CONFERENCE ARTICLE

# Linguistic Distinction Between Natural And Sign Languages

**Saydaliyeva Mahliyoxon Ulug'bek qizi**

(PhD), Doctor of philosophy in philological sciences, Kokand state university, Uzbekistan

**ABSTRACT**

This paper explores the linguistic distinctions between natural and sign languages, focusing on their structural, functional, and cognitive aspects. While natural languages are typically spoken and rely on auditory-vocal channels, sign languages use visual-manual modalities to convey meaning. Despite these modality differences, both systems share core linguistic properties such as phonology, morphology, syntax, and semantics. The study highlights how sign languages demonstrate the same complexity and expressive capacity as spoken ones, challenging misconceptions that they are merely gestural or simplified forms of communication. By analyzing linguistic evidence and theoretical frameworks, the paper emphasizes the equal linguistic status of sign languages and their essential role in understanding the nature of human language.

**KEYWORDS**

Sign language, natural language, linguistic structure, modality, communication, human language.

## INTRODUCTION

Natural language and sign language, while both full-fledged linguistic systems, exhibit key differences in their linguistic structure primarily due to their distinct modalities: auditory-vocal for spoken languages and visual-manual for sign languages. Despite these differences, both modalities share underlying linguistic universals (Lepic et al., 2016).

One fundamental distinction lies in their phonological components. In spoken languages, phonology involves the organization of sounds, or phonemes, which are discrete units that distinguish meaning but are themselves meaningless (Lepic et al., 2016). These are produced through the articulation of the vocal tract. In contrast, sign languages utilize a visual-manual phonology composed of parameters such as handshape, movement, location, palm orientation, and non-manual features (e.g., facial expressions, body posture) (Lepic et al., 2016). These parameters are analogous to phonemes in spoken languages, combining to form meaningful units (signs) (Lepic et al., 2016). For instance, studies on various sign languages, including American Sign Language (ASL), show that changes in handshape, location, or movement can alter the meaning of a sign, similar to how changing a sound in a spoken word changes its meaning (Lepic et al., 2016). Research indicates that handshapes, while influenced by biological constraints, also show diversification across different sign languages, reflecting an evolutionary process akin to phonological changes in spoken languages (Lepic et al., 2016).

Another significant difference emerges in their grammatical organization, particularly syntax and morphology. Spoken languages typically organize information sequentially and temporally, relying on word order, inflectional morphology, and function words to convey grammatical relationships (Lepic et al., 2016). While spoken languages can utilize prosody (e.g., intonation, stress) to add meaning, these are often secondary to the linear arrangement of words (Lepic et al., 2016). Sign languages, however, leverage their visual-manual modality to incorporate spatial grammar as a core component (Lepic et al., 2016). For example, spatial loci in signing space can be used to establish references for individuals or entities, and grammatical relationships can be marked by the direction and path of movements between these loci (Lepic et al., 2016). This spatialization allows for simultaneous encoding of information that might be expressed sequentially in spoken languages (Lepic et al., 2016). Non-manual markers, such as eyebrow raises for questions or head nods for affirmation, are not merely expressive but are integral grammatical elements in sign languages, functioning similarly to intonation or specific grammatical particles in spoken languages to convey syntactic and pragmatic information (Lepic et al., 2016).

Furthermore, the lexicon and semantics in sign languages often show a more iconic relationship between form and meaning compared to spoken languages, although all languages contain both iconic and arbitrary elements (Lepic et al., 2016). The visual nature allows for signs to sometimes visually depict the concept they represent, such as a sign for "tree" mimicking the shape of a tree (Lepic et al., 2016). However, sign languages are not solely iconic; they possess a rich vocabulary with many arbitrary signs and complex semantic structures (Lepic et al., 2016). The issue of whether a lexical sign is articulated with one hand or two, traditionally treated as a phonological matter, has also been shown to involve semantic motivations, with two-handed signs often encoding varying semantic patterns across unrelated sign languages (Lepic et al., 2016).

Despite these structural differences, both natural spoken and sign languages are acquired through similar developmental trajectories in children, suggesting that the human capacity for language is modality-independent (Lepic et al., 2016). This observation supports the hypothesis of a universal grammar that underpins all human languages, regardless of their physical realization (Lepic et al., 2016). William Stokoe's pioneering work on ASL demonstrated that sign languages are complete linguistic systems with their own unique structure, challenging previous

misconceptions and affirming their status as legitimate objects of linguistic study (Hochgesang & Miller, 2016)(Power, 2022). Subsequent research has further solidified this understanding, with studies exploring the historical linguistics of signed languages to understand diachronic change and language classification (Power et al., 2025)(Power, 2022).

Grammatical structures in sign languages differ fundamentally from those in spoken languages primarily due to their distinct modalities, leveraging visual-manual instead of auditory-vocal channels for communication (Galieva & Naurazbaeva, 2022)(Power, 2022). While both are complete linguistic systems, sign languages utilize space and simultaneity in ways that spoken languages typically do not, which influences their phonology, morphology, syntax, and semantics (Power, 2022).

A key distinction lies in the phonological organization. Spoken languages segment speech into discrete sounds (phonemes) that are produced sequentially by the vocal tract (Galieva & Naurazbaeva, 2022). Sign languages, conversely, organize visual information through a combination of parameters that are articulated simultaneously. These parameters include handshape, movement, location (or place of articulation), palm orientation, and non-manual features such as facial expressions, head tilts, and body posture (Galieva & Naurazbaeva, 2022). Each of these parameters functions as a phonemic unit, meaning that altering any one can change the meaning of a sign, analogous to how changing a phoneme in a spoken word alters its meaning (Galieva & Naurazbaeva, 2022). Research into 33 sign languages has shown that while handshapes adapt to biological constraints, they also diversify across languages, reflecting an evolutionary process similar to phonological change in spoken languages (Miozzo & Peressotti, 2022).
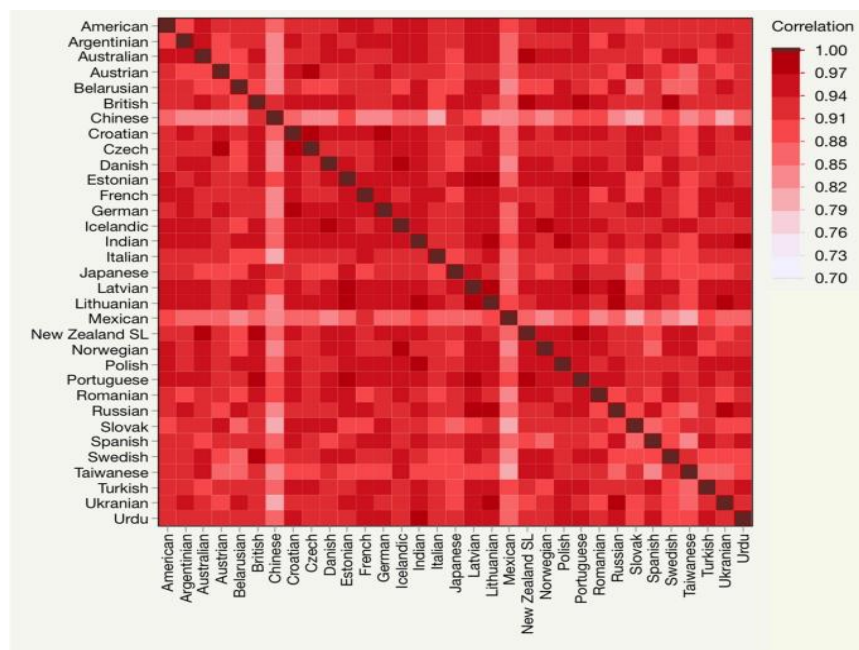
Syntactically, spoken languages typically rely on a linear, sequential arrangement of words to convey grammatical relationships, often using word order, inflectional morphology, and function words (Galieva & Naurazbaeva, 2022). While prosodic features like intonation can add meaning, they are generally secondary to this linear structure (Galieva & Naurazbaeva, 2022). Sign languages, however, integrate space as a core grammatical component (Galieva & Naurazbaeva, 2022).

For instance, signers can establish specific locations in the signing space to represent people, objects, or abstract concepts, and then refer back to these loci through subsequent signs. Grammatical relationships, such as subject-verb-object, can be indicated by the direction and path of movements between these spatial loci (Galieva & Naurazbaeva, 2022). This spatialization allows for the simultaneous encoding of multiple pieces of information that would be expressed sequentially in spoken languages (Galieva & Naurazbaeva, 2022). Non-manual markers are also integral grammatical elements in sign languages, functioning beyond mere expression. For example, raised eyebrows can mark a question, or a head nod can indicate affirmation, serving syntactic and pragmatic roles akin to intonation patterns or specific grammatical particles in spoken languages (Galieva & Naurazbaeva, 2022).

Miozzo and Peressotti (2022) illustrate the intricate nature of handshapes, a critical phonological and morphological component in sign languages (Miozzo & Peressotti, 2022). Their analysis across 33 sign languages demonstrates the frequency and distribution of various handshapes, highlighting how these manual configurations are both constrained by human biology and diversified through linguistic evolution (Miozzo & Peressotti, 2022).

The figure depicts:

- Panel A: Handshape frequency decreasing as ranking increases across various sign languages, indicating a core set of frequently used handshapes.

- Panel B: The distribution of handshape frequencies for 35 common handshapes found in all studied languages, revealing significant variation in usage.

- Panel C: The relationship between the coefficient of variation and total handshape percentage, suggesting a complex interplay.

- Panel D: Visual examples of specific handshapes and their correspondence across different sign languages, demonstrating both commonality and diversity.



[Handshape Frequency, Ranking, Coefficient of Variation, and Examples](https://figure.bohrium.com/pprfig/9354/817399032648302593/817399032648302593_fig4_1.png)

Source: (Miozzo & Peressotti, 2022)

Semantically, while both language modalities possess both iconic and arbitrary elements, sign languages often exhibit a more

direct, iconic relationship between form and meaning due to their visual nature (Galieva & Naurazbaeva, 2022)(Lepic et al., 2016). For example, a sign for "tree" might visually mimic the

shape of a tree (Galieva & Naurazbaeva, 2022). However, it is crucial to recognize that sign languages are not merely iconic; they possess rich vocabularies with many arbitrary signs and complex semantic structures, similar to spoken languages (Galieva & Naurazbaeva, 2022). The question of whether a lexical sign is articulated with one hand or two, traditionally viewed as a phonological matter, has also been shown to involve semantic motivations, with two-handed signs often encoding varying semantic patterns across unrelated sign languages (Lepic et al., 2016).

Despite these structural differences rooted in modality, the fundamental capacity for language is considered modality-independent, as evidenced by similar developmental trajectories in language acquisition among deaf children acquiring sign language and hearing children acquiring spoken language (Galieva & Naurazbaeva, 2022). This supports the notion of an underlying universal grammar common to all human languages (Galieva & Naurazbaeva, 2022). William Stokoe's pioneering research on ASL was pivotal in demonstrating that sign languages are indeed complete linguistic systems with unique structures, thereby establishing them as legitimate subjects of linguistic inquiry (Hochgesang & Miller, 2016)(Power, 2022). Subsequent research in historical linguistics of signed languages continues to deepen the understanding of diachronic change and language classification within this modality (Power et al., 2025).

## References

1. Lepic R, Börstell C, Belsitzman G, et al. Taking meaning in Hand [J]. Sign Language &amp; Linguistics, 2016, 19(1): 37–81.

2. Power J M. Historical Linguistics of Sign Languages: Progress and Problems [J]. Frontiers in Psychology, 2022, 13.

3. Power J M, Quinto-Pozos D, Law D. Advances in the Historical Linguistics of Signed Languages [J]. Language and Linguistics Compass, 2025, 19(6).

4. Galieva D A, Naurazbaeva L V. COMPARATIVE ANALYSIS OF ORIGIN AND EVOLUTION OF SIGN LANGUAGES [J]. Sovremennye issledovaniya sotsialnykh problem, 2022, 13(4): 592–604.

5. Power J M. Historical Linguistics of Sign Languages: Progress and Problems [J]. Frontiers in Psychology, 2022, 13.

6. Miozzo M, Peressotti F. How the hand has shaped sign Languages [J]. Scientific Reports, 2022, 12(1).

7. Lepic R, Börstell C, Belsitzman G, et al. Taking meaning in Hand [J]. Sign Language &amp; Linguistics, 2016, 19(1): 37–81.

8. Power J M, Quinto-Pozos D, Law D. Advances in the Historical Linguistics of Signed Languages [J]. Language and Linguistics Compass, 2025, 19(6).