

MANUAL COMMUNICATION

Authored by
mohammad looti

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Manual Communication

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1. Core Definition

Manual communication refers to any system of conveying meaning or information that relies primarily, if not exclusively, on the movement, positioning, and orientation of the hands, arms, and associated upper body gestures, rather than on the vocal apparatus producing spoken sound. Fundamentally, it serves as a critical alternative modality to traditional oral communication, utilizing visual and kinetic channels for message transmission and reception. The source content explicitly defines this phenomenon as communication that relies solely on the movement of hands, in opposition to verbal communication, thus establishing an immediate association with signing. This comprehensive definition encompasses not only fully developed sign languages, which possess their own complex grammar and lexicon, but also various forms of coded signals, occupational gestures, and rudimentary home signs used in specific contexts.

The distinction between manual communication and general nonverbal communication (kinesics) is important. While all manual communication is inherently nonverbal, not all nonverbal communication is manual; it may involve facial expressions, posture, or proxemics. Manual communication specifically harnesses the fine motor capabilities of the hands and wrists to articulate symbolic structures. The core function, as highlighted by the provided material, involves the hands being utilized to communicate "instead of the tongue producing speech," underscoring the functional equivalency between the visual-manual and the auditory-oral modalities in human language capacity. This concept challenges the historical bias that often prioritized vocal speech as the default or superior form of linguistic expression, placing manual signing on equal footing as a sophisticated system for complex thought exchange.

2. Linguistic Frameworks and Modalities

Within the study of linguistics, manual communication is primarily explored through the examination of sign languages, which function as complete, natural languages. These languages adhere to the fundamental organizational principles observed in spoken languages, including distinct levels of structure, such as phonology (or, more accurately, cherology in sign language studies), morphology, syntax, and semantics. The basic units of manual communication--known as parameters--are analogous to the phonemes of spoken language. These parameters include handshape, location (the place where the sign is made, e.g., forehead or chest), movement (the action of the hands), and orientation (the direction the palm faces). Furthermore, non-manual markers, such as specific facial expressions, head tilts, and eyebrow movements, play crucial

grammatical roles, often conveying syntax, mood, or adverbial information, highlighting the holistic nature of manual linguistic expression.

The linguistic robustness of manual communication is evident in its ability to express abstract concepts, embed clauses, and manage discourse cohesion. Studies have demonstrated that sign languages exhibit complex grammatical structures, including mechanisms for verb agreement, aspectual marking, and spatial referencing (utilizing the signing space, or 'signing sphere,' surrounding the body). These features confirm that the manual modality is fully capable of supporting the full range of human cognitive and linguistic needs. The structure of manual communication systems, therefore, moves far beyond simple pantomime or iconic gesturing; it represents a rule-governed system where meaning is generated through systematic contrasts and combinations of manual and non-manual features.

Beyond fully structured sign languages, manual communication encompasses various coded systems. This includes fingerspelling, where hand configurations represent the letters of a written alphabet (e.g., the American Manual Alphabet). While fingerspelling is often used to convey names or technical terms for which no standard sign exists, it is typically integrated into the structure of a sign language rather than being the primary means of communication. Other forms include manual codes for professional environments (such as signals used in aviation or diving), which are often prescriptive and context-specific, lacking the expansive generative grammar of natural sign languages.

3. Etymology and Historical Development

The practice of manual communication likely predates recorded history, existing as a foundational element of human interaction before, or alongside, formalized spoken language. Anthropological evidence suggests that early hominids may have relied heavily on gestural communication due to physical constraints of the vocal tract or the need to communicate silently while hunting. The historical development of formalized manual systems, however, primarily tracks the documented history of deaf communities. Prior to the establishment of formal deaf schools, deaf individuals often developed "home signs"--idiosyncratic, localized systems of manual communication used within specific families--to interact with hearing relatives. These home sign systems, though limited, demonstrate the innate human drive to establish complex visual-manual communication when auditory-oral channels are inaccessible.

The institutionalization of manual communication began in the 17th and 18th centuries with pioneering educators. Notable figures like the Abbé de l'Épée in France established schools that aggregated students from diverse regions, leading to the creolization and standardization of local home signs into nascent, widely recognized sign languages, such as French Sign Language (LSF). This process was critical, demonstrating that manual communication could spontaneously evolve

into a complete language when a critical mass of users was brought together. The spread of these formalized languages was often rapid; for instance, American Sign Language (ASL) developed largely from LSF brought to the United States in the early 19th century by Thomas Gallaudet and Laurent Clerc.

Despite this successful development, the history of manual communication is marked by periods of suppression. The infamous Milan Conference of 1880 initiated a global shift toward oralism, banning the use of sign language in most educational settings for the deaf. This period caused immense harm to deaf culture and education, forcing many deaf individuals to rely on residual speech and lip-reading, which are often highly ineffective. The subsequent resurgence and validation of manual communication occurred in the mid-20th century, largely due to the groundbreaking work of linguists like William Stokoe, who formally demonstrated that ASL possessed the structure and complexity of any spoken language, leading to its acceptance as a legitimate linguistic system and catalyzing modern research into manual modalities.

4. Key Characteristics and Components

Manual communication is characterized by several distinct features that differentiate it from vocal speech. Firstly, its modality is **spatial-visual**. Unlike acoustic signals, which are sequential and temporal, manual signs utilize three-dimensional space for simultaneous representation. For example, a single sign can simultaneously convey the root verb, the subject, the object, and sometimes the manner of action by integrating various handshapes, orientations, and movements within the signing space. This simultaneous layering allows for high information density within a single articulation.

Secondly, **iconicity** plays a variable but significant role. While many signs in natural sign languages are arbitrary (meaning there is no visual connection between the sign and its meaning, just like in spoken languages), a greater proportion of signs exhibit some degree of iconicity, where the sign visually resembles the concept it represents (e.g., the sign for 'tree' often mimics the structure of a tree). However, it is crucial to understand that even iconic signs are conventionalized; they must be learned and recognized within the specific linguistic community, proving that they are linguistic symbols rather than mere mimesis.

Thirdly, manual communication inherently relies on the active engagement of the visual system. Receivers must maintain constant visual attention to the signer's hands, face, and body. This requirement places unique demands on cognitive processing, particularly visual attention and memory, which are specialized for tracking moving spatial objects. Key components of manual communication systems therefore include:

Parameters of Articulation (Cheremes): The five elements (Handshape, Location, Movement, Orientation, Non-manual features) that combine systematically to form distinct signs.

Signing Space: The defined area in front of the signer's body where signs are produced, which is crucial for grammatical elements like pronominal reference and verb agreement.

Non-Manual Markers (NMMs): Facial expressions and body posture that carry inflectional, grammatical, or emotional information essential for the complete transmission of the message.

5. The Role of Sign Language Systems

The most sophisticated examples of manual communication are natural sign languages, such as American Sign Language (ASL), British Sign Language (BSL), and Japanese Sign Language (JSL). These languages are not universal; just as spoken languages differ geographically, so too do sign languages, reflecting independent cultural and linguistic evolution. They are utilized by vibrant deaf communities worldwide, serving as the primary vehicle for cultural transmission, education, and social interaction within the deaf world. The recognition of these systems as legitimate languages has profoundly impacted policies regarding deaf education and rights.

Sign language systems play a vital role in cognitive development. For deaf children exposed to a sign language from birth (often referred to as native signers), the language acquisition process mirrors that of hearing children acquiring spoken language, including babbling phases (manual babbling) and critical periods for language learning. Research confirms that acquiring a manual language provides a complete foundation for abstract thought, literacy development, and overall cognitive function. Conversely, deaf children deprived of early access to any language (either spoken or signed) suffer from language deprivation syndrome, highlighting the essential need for complete manual communication access.

Furthermore, sign languages have found applications beyond the deaf community. They are increasingly used by hearing people in fields requiring silent communication (e.g., theater, hospital operating rooms) or in educational settings as a tool to aid early language development in infants (Baby Sign Language), demonstrating the practicality and cognitive benefits of integrating manual modalities into broader communication practices. The utility of manual communication extends far beyond remediation for auditory loss; it represents a powerful, distinct linguistic pathway.

6. Cognitive and Neurological Mechanisms

Neurolinguistic research has provided compelling evidence that the brain processes manual communication using the same cerebral regions that process spoken language, primarily the left hemisphere areas associated with language comprehension and production, notably Broca's area and Wernicke's area. Functional magnetic resonance imaging (fMRI) studies of native signers show activation in these classical language centers when processing signs, indicating that the human brain is optimized for language structure, irrespective of the sensory modality (auditory or visual-manual).

The production of manual communication involves sophisticated motor planning. Signing requires precise coordination of multiple joints and muscle groups to execute complex spatial trajectories and specific hand configurations. This relies on extensive interaction between motor cortex areas and sensory feedback loops. Interestingly, research suggests that the visual perception of signing also engages brain systems related to action observation, such as the mirror neuron system, which may facilitate understanding by internally simulating the observed movement. This neurological overlap suggests deep integration between human language, gesture, and action recognition systems.

Bilingualism in the context of manual communication (e.g., an individual fluent in ASL and English) presents unique cognitive advantages, similar to those seen in spoken language bilinguals, including enhanced executive function and cognitive flexibility. The mental transition between the visual-manual and the auditory-oral modalities requires advanced switching mechanisms, reinforcing the cognitive rigor inherent in managing multiple linguistic systems based on fundamentally different sensory inputs.

7. Significance and Sociological Impact

The sociological significance of manual communication, particularly through sign languages, is immense. It forms the backbone of deaf culture, providing a collective identity, shared history, and robust social network for deaf individuals globally. The existence and use of manual communication systems assert the linguistic and cultural rights of deaf populations, moving the perspective away from disability (a medical model focusing on hearing loss) towards a socio-cultural model where deafness is viewed as a linguistic minority status.

The recognition of sign language as a valid form of manual communication has been pivotal in advancing legal and educational accessibility. It necessitates the provision of qualified sign language interpreters in governmental, educational, and medical settings, ensuring equal access to information and participation in broader society. Policies in many developed nations now mandate the teaching of national sign languages, acknowledging their role in human diversity and communication infrastructure.

8. Debates and Criticisms

Historically, the primary debate surrounding manual communication centered on the effectiveness of pure signing versus oralism in deaf education. While linguistic science has overwhelmingly validated sign languages as superior for native deaf communication and cognitive development, vestiges of the oralist philosophy persist, sometimes leading to controversy over pedagogical methods. Another ongoing debate involves the use of Manually Coded English (MCE) or other artificially constructed sign systems that attempt to represent spoken language grammar verbatim

using signs. Critics argue that MCE systems are unnatural, cumbersome, and less efficient than true sign languages, potentially hindering linguistic fluency.

Furthermore, there is academic discussion regarding the universality and limits of manual communication systems. While some gestures (like pointing) are near-universal, complex linguistic structures are highly localized. Researchers continue to explore the degree to which environmental factors (such as climate or lighting) influence the structure or speed of manual communication and how different sign languages manage constraints posed by physical signing space and visibility. These discussions contribute to a deeper understanding of the constraints and potentials inherent in multimodal communication pathways.

Further Reading

[Sign language \(Wikipedia\)](#)

[Sign language \(Britannica\)](#)

[American Sign Language](#)

[Linguistics of sign language](#)