# GESTUR DAN BAHASA ISYARAT: TEMUAN DARI SUATU KORPUS BISINDO

# GESTURE AND SIGN LANGUAGE: FINDINGS FROM A CORPUS OF BISINDO

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## ABSTRACT

*Cross-linguistically, and in many different situations, we can see speakers using their hands to some degree when they speak, and these gestures have recently received considerable attention in the literature (Goldin-Meadow 2003, Kendon 2004, McNeill 2005). Yet if we remove the sound element of an utterance from a speaker who uses co-speech gestures, and look only at the gestures, it is usually impossible to recreate the content of the utterance in full. Conversely, sign language users are able to converse without sound, using only the visual-gestural channel. It is clear, therefore, that the sign language used by deaf people is not the same as the gestures used by hearing speakers. But what is the relationship between the two?*

*This paper considers the relationship between gesture and one particular signed language: Indonesian Sign Language (BISINDO, or Bahasa Isyarat Indonesia). I begin with an outline of the theory on gesture, using examples from a corpus of BISINDO (Palfreyman and Isnaini 2018) to illustrate different kinds of gesture such as emblems and beats. I then consider where gestures can be seen in BISINDO, before turning to examples of grammaticalisation that occur in the grammatical domain of negation, where at least four different negative signs can be traced to gestures. One of these signs – TIDAK – derives from a gesture used across Indonesia, and sometimes cliticises to host predicates, while a second particle (TIDAK:2) is found in Pontianak and Singaraja, and derives from a local gesture in each case.*

*Gesture is an important area for linguistics, because it forces us to ask questions about matters such as the relationship between form and meaning, the means by which this relationship becomes conventionalised, and the differences between signed and spoken languages. The study of gesture is itself an under-researched field in Indonesia, and I conclude the presentation with reference to the theory of composite utterances (Enfield 2009, Ferrara and Johnston 2014), which can encourage researchers to observe and capture the complex multimodal nature of language.*

## INTRODUCTION

Indonesian Sign Language (BISINDO, or Bahasa Isyarat Indonesia) is used in urban centres across the Indonesian archipelago (Palfreyman 2018), and is thought to have been used since at least the 1950s. BISINDO was not created by hearing people, but by deaf people themselves, and emerged independently of spoken languages such as bahasa Indonesia. As a language that has mainly been transmitted horizontally at the Sekolah Luar Biasa from one generation of deaf children to another, it is likely that BISINDO itself primarily emerged and developed in the early deaf schools, set up in what is now Indonesia since the 1930s.

As with all sign languages, BISINDO occupies the visual-gestural modality, while spoken languages mainly use the vocal-auditory modality. However, matters are not quite as simple as this because, of course, speakers may also use gestures – either alongside speech, or instead of speech. For example, they can use a 'thumb-up' handshape while they say *bisa* ('can'), or point to a doorway while saying *dia masuk disana* ('she came in there'). In this paper, I introduce a classification of gesture set out by Özyürek (2012). I then look at how these ideas can be applied to BISINDO. Finally, I turn to look at how some elements of gesture used by hearing speakers have become part of sign language.

I want to be absolutely clear from the outset of this paper about the origins of sign language. Although the sign language used by deaf children and adults may be influenced in some ways by the gestures of hearing people, and contains a few elements shared with the gestures of hearing speakers, this does not diminish the fact that sign languages are the languages of deaf people, nor does it detract from the fact that BISINDO emerged within the deaf community. The gestures of hearing people are simply one of several sources available to deaf people as they use their sign language. Indeed, while we may observe similar processes at work in the development of signs in BISINDO and gestures, signers often use gestures in different ways: for example, as gestures become part of sign languages, they may become grammaticalised. The different origins of signs in the BISINDO lexicon can be seen in Figure 1.

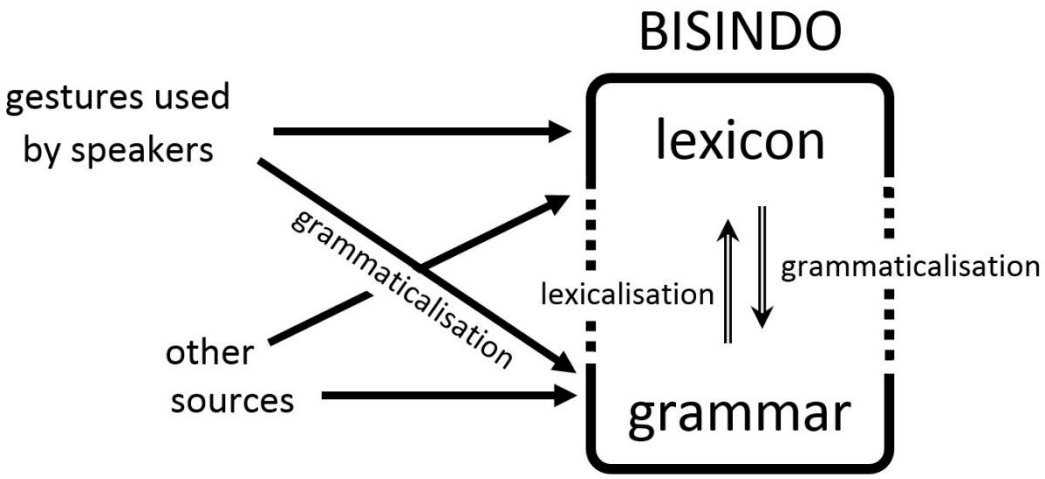


*Figure 1. A diagram showing the origins of signs in the BISINDO lexicon and grammar.*

**DEFINING AND CLASSIFYING GESTURE**

Kendon (2004) refers to gestures as 'visible actions' of the hands, body and face, which are used intentionally to communicate. Some types of gestures, such as abstract points and beats, accompany speech, while other types, such as emblems and pantomimes, replace speech, complement speech, or can be used without speech. The following typology is from Özyürek (2012).

- **Emblems** are conventionalised and culture-specific the relationship between form and meaning (a relationship that is arbitrary). For example, the gesture meaning *gila* ('crazy') in Indonesia is not known or used in Britain. The meaning of emblems can be understood even without speech. With the noise of heavy traffic in Jakarta, it is still possible to understand the meaning of an ojek who makes the *motor* ('motorbike') gesture.
- **Representational gestures** are less conventionalised, and occur with speech. There is a more iconic relationship between the form and referent. For example, a speaker might represent the shape of a car, the action of opening a box, or the trajectory of an object that is thrown.
- **Pantomimes** show meaning on their own, and can be used with or without speech. Visually, their meaning is transparent. Imagine, for example, someone describing how they bumped their head on a pole. They might say 'I just got out of the car, and I just [demonstration of what happened]' (Clark and Gerrig 1990: 783).
- **Points** accompany verbal references. They may be concrete, referring to real or imagined locations or abstract, enabling speakers to show how different referents in their discourse relate to each other (McNeill, Cassell and Levy 1993).
- Finally, **beats** are gestures that must accompany speech. They comprise rhythmic movements, with no ostensible content. Beats tend to follow the discourse contours of the speech stream, and there is no one-to-one mapping between the form and meaning of the movement.

Some researchers argue that speech and gesture are two parts of an integrated whole (Clark 1996, Kendon 2004, McNeill 2005). Gestures that occur with speech have several different functions, and show parts of the propositional or conceptual content of the utterance of which they are part (Özyürek 2012: 629). Recent studies show that semantic information from speech and gesture are processed in the same part of the brain, and on a similar time course. (Willems, Özyürek & Hagoort 2007).

In terms of linguistic properties, McNeill (2000, 2005) and Kendon (1982) propose different continua stretching from gesture to sign, that capture linguistic properties, semiotics, and the process of becoming more conventionalised. These are shown in Table 1 (after Özyürek 2012: 634). While representational gestures have no linguistic properties and are unconventionalised, sign languages do have linguistic properties, and are conventionalised.

*Table 1. Continua from representational gestures to sign language, according to the linguistic properties, conventionalisation and semiotics of forms (after Özyürek 2012: 634).*

| | **representational gestures** | → | **pantomime** | → | **emblems** | → | **sign language** |
|---|---|---|---|---|---|---|---|
| linguistic properties | no | | no | | some | | yes |
| conventionalised | no | | no | | yes | | yes |
| semiotics | [+global] [+synthetic] | | [+global] [+analytic] | | [+segment] [+synthetic] | | [+segment] [+analytic] |

According to semiotic characteristics, representational gestures and pantomime express meaning globally because they cannot be broken down into smaller independent and meaningful elements. However, emblems and linguistic signs are composed of smaller phonological and morphological components. Meanwhile, representational gestures and emblems show meaning synthetically, because each unit shows an idea that can spread over an entire utterance. Conversely, in pantomime and sign language, each meaning is shown through a single analytic unit (after Özyürek 2012: 635).

The situation becomes yet more complicated, however, when we consider the following three points.

1) Signers may switch from signs to pantomimes in order to convey meaning (Emmorey 1999). Such *enactment* may happen sequentially: for example, a signer can tell a story about his mother, and then 'become' the mother to show how she walks down the road, before switching back to sign language to describe something that happens.

2) In terms of using the space around the signer, some of the gestural components of sign languages have similarities with representational gestures that speakers use (Özyürek 2012). For example, Casey (2003) asked adults to depict certain actions without using speech, and finds that these adults use space in a similar way to deaf children. So-called *indicating verbs* and *depiction signs* in sign languages may therefore be examples of gestures that have become grammaticalised and conventionalised.

3) Signers may also use facial gestures in similar ways to speakers; for example, when asking 'Who is that?', an English speaker in Britain might lower their eyebrows. This has become part of the grammar of British Sign Language, where question signs such as 'who' and 'what' are usually accompanied by lowered brows (Sutton-Spence and Woll 1999).

## THE GRAMMATICALISATION OF NEGATIVE GESTURES IN BISINDO

Having looked at how gesture can be defined and categorised, I turn now to look at how gestures used by people in the surrounding hearing community become part of the linguistic system of a sign language, BISINDO. The ways in which gestures become part of a sign language can be seen by taking a closer look at four negative signs: TIDAK, TIDAK:2, TETAS and TIDAK-BOLEH. Between them, these signs show how forms used by speakers can follow different paths to become part of the grammar of BISINDO.

TIDAK TIDAK:2 TETAS TIDAK-BOLEH

*Figure 2. Four negative signs in BISINDO derived from gestures.*

i) TIDAK

The negative particle TIDAK is used in all varieties of BISINDO documented so far. It derives from a gesture used by speakers to accompany many negative utterances, and has come to express a range of functions in BISINDO. A study of TIDAK in Solo and Makassar finds at least seven specific functions (Figure 3, from Palfreyman 2018), including negative imperative (*jangan*) and negative completive (*belum*), alongside a basic clause negator function.

| functions of TIDAK | n | % |
|---|---|---|
| basic clause negation | 218 | 58 |
| negative imperative ('don't) | 45 | 12 |
| negative completive ('not yet') | 32 | 9 |
| negative ability ('cannot') | 23 | 6 |
| negative necessity ('not necessary') | 22 | 6 |
| negative exist/poss ('not there/have') | 13 | 4 |
| negative permissibility ('not allowed') | 15 | 4 |
| negative adverb ('never') | 9 | 2 |
| **total** | **377** | **100** |

*Figure 3. Functions of TIDAK in Solo and Makassar (from Palfreyman 2018: 191)*

Of the 377 tokens of TIDAK found in the corpus, 105 are clitics – that is, they are elements that have lost their phonological independence and attach to, or lean towards a host, with which they form a single phonological unit (Palfreyman 2018). Of the 105 clitics, 21 occur before the host, as in (1), and 84 occur after the host, as in (2). There is quantitative evidence to suggest that the cliticisation of particles is an example of how BISINDO is changing over time. In a logistic regression analysis, the use of cliticised particles is found to be *disfavoured* as signers get older, which indicates that it is younger signers who are leading this change.

(1) *Solo*

| | tidak-tahu | lihat tidak-tahu |
|---|---|---|
| **BOS-DATANG** | **TAHU=TIDAK** | **LIHAT=TIDAK** |
| boss-come | know=NEG | see=NEG |

'When the boss comes, s/he doesn't know about it.'

(2) *Makassar*

| | br | | |
|---|---|---|---|
| **MEMBULUHI-AYAM** | **TIDAK=TAHU** | **SUDAH:1** | **KE-SINI** |
| pluck-chicken | NEG=know | COMP | come-here |
| 'You don't know how to pluck a chicken?' | | 'Come here [and chop onions].' | |

The presence of clitics is important for our discussion of gestures, because it shows how, once a gesture has entered a sign language, it can change over time, and in some of the ways that other words and signs have been observed to change cross-linguistically.

ii) TIDAK:2

Since 2017, the BISINDO corpus has been expanded to include cities in West Sumatra, West Kalimantan, Bali and Maluku. During this data collection, another negative particle – glossed TIDAK:2 – was observed in Pontianak and Singaraja. This sign appears to derive from a gesture used by speakers in those two cities. However, the function of the gesture – and the sign – is different in each city.

In Pontianak, the gesture occurs with the negative existential *tidak ada*, and accordingly the particle only assumes this function in BISINDO Pontianak. However, in Singaraja the function of the gesture is wider – I have observed its use alongside *tidak bisa* ('cannot') and *tidak boleh* ('not allowed'). Again this is reflected in the way the form is used by signers, who use it to mean *tidak punya* ('not have'), *tidak apa-apa* ('it's ok') and *tidak boleh* (3).

(3) *Singaraja*

| motor | | mana sim | | gak | punya | |
|---|---|---|---|---|---|---|
| MOTOR | POLISI | KASI-SIM | | TIDAK:2 | PUNYA | |
| motorbike | police | give-license | | NEG | POSS | |

| br | | | | | |
|---|---|---|---|---|---|
| apa-apa | | gak punya | | tuli | gak boleh |
| TIDAK:2 | ... | TIDAK:2 | | TULI | TIDAK:2 |
| NEG | | NEG | | deaf | NEG |

"I was on my motorbike, the police wanted to see my license. I said 'I don't have one, is that ok? … I don't have it, deaf people are not allowed."

iii) TETAS

TETAS (in full: *telapak tangan menghadap atas*, or *palm-up*) occurs quite frequently in BISINDO and has several functions. It is a very common form cross-linguistically and its multifunctionality is discussed for sign languages including New Zealand Sign Language (McKee and Wallingford, 2011) and Turkish Sign Language (Zeshan, 2006). For example, in Dutch Sign Language, the functions of TETAS include: a general question sign; (at the discourse level) turn-taking or turn-yielding; (at the sentence level) sentence finality; and meanings such as "I'm not sure", "Rubbish!" "Who cares" and "Could be" (Ros et al. 2006).

Accordingly, Ros et al. (2006) describe TETAS as "a deictic gesture guiding the attention of the interlocutor to non-manual information", which might explain its pervasive use by signers and speakers around the world. An alternative theory is that TETAS derives from the use of the gesture as a marker of uncertainty (Zeshan 2006). As hypothesised in Palfreyman (2018), different grammaticalisation pathways may then lead to separate functions, such as:

- question marking,
- a predicate of uncertainty, with a meaning (‘don’t know’) that is closer to the original gesture (4)
- a negative particle, which can become a clitic and an affix
- a sign that marks resignation (‘There is nothing that we can do’).

It is difficult to tease these different functions apart, and there are only five instances in the corpus that are clearly negative particles. An example where TETAS is clearly a cliticised negative particle is shown in (5).

(4) *Solo*

| | *br* | *shldr shrug* |
|---|---|---|
| kawin | | |
| **KAWIN** | **SAYA** | **PALM-UP** |
| marry | PRO1 | PALM-UP |

‘You want to get married? I don’t know if that’s the right thing to do or not [it is not my decision/I have no opinion].’

(5) *Solo*

| | | | *tahu* |
|---|---|---|---|
| **MOTOR ANGKUT** | | **SAYA** | **LIHAT=PALM-UP** |
| motorbike | lift-on | PRO1 | see=PALM-UP |

‘I didn’t see whether the motorbike was taken away on a trailer.’

iv) TIDAK-BOLEH

TIDAK-BOLEH is a negative suppletive (Palfreyman 2018). It is a curious example, because while TIDAK-BOLEH clearly derives from a gesture used by speakers, meaning *tidak boleh*, BOLEH does not derive from a gesture. Furthermore, while many other predicates are negated in a way that formally includes the predicate in some way, TIDAK-BOLEH is not. Instead, TIDAK-BOLEH has become the means of negating the predicate *boleh* (‘allowed’) while bearing no formal resemblance to BOLEH. For this reason, TIDAK-BOLEH is regarded as negative (Palfreyman 2018).

## CONCLUSION

This paper has examined some of the complex connections between gestures and sign languages. It has been shown with respect to BISINDO how gestures used by speakers have been drawn upon as a resource by deaf Indonesians for use in the development of their sign language. There are several different kinds of gestures, but while emblems have some elements in common with sign languages, there are important differences. In addition, when a gesture enters a sign language – and especially the grammar – it is common for these forms to become more grammaticalised over time. This has been shown with respect to the negative signs TIDAK and TETAS (*telapak tangan menghadap atas*). A third sign, TIDAK:2, has entered BISINDO Singaraja and BISINDO Pontianak directly from local gestures, as shown by the functional range of these forms.

I would like to conclude with a plea to all who conduct linguistic research, particularly in Indonesia, to remember that we do not know enough about gestures. Rather than regarding languages as strings of sounds, we need to take a more holistic view of how people communicate, and remember that gestures often comprise an indispensible part of a speaker’s communicative efforts. The publication of more studies on gesture in Indonesia would be of benefit not only to sign language researchers such as myself, but to academia as a whole. To this end, I commend the *composite utterance* approach to meaning (Enfield 2009, Ferrara & Johnston 2014) which looks at unified ensembles of speech and gesture, and can help us to observe and capture the complex multimodal nature of language and communication.

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