paralinguistics for spoken language, they can be part of the grammar of sign. For example, in manual communication a side-to-side headshake may be the only marker for the negative in phrases such as “DON’T KNOW” and “DON’T UNDERSTAND.” Another example involves the asking of questions in signs. In addition to the regular or formal hand sign question markers (WHAT, WHERE, etc.), signed questions are marked by leaning forward, using a questioning facial expression (upward movement of eyebrows, etc.), and holding the last sign. This is analogous to the increase in voice intonation present at the end of spoken questions. If these sign question markers are not used, the clinician may wrongly assume the deaf client did not understand a question, when in fact the clinician did not ask a question. Other examples of the use of body language in manually and simultaneously communicated messages include: 1) the incorporation or marking of pronouns by the directionality of a verb sign and the “line-of-sight” of the sender, 2) the use of space to indicate relative sizes and locations, and 3) the speed and intensity or strength of a sign’s movement to indicate attitudes. An awareness of these and other characteristics of simultaneous and manual communication can assist in improved communication, since the clinician will understand that rather than deleting many of the components of oral communication (as is often claimed), signing has unique ways of transmitting information. This should not be surprising since oral and written forms of the same language use different mechanisms to convey the same information.



The final comment for this section is on the use of interpreters—be they oral or oral-manual interpreters (the latter are also referred to as simultaneous interpreters—the point is that there are no strict manual interpreters since all interpreters use lip movement). Although interpreters have served and will continue to serve a valuable role, they should not be assumed to be providing communication at the level or quality that occurs when direct communication is possible. Garretson (1976) stated that deaf and hearing persons alike prefer direct communication without third party intervention, and that use of an interpreter is less than optimal and should be resorted to only on a real-need basis. Garretson is supported by the research of Caccamise and Blasdell (1977), whose results showed deaf college students were better able to receive sentences under simultaneous communication presentation conditions than under oral-manual interpreted presentation conditions. Specific to the audiologist Rupp (1977) stated:

In any clinical program the commodity that the clinical audiologist has to offer is service—direct, personal, and professional service to clients who have hearing handicaps. In his diagnostic regime, the audiologist may use highly sensitive electronic equipment, but the ultimate findings which he records as data are those reported to him by his listeners. (p. 10)

The use of an interpreter involves a breakdown in this service in terms of directness and personalness.

#### **CO-EXIST DEVELOP WITH, AND FACILITATE DEVELOPMENT OF ORAL-AURAL COMMUNICATION SKILLS**

Stuckless (1975) summarized the results of a series of studies conducted in the 1960's which compared children exposed to manual communication at a young age to children not having such exposure. The conclusion of Stuckless based on these studies was that manual communication is not detrimental to the development of oral-aural communication skills. Nix (1975) discussed several methodological problems with these studies. However, even with these methodological problems, two facts make it difficult to challenge the general conclusion of Stuckless. First, there are the large number of studies all showing the same trend. Second, the deaf children receiving early exposure to manual communication had deaf parents, and those who did not have this exposure had hearing parents. Therefore, the latter children had the advantage of a more oral home environment plus parents with higher English skills, academic achievement, and social-economic status.

Schlesinger and Meadow (1972) reported on two deaf children whose hearing parents began to use simultaneous communication soon after

their children's hearing losses were discovered. Results shows that between the ages to two to three years both children showed an increased use of both speech alone and simultaneous communication, with the use of signs alone decreasing. By the age of three years three months one child used speech alone 29% of the time sampled, speech and signs together 67% of the time, and signs alone 4% of the time. In addition to increased use of speech, these two children showed increased skill in using both manual communication and speechreading. Grinell et al. (1976) and Lynch and Tobin (1973) reported results which showed that the clinician's or teacher's use of manual communication with speech assisted in the development of English language skills, and this in turn led to increased vocalization and speech skills since the children now had something to say.

Several projects conducted at NTID have shown college age deaf students are able to develop and maintain simultaneous, manual and oral-aural communication skills in an environment in which all modes of communication are encouraged and supported. Walter (1977) conducted a factor analytic study of communication skills and verbal abilities for 419 students entering NTID, 1974-76 (Pure Tone Average 85 dB HL or greater in the better ear re: 1969 ANSI). Results showed oral communication skills (receptive and expressive), English language skills, and manual /simultaneous communication skills to be discrete measures. Further, both speechreading and manual reception had shared variance with simultaneous reception, indicating students were using a combination of communication skills in decoding information under the simultaneous test condition. These results are consistent with those of Stuckless and Enders (1971), who reported that 96% of NTID students surveyed stated that they used both the oral and manual components of oral-manual interpreting. Stuckless and Enders concluded:

Interpreting has traditionally been associated directly with manual communication. Yet, as borne out by the results of this study, most if not all deaf students rely heavily on the oral component of interpreting. . . these communication skills interact with each other. A good lipreader who also understands manual communication is likely to derive more from an interpreter than one who has one of these skills but not both. (pp. 8-9, 15)

Keller (1972) conducted a similar survey with deaf students attending California State University, Northridge, and results were consistent with those reported by Stuckless and Enders.

In two other studies conducted at NTID, Subtelny and Walter (1975) found that the speech and manual reception skills of 274 entering students were not significantly related, and data reported by Jacobs (in Johnson,

1978) showed that 97 students enrolled in advanced speechreading at NTID increased recognition scores an average of 40% for sentence materials related to career areas. Since the NTID environment encourages and supports the use of all modes of communication, these later results support the contention that the development of oral-aural communication skills and the use of simultaneous/manual communication are not incompatible. This contention has been further supported by Conklin et al. (1976), who studied 78 students over a two-year residency period at NTID. Results showed 75 of these students made significant gains in simultaneous communication and/or manual communication skills, with speech and speechreading skills either improving or remaining the same. The three students whose oral-aural skills regressed stopped using their hearing aids after arriving at NTID and/or they had minimal speech therapy after coming to NTID. These results are consistent with the results of a longitudinal study which compared school-age deaf children attending programs labelled as Oral-Aural, Rochester Method, or Total Communication (Weiss et al., 1975). Similar to the Conklin et al. study the Weiss et al. study supported the importance of program priorities and providing opportunities for the development of all communication skills, since the two programs showing the highest receptive oral scores and the two groups showing the lowest receptive oral scores all used oral and manual communication.

A number of facts support the importance of the face area (and speechreading) to the reception of information by hearing-impaired persons whether manual communication is or is not part of the transmission process. As previously stated, most deaf college students reported that during simultaneous interpreting they generally look at both the hands and lips (Stuckless and Enders, 1971; Keller, 1972). Given the minuteness of speech movements in comparison with many signs, this concentration of visual focus on the face, with peripheral vision picking-up the manual communication component of the message, is understandable.

Also, when simultaneous communication (direct or interpreted) is used, lip movement is often important in determining the specific words used since the same sign-word may be used as a symbol for more than one spoken word; e.g., HAVE TO-MUST-NECESSARY, CAR-AUTOMOBILE, IMPORTANT-VALUABLE-WORTHWHILE. Further support for the importance of the facial expression in communication involving the use of simultaneous/manual communication is provided by the fact that although many ASL signs are made in the face area, there are a few signs in the ASL lexicon which block the mouth area (Caccamise et al., 1977).

As stated in the previous section of this paper, (*Improved Communication for Clinician and Client*), Rosen (1975) stressed the importance of

facial expression to the deaf person in communication given the absence (or distortion) of vocal intonation, and Bellugi and Fisher (1972) stated facial expression can be part of the grammar of manual communication. Consistent with this, Baker and Padden (1976) described American Sign Language as a multi-channel synchronous transmission system. They identified five general channels in ASL communication with the face area involved in three of these channels: 1) the head; 2) the face; 3) the eyes; 4) the hands and arms; and 5) the total body orientation or posture.

In summary, information now available supports the contention that simultaneous, manual, and oral-aural communication skills can develop and can be maintained together in an environment that encourages and supports the use of all modes of communication. As with other skills, this development and maintenance is dependent on the individual taking advantage of the opportunities available to practice and develop all of these skills.

#### **ASSIST IN DEVELOPMENT OF ENGLISH LANGUAGE SKILL**

As stated in the previous section of this paper, a series of studies conducted in the 1960's showed that deaf children exposed to manual communication at a young age had speech and speechreading skills equal to those of children not having such exposure (Stuckless, 1975). These same studies showed that the children exposed to manual communication had better English reading and writing skills than the children not having this exposure. Stuckless concluded that it is highly unlikely that these studies would have produced the results they did if English and the language of signs were incompatible systems. Further, since the deaf children exposed to early manual communication had deaf parents, it is likely that most of these parents used primarily ASL. Therefore, in addition to suggesting that manual communication is not detrimental to the development of oral-aural communication skills, the results of the 1960 studies on manual communication indicated that ASL can assist in the development of English language skills.

Diebold (1966) reviewed the literature on bilingualism and reported that early exposure to two languages seemed to have negative consequences only when one language was devalued in comparison with the other. Lenneberg (1969) reported that hearing children of deaf parents learn two languages and sound systems—those of their parents and those of the rest of the community. Even in cases where children and parents communicated primarily by gestures, Lenneberg found that the English language development of the children followed the normal pattern in terms of time and stages. Schlesinger (1972) reported on the language acquisition of two hearing children who had hearing parents and a deaf

grandmother, and who were exposed to English and ASL syntax. At age two both children switched codes appropriately, signing to their grandmother and speaking to both parents. By age 3 one of the children also differentiated the syntax in code switching, using English syntax with her parents and ASL syntax with her deaf grandmother.

The authors feel compelled at this point to again reiterate the fact that speech and manual communication are modes of communication, and that both can be used to express a variety of languages, including English. For example, Holcomb (1971) reported that hearing-impaired children enrolled in a Total Communication program at age three years showed reading levels at or above grade level at age six years as measured by the Stanford Achievement Test. It is likely that these children, all of whom had hearing parents, were primarily exposed to a manually coded English system in combination with speech. Other authors have also reported on the benefits of using manually coded English systems in the development of English language skills (Brasel and Quigley, 1975 and 1977; Higgins, 1973; Milham et al., 1974).

In addition, in the education of deaf children and adults there is support for the use of bilingualism (English and ASL) and the teaching of English as a second language with native signers (Charrow and Fletcher, 1973; Collins-Ahlgren, 1974; Kannapell, 1974; Lenneberg, 1969; Newman, 1973; Schlesinger, 1972; Stokoe, 1972, 1975, 1976). Schreiber (1974-75) stated that most deaf adults use ASL, and therefore, anyone who wants to reach them socially, educationally, and psychologically should at the very least respect and accept this language.

In their discussion on language learning and types of bilingualism Riegel and Freedle (1976) stated that the goal of fusing two cultures or languages into a new "better" or "higher" system remains the ideal for many utopian movements. However, they stressed that as long as this goal remains a remote ideal, the only real hope for solving cultural and linguistic conflicts consists in the development of coordinated and cooperative conditions. Such efforts must depend foremost on mutual recognition and appreciation with both languages being accepted as separate and equal. Only then can coordination and cooperation succeed. Riegel and Freedle stated that in language this goal would be attained by comparing and contrasting the semantic structures of the two languages. Further, they suggested that monolingualism can be a true form of cultural deprivation.

Lambert et al. (1973) reported on an educational experiment which involved a comparison of three groups of Canadian elementary school children—an experimental group of native English speaking children with whom French was used as a medium of instruction, and two control groups, one enrolled in a conventional English-language school program

for native English speaking children and the other group a conventional French-language school program for native French speaking children. Results through the fifth grade level were that the experimental group: 1) performed comparable to the English control group on all measures of receptive and expressive features of English; 2) had attained a stage of functional bilingualism that permitted them to read, write, comprehend, and speak French with naturalness and fluency; 3) performed equally well as the English control group in content subjects such as mathematics and science; 4) showed no signs of negative effects on cognitive development as measured by a diverse battery of intelligence tests; 5) rejected the idea of transferring to a conventional English program while the English controls, who had had little French training other than the standard French as a second language program, favored the idea of transferring to an all English program (Lambert et al. described this as a situation of "too little" being "too much," and perhaps this is analagous to hearing persons who, having had minimal exposure to ASL, reject any use of this language in the education of deaf children in favor of using *only* a manual communication system which they consider to be more consistent with English); and 6) had a more positive attitude than the English control group toward French people from Canada and France. Lambert et al. concluded that, "... a betterment of attitudes toward the 'other' major Canadian ethnic group is as important a byproduct of the program as the development of language and cognitive skills" (p. 159). Support for the findings of Lambert et al. have been provided by Anderson and Boyer (1970), who reported on bilingual schooling in the United States. These authors concluded that, "Preliminary research indicates that, provided one of the languages is the mother tongue, children who learn through two languages tend to learn as well or better than those who learn through only one" (p. 45).

Therefore, in addition to the sociolinguistic benefits of using ASL when appropriate, there are the normal benefits that can be realized when a person's knowledge of one language is used to teach a second language. For example, ASL phrases can be useful in teaching English idioms. The English idiom "missed the boat" has the same meaning as the ASL phrase "TRAIN GONE." Competent users of ASL would likely understand the meaning of "TRAIN GONE," and it is a relatively simple task to use this ASL phrase to teach the English idiom "missed the boat." Other uses of ASL for teaching English include the use of space and sign directionality to teach the English passive voice, the use of ASL reduplication of signs to teach plurality, and the use of various ASL affixes to teach English affixes; e.g., ASL has sign-affix markers for the comparative and superlative of adjectives, the possessive, and the "verb" to "person" noun marker (*teacher, driver, etc.*).

One of the most significant findings relative to simultaneous/manual communication and the development of English language skills is data indicating that language development milestones are similar for oral and manual communication language forms:

We find in Pola's early combinations of signs the full range of semantic relations expressed by hearing children. We also find a steady increase in the length of her signed sequences that matches the increases found in hearing children. It does seem that, in spite of the change in modality, the milestones of language development may be the same (Bellugi and Klima, 1972, p. 61).

In addition to Bellugi and Klima, several other authors have reported results showing stages and time frames for development of manual language skills to be similar to those for development of oral language skills (Collins-Ahlgren, 1974; Lenneberg, 1969; Schlesinger, 1972; Wilbur, 1976). The following is a brief summary of these results:

1. Sign-Word Combinations—Reports on several children have shown the acquisition of single sign usage, two sign combinations, etc., to occur at the following ages—
  - A. First Sign—8, 12, 14 months
  - B. Two Sign Combinations—12, 20, 26 months
  - C. Three Sign Combinations—18, 24, 30 months
  - D. Four Sign Combinations—24 months.
2. Use of Single Sign-Word for Multiple Meanings—"MORE" sign used with time, quantity, and space.
3. Holophrastic Sign-Words—One example reported was use by a 15-month old child of the sign-word "SMELL" for—
  - A. "I want to go to the bathroom."
  - B. "I am soiled, please change me."
  - C. "I want the pretty smelling flower."
4. Generalization/Over-Generalization—
  - A. Use of sign-words in new combinations; e.g., "NOT" sign used in combination with "WANT," "KNOW," etc.
  - B. One member of a word class representing all members of class; e.g., "DOG" sign used for all animals.
  - C. Directionality of Signs—changing direction of verb-sign movement dependent on who or what is the subject, object, first-second-third person, in a sentence. Similar to adding a "-d" or "-ed" ending for past tense of verbs in written English, this change of movement is appropriate for some verb-signs but not others. One case of over-generalization reported involved a child who wanted her mother to fingerspell to her. Having learned the appropriate changing of movement direction for some sign-

verbs, she over-generalized and turned her hand toward herself to indicate she wanted her mother to fingerspell to her . . . "FINGERSPELL" is a verb whose directionality of movement does not vary in this manner in the signing of adult deaf.

In summary, research has shown that manual communication can assist in the development of English language skills. Also, language development patterns in terms of stages and time have been shown to be similar for orally and manually coded language forms. In the educational setting, bilingualism involving the use of ASL and English (manually coded, spoken, etc.) may be appropriate for some persons, and ASL may be used to assist in the development of English language skills. This requires that the clinician have at his disposal the means needed to assess both the English and ASL skills of clients. Given that few hearing professionals are competent users of ASL, hiring native deaf adult signers in professional and para-professional positions to conduct and assist in language evaluation of deaf adult clients is recommended. Hiring of competent users of ASL to perform and assist in language evaluation should serve to alleviate problems which have occurred owing to the misuse of the term "low verbal" deaf. Briefly, if verbal is used to refer to language, a language assessment which involves only English may not test all of the verbal or language skills of the deaf person. Too many deaf people, who are skilled users of ASL, have been labelled "low verbal" by persons who either mistakenly equate English and language, or who do not understand that ASL is a language in its own right, and not an ungrammatical representation of English.

#### USE WITH SPECIAL LEARNERS

Simultaneous/manual communication has been used with deaf blind persons for many years. Fingerspelling directly into the hands of deaf-blind persons and the use and development of special signs has benefited the deaf-blind in terms of both communication and language development. Recently, the value of signs and fingerspelling with other "special learners" has received recognition. The following is a brief summary of several studies which support the use of simultaneous/manual communication with a variety of "special learner" groups:

1. Fitch (1972) reported a case study of an 11 year old girl with cerebral palsy. The girl had been diagnosed as severely mentally retarded, and custodial care within a residential institution recommended. Hearing testing, although complicated by uncontrolled extraneous movement, revealed that the girl had a severe hearing loss. A program involving the use of oral and manual communication was begun, and within 8 months the girl had a manual vocabulary in excess of 500 words. Further,



functioning in reading and arithmetic was at a mid-first grade level, and placement in a special class for the deaf followed.

2. Wilbur (1976) suggested that in cases of dysarthria and oral apraxia manual communication may be beneficial given that the apraxia is not more generalized to include manual apraxia as well.

3. Milham et al. (1974) reported that within four months following the start of a language program involving the use of simultaneous communication, four of twelve children labelled as mentally retarded scored significant enough gains on the Leiter International Performance Scale and/or Hiskey-Nebraska Test to be referred for placement in a regular public school for deaf children who score at norms for hearing children.

4. Grinell et al. (1976) reported that use of manually coded English with trainable and educable mentally retarded students prompted development of vocabulary, correct English word sequences, and correct inflections. Further, articulation improved noticeably.

5. Lynch and Tobin (1973) described a combined oral-manual program for a 6 year rubella child who had been labelled hyperactive and in general described as having autistic behavior. Pre-therapy assessment showed the child's language skills to be at the 9-12 month level with imitative behaviors up to 24 months. Over a 13-month period following initiation of the combined oral-manual program, the child showed gains ranging from 20 to 36 months in a variety of language skills, with overall language skills at the 33-36 month level.

6. Battison and Markowicz (1974), Battison and Padden (1974), and Markowicz (1973) reported case studies with persons having brain lesions. Results showed that hearing-impaired aphasics may lose their ability to speak, while retaining their ability to sign. Based on these results it is possible that hearing aphasics who lose speech language skills may have an intact system capable of producing propositional gestures. An interesting finding by the above authors was that a linguistic distinction between signs and fingerspelling was supported at the neuropsychological level since signs and fingerspelling were differentially impaired.

In summary, manual communication has been shown to be beneficial for communication purposes and language development with a variety of special learners, including deaf-blind persons, persons with motor problems, the mentally retarded, and persons labelled as aphasic and autistic. Further, the inclusion of manual communication as part of an educational program for persons labelled as mentally retarded, autistic, and aphasic has yielded results suggesting that misdiagnoses of such persons may occur if all avenues of communication and language are not explored.

**AN OPPORTUNITY TO UNDERSTAND HUMAN LANGUAGE,  
COMMUNICATION AND INTELLIGENCE BETTER**

The creative manner in which signs and fingerspelling can be used in communication is evident to anyone who has had the opportunity to view a performance by the National Theatre of the Deaf, a play at Gallaudet College, a play at the National Technical Institute for the Deaf, and/or a "musical" performance by the Rock Gospel. However, creativity in human communication involving the use of formal and informal "body language" is not restricted to the stage or formal performances. Creative use of signs and fingerspelling in the daily communication of deaf persons has been described by Battison (1977), Bellugi and Klima (1972), and Klima and Bellugi (1975). A description of such creativity through the printed word alone would be insufficient without detailed explanation. Rather than attempt such description here, readers are encouraged to read the reports by Battison and Bellugi and Klima, to enjoy a performance by any of the groups listed above, and/or to attend a local club for the deaf in order to have a "first hand" experience with such creativity. The authors of this paper are satisfied to further motivate our readers by ending this section with a quotation from Bellugi and Klima (1972):

Sign language, it is clear, is far more than mystical hand waving. Its range and diversity permit humor and pun, song and poetry, whimsy and whispering. . . the study of sign gives us insight into the structure of language and the universality of communication, but even more it attests to the richness of human intelligence and imagination. (p. 76)

**WHICH MANUAL COMMUNICATION SYSTEM  
IS MOST APPROPRIATE?**

Once a decision has been made to use manual communication as part of a rehabilitation program with a hearing-impaired client, another important decision needs to be made—Which manual communication system or language should be used? Basically, the clinician has a choice of using ASL only, a manually coded English system only, or a bilingual approach involving the use of ASL and a manually coded English system.

Although much discussion and controversy exists relative to the use of either ASL or a manually coded English system which adheres in as strict a sense as possible to English, the reality is that most hearing persons and many deaf persons generally use a manually coded English system which incorporates features of both ASL and English. This mixed system may be labelled Pidgin Sign English (for a more detailed discussion of this, see

Cokely and Gawlik, 1973). This mixture is understandable and probably appropriate given the following facts:

1. If development of English language skills is an important goal, and clients need to communicate with people whose native language is English, then the important features of English need to be considered in the manual communication system used.

2. Naturally evolved "sign languages" (such as ASL) may be expected to have maintained and developed those characteristics or features which facilitate efficient and effective communication, and deleted or dropped those features which do not. Therefore, in selecting a sign system to use, consideration should be given to those structural features which are important in naturally evolved manual communication systems such as ASL.

Given the fact that manual communication involves visual processing and speech involves auditory processing, a manual communication system based on the spoken word alone would likely present processing problems for the human visual system. Similar problems in expression may also be expected to occur for systems which attempt to adhere to spoken English too closely, resulting in a significant disruption in the normal flow of speech when simultaneous communication is used (see Wilbur, 1977, for further discussion of this).

3. The native language of most hearing and many hearing-impaired persons is English. Therefore, regardless of how and what they are taught in manual communication classes, there will be a tendency for such persons to sign in a manner which is more or less consistent with English.

4. There are differences between written and spoken English, as well as irregularities within both of these modes for expressing English. For examples, consider the differences between the spelling, pronunciation, and/or meaning of the following underlined word pairs—

- A. He read the book.  
The book is red.
- B. Turn right.  
Please write your name.
- C. I object to that.  
Put the object on the table.
- D. He left the house.  
He turned left.

Also, there are regular and irregular forms of the past tense of verbs, of noun plurals, etc., in English. Given the inconsistency between written and spoken English, and the irregularities within each of these, it is unreasonable to expect any manual communication system will have a one-to-one relationship with written and/or spoken English.

5. Many features or characteristics of signing that are commonly asso-

ciated with ASL may be incorporated into a manually coded English system. In essence, such features are effective means of expressing any manually coded language, be it ASL or an English code. Among the ASL features easily incorporated into a manually coded English system are: a) ASL affixes which have English equivalents; b) the use of reduplication or repetition of signs for plurality; c) holding the last sign in a sentence to help mark a question; d) the use of number incorporation into time signs; e) the use of space to distinguish among time periods (past behind the body, present near the body, future in front of the body); and f) the use of verb directionality to indicate actor and agent or subject and object of a sentence.

In conclusion, a manually coded English system which takes into account the salient features of both English and ASL will allow the clinician to communicate with the largest number of clients. However, a caution is necessary. A deaf person who uses primarily or strictly ASL, and whose written English skills are low, will likely require a clinician or an interpreter who is a skilled user of ASL to ensure adequate communication. The most important need is effective, unambiguous communication. Therefore, flexibility must be maintained not only in terms of modes of communication used, but also in manual communication systems or languages used. Further, the importance of ASL, both in terms of teaching English as a second language to some deaf adults and in terms of sociolinguistic considerations, must always be kept in mind. The use of the term "low verbal" deaf for hearing-impaired persons who are competent users of ASL is not only a professional disservice, but an insult to the competent language user of ASL.

#### SUMMARY AND CONCLUSIONS

The benefits of using simultaneous and manual communication in rehabilitation with the adult deaf client have been discussed. These benefits include: 1) improved communication between clinician and client; 2) development and maintenance of oral-aural communication skills; 3) development of English language skills; 4) use with "special learners" (deaf-blind, mentally retarded, etc.); and 5) improved understanding of the creativity of human language, communication, and intelligence.

A breakdown in the communication process is the major problem confronted by the deaf person. This breakdown can best be dealt with through a sharing of responsibility for communication by client and clinician. In general, simultaneous communication will result in more effective communication between the client and clinician than either manual communication alone or oral-aural communication alone. Be-

cause of this fact, plus the importance of developing and maintaining oral-aural communication skills, simultaneous communication is generally the preferred mode of communication in rehabilitation with the deaf adult client. However, for clients whose native language is ASL and whose English language skills are minimal, use of ASL may be more effective than simultaneous communication. The importance of ASL to the deaf adult client-clinician relationship needs to be taken into account not only in terms of communication and the use of ASL to teach English as a second language, but in terms of the sociolinguistic implications of ASL as well.

The trend in education of hearing-impaired children and adults is toward the use of manual communication within Total Communication Programs, and it may be expected that more and more deaf adults will be using simultaneous communication as their primary and best means of communication. If professionals serving in rehabilitation positions with the adult deaf develop the necessary prerequisites for working with the adult deaf as outlined by Johnson (1978), then the goal of providing more organized and better services for *all* hearing-impaired adults will come closer to fruition.

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**FOOTNOTES**

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<sup>1</sup>Total Communication (TC) and simultaneous communication (SC) are often equated. However, simultaneous communication is only one method of communication that may be used in a Total Communication program. Holcomb (1975) has emphasized the difference between TC and SC. He stated that the goal of TC is full communication for all, and since many deaf people do not know manual communication nor can they speechread, SC would be little or no communication at all for these people. A more indepth discussion of the difference between TC and SC is presented in Caccamise and Drury (1976).