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ABSTRACT

This paper examines the cognitive-linguistic development of young deaf children and some associated theories. The premise that linguistic processing begins initially and most effectively through visual linguistic processing within the context of the social environment is stressed. Social learning theories which emphasize the importance of the meaningfulness of the child's environment and the role of active involvement and problem solving in learning are noted. Evidence that the language acquisition process is independent of either vision or hearing is offered. Visual gestural communication (VGC) is presented as a proto-language which is a strong facilitator of language acquisition. Examples are offered of the use of VGC to communicate across linguistic barriers, along with documentation that early use of gestural communication enhances language acquisition in hearing and deaf infants. The effectiveness of VGC is seen to be its basis in pragmatics. Hearing parents are reported to learn American Sign Language much easier after exposure to VGC. It is suggested that literacy development can also be fostered by VGC since literacy also draws on visual and manipulative experiences. (Contains 34 references.) (DB)

VISUAL GESTURAL COMMUNICATION:

ENHANCING EARLY COMMUNICATION AND LITERACY IN YOUNG DEAF AND HARD OF HEARING CHILDREN

Presented at the 18th International Congress on Education of the Deaf

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by

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"There was speech in their dumbness, language in their very gesture."
-- William Shakespeare (in *A Winter's Tale, V,iii, 13-14)*

Lev Vygotsky (1986) describes the relationship between thought and language. He noted that "a word devoid of thought is a dead thing". It is central to an understanding of how and why the average deaf child encounters difficulties in mastering language and literacy. Vygotsky has theorized that the child's way of thinking is influenced by the child's linguistic environment. If the language climate is simplistic and primitive, then the child would think accordingly. He goes on to explain that, in a more complex linguistic, environment, children's thinking would correspondingly become more complex, *provided that their initial biological equipment is unimpaired.* Vygotsky is correct in one sense and, on the surface, deafness could be considered as a barrier against the development of verbal thought, However, if we are to consider the underlying biological foundations of language as being independent of hearing or vision (Petito, 1993), then the deaf child does not have any impairment as long as his/her other sensory functions remain intact.

The question remains: why do so many deaf children have problems in acquiring language and literacy and clearly expressing their thoughts? We refer back to the Vygotskian impairment. It is our position that the impairment lies not within the deaf child but within the child's social environment. In other words, it is the inability of the child's social environment to properly equip him/her with the necessities for the development of language. Paddy Ladd (1978) describes the orally-based linguistic environment in which most deaf children are raised: "No, the environment is not oral, it is *meaningless.*" In essence, many deaf children are being fed "empty calories" in nurturing their linguistic growth. There is a great deal of truth in Abberley's (1987) contention that impairment is a social product. Jamieson (1995, p. 76), after studying the "private speech" of preschool deaf children from a Vogotskian perspective, agrees:

> "The Deaf children in this study who had been exposed to a rich, reciprocal early language environment with their Deaf mothers demonstrated that childhood deafness is not, in and of itself, an impediment to the development of discourse-based cognitive skills."

We examine the cognitive-linguistic development in young deaf children and some theories surrounding it, We begin with the premise that linguistic processing begins initially and most effectively through visual linguistic processing (Debes & Williams, 1978). Jean Piaget (1952, Inhelder & Piaget, 1958) believed that the child's knowledge develops independently of language in which actions, or schema, provide the foundations for logical thought. He also believed that the child's language behavior depended on his visual schema and organization emphasizing the importance of the child's social environment on children's

cognitive and linguistic development. Lenneberg (1972), expanding on Piaget's theory and applying it to the deaf child, notes that the building blocks for language were provided by the social environment which are broken down by the child into principles and resynthesized as his/her own language. To further underscore the importance of the deaf child's social environment, restricting his social environment can be devastating to his/her social and cognitive development (Lenneberg, 1972 and Lieben, 1975). This is best expressed by Robert Chorost's (1987, p. 193) description of his pre-language experiences as a young deaf child:

> "Without language the world makes little sense. Nonlanguage is chaos, a film without sound or script, only scenes and motion. People appear and disappear, or sit still for hours watching smaller people in boxes; cars swoop one way to white rooms; the moon follows one around; the white house at the corner is obscurely and deeply frightening. My mind was all '?' and '!' and '?!' --- the last reserved mostly for doctors.
>
> "Consequently, I was what I call 'meaning starved.' Perhaps the brain needs language in order to operate, just as lungs need air in order to behave like lungs."

Social learning theories, notably those of Rotter and Hochreich (1975) and Bandura (1971) shed more light on the matter. Rotter and Hochreich emphasize the importance of the meaningfulness of the child's environment in shaping the child' personality. Bandura believes that the child's personality and behavior are shaped through an observation of others' behavior, or modeling. Rotter's point about the meaningful environment is not lost upon those who are familiar with deafness. A deaf child is typically raised in a "hearing" environment in which crucial socio-cultural information is all but invisible to him. Here we are reminded of Ladd's comment.

We wish to further emphasize this importance of social environment by citing Bruner's (1975, 1977) theory. He believes there is a strong, direct relationship between the quality of the mother-child relationship and the child's language development. He states the child's grammatical structure is germinated by such a relationship: "I would not be surprised if the otogenetic development of joint action between the mother and child contributed to the mastery of grammar to the cracking of its code" (Brunner, 1975, p. 274). He considers the element of play in communication, or in his words, "playful ambiance," crucial. He comments:

> "When things become too 'serious' and intention-bound, communication regresses to the level of demand and counter-demand. . . the stimulative conventionalized and

rule-sensitive spirit of play seems to be a **sine qua non** for language learning" (p. 288).

Bruner's point is supported by Schlesinger (1972) who stressed that parents' enjoyment of the deaf child has salutary effects on the child's language development.

Wood (1988) analyzes Piaget's and Vygotsky's theories and compares then with those of Bruner's. Wood notes that Piaget's theories focus on the structure of mature thinking while those of Bruner emphasize the process. Bruner believes that these processes vary from individual to individual, placing importance on action and problem-solving in learning. Wood also notes that Vygotsky puts language and communication at the core of intellectual and personal development and that his primary concern lay in the understanding of the natural evolution and transmission of human culture as opposed to Piaget's biological standpoint. Vygotsky's goal was to integrate psychology with an analysis of socio-cultural factors such as history, art, literature, and sociology. In this ciliate, children's learning is natural and spontaneous, based on social practices within which communication takes place. This is at the heart of Bruner's theory which essentially states that language learning should be the outcome of non-intentional and informal teaching situations. Wood then suggests that asking a very young child to "pay attention, concentrate, study, learn or remember is unlikely to bear fruit" (p. 61). He concludes that when children are asked to learn in such a fashion tasks set out by adults which provide little by way of perceptual support, they may find it impossible to comply with the adults' demands. Carver (1989) agrees that it is an important point in terms of having young deaf children learn the majority language of the hearing society. If they have insufficient perceptual support such as a defective auditory channel, it may be unrealistic to "teach" them such skills.

We come to the crucial period for language acquisition. The first five years have been considered the most crucial for any child's language development. Chomsky (1965) believes that each child has an innate ability to acquire language on his/her own from his/her social environment and this ability is at its peak during the first five years of the child's life which he terms as the "Language Acquisition Device" (LAD). Montessori (1967) also echos this belief by describing language as a process that "begins and unfolds in the darkest depths of the unconscious" (p. 111). Chomsky also notes that the young child is capable of acquiring more than one language effortlessly during this period. It is a crucial point as extensive studies over the last two decades provide overwhelming evidence to the effect that the bilingual child tends to score higher in IQ tests and to perform better academically than the monolingual child.

There is no longer any dispute over the fact that the indigenous, natural sign languages of the Deaf are bona fide languages and that language can be acquired through vision alone just as effortlessly as through hearing, including even

the written languages of the dominant hearing societies (Chorost, 1987; Carver, 1989). Yet, we are faced with the paradox of trying to develop language through the deaf child's weakest sensory channel during the crucial LAD period when he/she already possesses the full ability to acquire it through his/her strongest sensory channel: vision.

This brings us to the deaf child's extraordinary capacity for learning language through vision. Petito's research (1978, 1991, 1992, 1993) on early gestural communication and manual babbling in deaf infants and toddlers give strong credence to the theory that language acquisition process is independent of either vision or hearing. In other words, no sensory channel has an exclusive "hold" on the language development processes, and any sensory channel (with the possible exception of smell and taste) is a legitimate vehicle.

Lane (1984) refers to the story of Jean Massieu, a Deaf Frenchman in the 18th century who grew up without a formal language, communicating instead in gestures and home made signs within his hearing family. It was not until he stated school at the age of 13 that he began to learn French and the French Sign Language , soon excelling in both. A study in which oral preschool deaf children were videotaped showed that they created their own gestures to describe persons, objects and actions despite efforts to encourage speech (Goldin-Meadow & Feldman, 1977). We both recall doing exactly the same thing when we attended oral programs as young children. Such examples illustrate the strong innate predilection of deaf children towards visually based forms of communication.

For the purposes of this paper, "visual gestural communication (VGC) requires definition. It is not a language. Rather, it might be more appropriately described as a "proto-language." Basically, VGC consists of non-verbal cues such as iconic gestures which describe certain actions, facial expressions to convey emotions and rhetorical questions, body language, pointing tat certain objects or colors, and pantomime within a visual frame from the head to the chest. VGC, in the purest sense, transcends elements of formal sign language or spoken language, although sign language are subsets of VGC (Baker & Cokely, 1980). For example, different types of drinks can be identified through gestures, Examples: holding a glass under tap with the other hand twisting the faucet signifies water, making a cow's horns and rhythmically squeezing the cow's udders signify milk, holding a bottle with the other hand making the motion of twisting a corkscrew and pulling out the cork describes wine.

The experiences of the authors in this area demonstrate the value and viability of VGC as a strong facilitator of language acquisition. The fact that we were able to communicate with foreign Deaf person in a matter of minutes or hours through VGC whereas hearing persons require interpreters or weeks of immersion in a foreign language to be able to communicate with foreign hearing persons bears eloquent testimony to the power and versality of VGC. One of the

authors, Dr. Kemp, who traveled extensively throughout the world and met with many different Deaf persons reports that he was able to learn their own sign languages through the medium of VGC within a few days. The experiences of thousands of Deaf persons communicating with each other through international gatherings such as the World Games of the Deaf, the World Congress of the Deaf, and the "Deaf Way" lend credence to this view. Based on these observations, it is our view that gestural communication accelerates the acquisition of formal language, be it signed, written or spoken.

Studies of hearing children who used gestural communication in early infancy and early childhood show that it has enhanced their language acquisition, (e.g. Williams, 1976, Holmes & Holmes, 1981, Goldin-Meadow & Morford, 1994, Caselli, 1994). This is not surprising as much of early learning is visually-based. In fact, Piaget believes that language behavior is dependent on the child's visual schema and organization, a view that is echoed by Debes and William (1978) who compare visual-verbal development with auditory-verbal development during early childhood and find that visual-verbal begins much earlier and progresses more rapidly than auditory-verbal development.

This fact has been recognized by Joseph Garcia in his new book, *Toddler Talk* (1994), in which he advocates the development of visual gestural communication and sign language in young hearing children of hearing parents, citing the salutary effects of such communication on the development of spoken language skills and literacy in the children. he states (p. 16):

> "Most infants' vocal cords must develop for sixteen or more months before they can produce clear words. And usually, children don't begin speaking in two- and three-word sentences until around their eighteenth to twenty-first month.
>
> "However, visual and muscular coordination are in place much earlier than that - long before vocal skills mature. In other words, your infants have the ability to use their hands to make signs before they can use speech to clearly communicate, With Toddler Talk, you will give your infants a way to express themselves which will be more precise and effective than smiling, cooing, and crying. Your toddlers can use single signs (and many times several signs together) nearly one year before they effectively use speech."

The key behind the effectiveness of early VGC is its rich footing in pragmatics. Pragmatics has been identified as the fourth aspect of language after syntax, semantics and phonology. Simply defined, pragmatics are described as the

"behavioral effects" of communication which provide clues to the context of communication (Watzlawick, Beavin & Jackson, 1967). Hörmann (1986, p. 77) identifies pragmatics as the key concept towards an understanding of psycholinguistics: "Now the speaker/listener in the act of using language is the point of interest most linguistic considerations have only a value as a stimulus for genuinely psychological approaches." Pragmatics have been identified as the missing communication link in the mastery of communication and language as they provide the basis of linguistic and communication competence (Kretschmer & Kretschmer, 1978, Wood, Wood, Griffths, & Howarth ,1986, Carver, 1989). Without pragmatic support, it is difficult for the deaf child to master language skills. It raises questions about the wisdom of denying young deaf children the opportunity to initially use visual gestural communication.

Among the main arguments against young deaf children starting with sign language is that most parents find it difficult to learn a new language - sign language - virtual overnight. Consequently, the deaf child's language and cognitive development might suffer from his/her parents' inability to learn sign language. Ever since VGC became a regular feature of the Sign Language Program of the Deaf Children's Society of British Columbia, parents have found it much easier to learn American Sign Language (ASL) after starting with VGC. Parents who try to learn ASL without the benefit of VGC often struggle. The reason for this is simple. They are actually learning two different things at the same time: (1) a new language and (2) a completely different mode of communication. This initial footing in VGC enables them to overcome their initial shyness and inhibitions over using their body, hands and facial expressions to communicate. Once they gain confidence in gestural communication, they learn ASL more easily and quickly.

Keeping in mind the innate ability of the infant to incorporate and make sense of visual schema well before auditory schema, it is crucially important that parents of deaf infants start utilizing VGC immediately upon diagnosis of deafness in order to start developing the child's cognitive structure. Observations of young deaf and hard of hearing children in the Deaf Children's Society of British Columbia who have been exposed to such communication bear strong testimony to its viability. A four-year old profoundly deaf child in the program was recently assessed at the British Columbia Children's hospital for language. It was found that her language was equivalent to that of a normal six-year old child. She is able to discuss various topics such as human sexuality, life and death, relationships between different persons and so on. The key to her success is, of course, her parents, who treated her just like any child and enjoyed raising her. Here we are reminded of Bruner's and Schlesinger's point.

We come to literacy. There is no question that literacy is rapidly gaining credence as a primary concern of education of the deaf. The Canadian Association of the Deaf (C . A. D.) states in its position paper on literacy, which was adopted in 1989 (C. A. D., 1989):

> "The C. A. D. attributes the literacy and educational problems of deaf Canadians to the impaired communication environment surrounding them, to the deficit model orientation of early intervention, education and teacher training programs, and to the dearth of qualified Deaf professionals and educators in all such programs.
>
> "The C. A. D. subscribes the principle that literacy is the crucial access point for deaf Canadians to all aspects of the hearing world and that it take precedence over spoken English and French skills in all of the above programs."

How does literacy tie in with VGC? Literacy draws on the same strengths as VGC: vision and manipulation. The young deaf child is fully equipped for literacy as far as his/her physical abilities are concerned. Literacy does not require hearing and speech. In fact, many deaf persons have successfully bypassed speech and became proficient readers and writers (Carver, 1989, Chorost, 1987).

Observations of young deaf children reading with their parents at the Deaf Children's Society of British Columbia have amply demonstrated that it is not necessary for parents to be fluent in ASL in the beginning when reading with their children. Parents of young deaf children in general always enjoy looking at books with their parents. They "love it when parents 'act out' the stories through mime, body language, facial expressions, gestures and voice inflection. Many parents have discovered that deaf children really follow the stories in this manner" (Deaf Children's Society of B. C. 1995, p. 5). Parents are encouraged to watch carefully to see what the child is looking at and to use facial expressions of whatever catches the child's attention and to be always animated in their communication. Role-playing of popular children's stories such as *Goldilocks and the Three Bears, The Three Little Pigs,* and *Little Red Riding Hood* through mime and even using props is also encouraged. The objective is to get the deaf children hooked onto books from the earliest possible age.

The effective combination of VFC and early literacy will go a long way in festering a love of reading in young deaf children. Parents and professionals have an obligation of the highest order to these children to use whatever means possible to make it happen.

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