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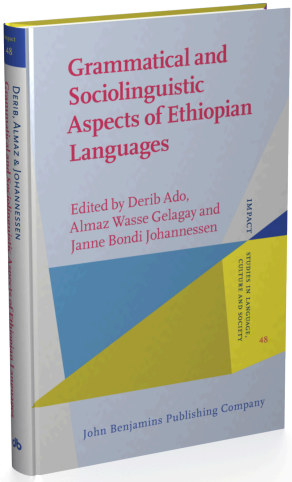

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The linguistic nature of expression of aspect in Ethiopian sign language

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Research findings on the aspectual marking system in sign languages points towards diverse thinking. At first it was claimed that aspect marking is inflectional morphology. This, however, has been questioned on the grounds that it does not meet the basic criteria for inflectional status, and is in fact derivational or belonging to a highly iconic class of ideophonic morphology. It also has been argued that the system is neither inflectional nor derivational, but gestural. These different analytical perspectives are still a subject of discussion. This paper is a part of wider research on forms, meanings of the aspect marking system in Ethiopian Sign Language (EthSL) and examines the nature of the aspect marking system observed in EthSL in light of the ongoing discussions. Seven deaf language consultants of differing ages and genders were involved. McCarthy's prosodic theory of nonconcatenative morphology was used as a theoretical framework for the analysis of the data. The analysed data refutes the gestural nature of the aspect marking system and points to the direction of inflectional morphology.

Keywords: aspect, sign language, Ethiopian Sign Language, EthSL, inflectional morphology

1. Introduction

The Latin word from which the English word aspect derives denotes 'how [something] looks'. Aspect is a verb form that indicates time-related characteristics, such as the completion, duration, or repetition of an action. It is concerned with the way events relate to time and refers to the 'how' against the 'when', by tense. Aspect, therefore, simply refers to the description of the event itself, whether it is completed or not, whether it is punctual or continuous, etc. Traditionally, aspect refers to grammaticised viewpoints such as the perfective and imperfective. However, with the realisation of the relationship between view point and situation structure, the

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range of the term aspect has broadened. The term now includes temporal properties and situations, or view point aspect and situational aspect (Smith 1997).

This paper is a part of wider research on forms and meanings of the aspect marking system in Ethiopian Sign Language (EthSL), a language used by over three million users in Ethiopia. The motivation for this part of the research is twofold. First, there is an ongoing argument on the linguistic nature of the aspect marking system in sign languages, which calls for more research on diverse sign languages. Second, almost all of the evidence used in the argument on the nature of aspect marking in sign languages come from sign languages used in Europe and America. This calls for investigating the aspect marking system in African sign languages, such as EthSL. The specific objective of this research, therefore, was to examine the nature of the aspect marking system observed in EthSL, in light of the ongoing debate, with the aim of providing more information on the nature of aspect marking in sign languages and contributing towards the international debate on the issue.

The paper is organised in six sections. Section 1 introduces the topic, motivation and structure of the paper. Section 2 is devoted to a review of the literature on the ongoing debate around aspectual marking systems. A brief introduction of the theoretical framework and methodologies is given in Section 3. In Section 4, I will discuss the morphological versus gestural debate and argue that aspectual expressions in EthSL display major hallmarks of a morphological operation. Based on this, I will then discuss the inflectional versus derivational debate in Section 5, in which I will argue that, even though the inflectional versus derivational categorisation of morphology is vague, the EthSL data indicates towards the inflectional nature of the morphology. Section 6 contains the concluding part of the research.

2. The linguistic nature of aspect marking in the literature

Prior to Stoke's (1960) groundbreaking work on sign language linguistics, signs were assumed to be simple unanalysable gestures with no internal organisation. Since the realisation that signs have analysable internal structures, research in sign language has rapidly passed from analysing the internal structures of signs to identifying and analysing linguistic operations on signs, such as the morphology of sign languages. Research in sign language morphology has shown that, just as is the case with spoken languages, sign language morphology is complex and has a wide range of morphological processes, some fully productive, some idiosyncratic, all influenced by general linguistic organising principles and most modelled by modality-specific factors, as well (Sandler & Lillo-Martin 2005: 21). One significant difference in the morphology of oral and signed languages observed so far is that, while morphological processes in spoken languages are typically linear, involving

the sequential lining up of bases and affixes, the morphological process in sign languages is not sequential and is often described as simultaneous, largely because this linear sequential affixation so common in oral languages is relatively rare in sign languages. This observation on the special nature of sign language morphology has created differing views on whether to name this simultaneous operation inflectional or derivational morphology or something else, such as gestural, which is non-morphological.

One of the morphological operations in sign languages that have been controversial is the aspectual marking system. In the early days of research in aspect marking in sign languages, it was claimed that aspect marking is morphological in nature and falls into the category of inflectional morphology. Klima and Bellugi (1979) described a large number of aspectual inflections in ASL using the verb sign LOOK-AT, and concluded that the aspect marking system in ASL is morphological in nature and the morphological system falls into the category of inflectional morphology. To strengthen their points, they offered two further arguments for the morphemic status of their modulations. First, the modulations have a specific linguistic distribution, i.e., they appear only with certain predicates, and they appear in certain syntactic contexts. Second, they can be analysed in terms of smaller phonological features that combine with one another: reduplication, even movement, tense movement, end-marking, fast movement and expanded movement. The findings of this rich and ground-breaking analysis of aspect marking forms were later supported in the analysis of other sign languages, such as British Sign Language (BSL) (Brennan 1983; Sutton-Spence & Woll 1999), Swedish Sign Language (Bergman 1983), Danish Sign Language (Engberg-Pedersen 1993), and Israeli Sign Language (ISL) (Sandler 1996). Aspect marking with similar form and meaning have also been described by other researchers, such as Metlay & Supalla (1995) and Rathmann (2005), to mention a few. The inflectional view of aspect marking was widely accepted for almost for a decade. Later on, after more than a decade, while the morphological nature was still upheld, the claimed inflectional nature of the morphology was questioned on the ground that aspect marking does not meet the basic criteria for inflectional status, and in fact best suites the category of derivational morphology (Bergman & Dahl 1994; Maroney 2004; Liddell 2003, to mention a few) or belong to a highly iconic class of 'ideophonic' morphology (Bergman & Dahl 1994). Liddell (2003) suggested that the aspectual modulations in American Sign Language (ASL), such as those described by Klima and Bellugi, represent a kind of morphology that is different from inflection and derivation. Liddell (2003: 52) goes further and questions the possibility of finding any true inflectional process in ASL grammar. The gestural view was motivated by recent research findings that indicated that natural sign languages may share some properties with gesture, especially in the use of space (Casey 2003; Kendon 2004). The said

shared properties, however, were rarely identified in clearer terms. Liddel (2003) for instance, argued that a particular subset of verbs of motion and location in signed languages, sometimes referred to as classifier constructions, represent blends of gestural elements and sign. This stance was later supported by Schembri et al. (2005) who compared Australian and Taiwan sign languages with nonsigners gestures. Although these findings were general conclusions pointing to the existence of shared properties between sign languages and gestures, they have, however, led to a new argument that debunked the morphological nature of the aspect marking operation altogether and claims that the aspect marking system doesn't meet the criteria for either inflectional morphology or derivational morphology (Gray 2012). Gray argued that the process of verb modifications in representing aspectual information – which he termed Aspectual Verb Modification (AVM) in Australian Sign Language (Auslan) – is not a morphological system but is best analysed as gestural representation. Going further, Gray claimed that aspect marking is gestural in nature. However, this perspective is yet to receive support in other sign languages. These different analytical perspectives on the expression of aspect are still a subject of discussion. Each of the perspectives has their own merits and demerits, making outright rejection or support a problematic decision. This calls for expanding the investigation to diverse sign languages such as EthSL, which is a not-yet fully investigated sign language. Most of the arguments around the linguistic nature of the aspect marking system are based on sign languages that are considered to be relatively developed, such as ASL, BSL and Auslan. There is no evidence to show that the same is true of sign languages in Africa, such as EthSL. Wilcox, (2004: 48) noted that 'A gesture can have a specific form and (localised) meaning, and thus function lexically, or an abstract form and a non-specific, generalised meaning'. This also could apply to the morphology of a sign language, whereby certain linguistic operations, such as aspect marking, could have a linguistic status in certain languages, while in other languages could fit into the definition of a gesture. This makes the investigation of aspect marking in diverse sign languages an important step towards understanding the linguistic nature of aspect marking in sign languages. The main motivation for this investigation, therefore, was to assess the linguistic nature of aspect marking in EthSL and make a contribution towards the current debate around the subject matter.

3. Theoretical framework and methodology

3.1 Theoretical framework

The theoretical foundation of the analysis presented in this paper is McCarthy's (1979, 1981) prosodic theory of nonconcatenative morphology. The foundation of the prosodic theory is the Morphological Rule Constraint (MRC) which states that 'All morphological rules are of the form A-B / X, where A is a single element or zero and B and X are (possibly null) strings of elements'. It is a theory of how morphological and phonological determinants of linguistic form interact with one another in a grammatical system. More specifically, it is a theory of how prosodic structure impinges on templatic and circumscriptional morphology, such as reduplication and infixation.

There are three essential claims of the theory: The first is the principles of prosodic morphology that defined prosodic morphology hypothesis templates in terms of the authentic units of prosody: mora (μ), syllable (σ), foot (F), prosodic word (PrWd). The second claim is in template satisfaction condition, which states that satisfaction of templatic constraints is obligatory and is determined by the principles of prosody, both universal and language specific. The third claim is prosodic circumscription, which states that the domain to which morphological operations apply may be circumscribed by prosodic criteria as well as by the more familiar morphological ones. In short, the theory of prosodic morphology says that templates and circumscription must be formulated in terms of the vocabulary of prosody and must respect the well-formedness requirements of prosody.

The theory, which was originally justified on the basis of Arabic morphology, was later extended to typologically diverse languages such as Spanish Harris (1980) and Hausa (Halle & Vergnaud 1980) languages, in which it yielded rich insights into a wide variety of morphological phenomena.

3.2 Application of the theory in sign languages analysis

The theory has been applied in the analysis of sign languages since 1989. Among others, Sandler (1989, 1990) and Sandler & Lillo-Martin (2005) applied McCarthy's templatic morphology theory in the analysis of ASL verb morphology, and the result pointed to the applicability of the theory in the analysis of sign language verbs, especially aspectual operations. In fact, it shows that aspect markers are best analysed as the association of the base sequence to a prosodic template in which the first and last locations are lengthened. For instance in the analysis for the ASL sign SICK, the base consists of a location near the forehead (represented as X), following by

a straight Movement (represented by Y) and another Location in contact with the forehead (represented by Z): together x,y,z played the role of the base consonants (equivalent to McCarthy's Arabic example of *kataba*, k,t,b). The intensive template, represented as sequences of L (Location) and M (Movement) segments is LLMLL, to which the x,y,z base is associated. The intensive form is then the same as the base LML signs, but with longer duration (the hand is held in its position) on the first and last locations: xxyzz. The Durational form adds an arc feature to the movement of the base sign.

3.3 The reason for choosing this theory

The first reason for choosing this theory is the nature of sign languages' morphology. It has been said that while concatenative patterns are more common in the world's languages than nonconcatenative patterns (Haspelmath & Sims 2010), it is the templatic type of nonconcatenative morphology that is abundant in sign languages (Sandler & Lilo-Martin 2005: 51). The second reason is that, unlike concatenative morphology, which is morpheme based and restrictive, nonconcative morphology is word based/sign based, and is not restrictive. It allows morphological rules of virtually any type, even those that do not exist in any language, thereby allowing analysis of a language like EthSL on its own terms.

In most cases, the expression of aspectual information is made possible by modifying the base sign. Here, the base of a morphologically complex sign refers to the element to which a morphological operation applies. In base modification, the shape of the base is changed without adding segmentable material on the sign, and this base modification, which is the main route to adding aspectual information on the base sign, falls under the category of nonconcatenative morphology.

In oral languages, linguistics base modifications such as fronting of the stem vowel, palatalisation of the last consonant, weakening of word-initial obstruent consonants, germination, lengthening of the final stem vowel, shortening of the stem vowel, tonal change, voicing of the last consonant and subtraction metathesis belong to the nonconcatenative morphology (Haspelmath & Sims 2010). In different forms, though, these same characteristics are abundant in sign language morphology, making nonconcatenative morphology better suited for the analysis of signs, especially aspect markers, because morphological operations on sign language verbs, particularly aspect markers, may pose difficulty to accommodate in concatenative morphology due to their non-linear formation. McCarthy's theory stands apart among in nonconcatenative morphology, making it the choice for the analysis of aspect markers in EthSL.

3.4 Sampling

The purposive sampling method was used to select seven near-native speaker language consultants for the study. In sign language research, the term native speaker refers to deaf children born to deaf parents and started speaking EthSL at home before entering school. It was hard to find such consultants therefore the following criteria were used to select near-native speaker language consultants:

- They must have learned to sign before the age of five or joined schools for the deaf at as early an age as possible.
- They use sign language daily.
- Are regular members of the Ethiopian Deaf Community.
- Other members of the community testify to their signing skill.

Out of the seven consultants selected based on these criteria, three were female while the other four were male. Three of the consultants were in primary classes in a residential school for the deaf, aged 9, 10 and 11. The other four were teachers in a residential school for the deaf and were between the ages of 21 and 25. All of the consultants were educated in a residential school for the deaf.

3.5 Data collection tools and techniques

Various means of collecting data were employed to collect appropriate data from the language consultants. The following data elicitation techniques were applied:

- Recording natural language use in its context: the consultants were asked to narrate their own life story and their experience at their school.
- Storytelling: language consultants were asked to view a wordless cartoon on videotape, entitled 'Tom and Jerry', after which they were asked to narrate the story in EthSL.

Among others, the following measures were taken to ensure the data extracted was more reliable:

- Consultants were aided in doing a particular kind of task so that they knew what was expected of them, until the researcher and the consultants were satisfied that they agreed on what the task involved.
- As much as possible, data extraction was done in natural settings.
- The researcher verified the consultant's judgments on videotaped material with other native users.
- Different elicitation tasks were used to replicate data to increase reliability.
- Repeated elicitation tasks were used at spaced intervals as a check on the internal consistency of the data.

An HD camera was used to record data. The researcher, being deaf, led the entire data-gathering process in person, which included giving necessary training to the consultants, arranging and organising the places where video recordings were made, giving necessary instructions before and during recordings, etc. The consultants' role was providing language input through various tasks designed for this purpose. Data collection was done in places familiar to consultants, and recording was done in appropriate clothing, suitable to create enough contrast between hands and the background, with a simple unpatterned background and proper lighting, in both sitting and standing posture, depending on the task.

3.6 Data analysis procedure

After collecting the data on videotape, the researcher watched the videotape carefully, shared it with his supervisors, another researcher and another native signer before interpreting them to ensure that what he saw was what others saw. Once this was done, the data was transcribed and annotated using ELAN 4.9.1 annotation software and the transcription was reviewed with the consultants and other skilled deaf signers to check that what was transcribed was agreed upon. After that, the transcribed data were interpreted and analysed accordingly.

4. Morphological vis-à-vis gestural

Before going deeper into presenting data and a detailed discussion of the observations in the EthSL data, it is necessary here to discuss briefly the determining factors in differentiating the morphological from the gestural.

To make it clear from the beginning, this researcher regards both words and signs as coordinated patterns of articulatory gestures produced appropriately in time and space (Wilcox 2004: 45). The question, therefore, is not whether a gestural aspect is involved in the marking of aspect in sign languages, or not. The question is what characteristics of a linguistic operation on a sign qualify its being termed morphological or gestural. Morphology, as it is commonly known, is the arrangement and relationships of the smallest meaningful units, known as morphemes, in a language. When the arrangement and relationship of the morphemes is morphological in nature, among others, it appears in a similar fashion in the use of the language by proficient speakers of a particular language. This is because the arrangement of the morphemes exists in the minds of the speakers and is utilised the same way as situations arise, regardless of the individual and thus results in uniformity. One of the determining factors between morphological and gestural expressions, therefore,

is that morphological operations exhibit uniformity because they are selected from a pre-existing lexicon in the speakers' mind. Of course, the fact that two or more usages are uniform alone can't justify labelling a linguistic operation morphological. While being uniform may serve as a starting point, in addition to the issue of uniformity, for a linguistic operation to be referred to as morphological, it needs to display at least the following main characteristics: it should be composed of morphemes that can be identified and decomposed into smaller units, it should be guided by all-agreed rules and be uniform and conventionalised. This means that the internal structures of the sign as well as their semantics needed to meet these criteria.

Broadly defined, a gesture is 'a functional unit, an equivalence class of coordinated movements that achieve some end'. (Armstrong et al. 1995: 43). Gestures are holistic, imagistic productions that directly represent mental images (Gray 2012). The main characteristic of a gesture is that it is 'widely variable in its manifestation' (Wilcox 2004: 69). Therefore, a linguistic operation is said to be gestural if the marking operation is composed of structures that are spontaneous, created on-line, and are directly shaped by their semantics, lack an internal structure, and cannot be decomposed into reoccurring parts. Furthermore, they differ from individual to individual because they are not selected from a pre-existing lexicon and the forms observed are holistic, imagistic productions that directly represent mental images, among others. Being imagistic deprives gestural operations of the quality of uniformity.

Having said this, I will now try to show the observations in the EthSL data in light of the above characteristics of morphology and gesture. I will start by examining the degree of uniformity in the marking of aspect in the data through quantitative results. Then I will examine the internal structure and decomposability of the morphemes.

4.1 Degree of uniformity in the marking of aspect in ETHSL

As can be observed from quantitative results presented in Table 1, a total of 208 instances of sign verb usages were observed in the data provided by seven consultants. Of the 208 instances, 186 (89.4%) of the verb signs were marked for aspect, while the remaining 22 (10.6%) were either not marked for aspect, the marking was unclear, or the type of the marking was uncertain. Out of 186 verb signs observed in the data, 81 (43.55%) were marked for continuative, 31 (16.7%) for iterative, 16 (8.6%) for intensive, 11 (5.9%) for the durative, 34 (18.28%) for the habitual and 13 (6.99%) for the inceptive, in the same manner.

Table 1. Summary of instances and manner of morphological operations in the data

S/N	Description	Frequency		Remarks
		#	Percentage	
1	Observed verb signs in the data	208	100	Other classes of sign were not counted
2	Verbs signs marked for aspect	186	89.4	Out of the 208
3	Unmarked verb signs/unclear/uncertain marking	22	10.6	Out of the 208
4	Verb signs marked for continuative	81	43.55	Uniform marking
5	Verb signs marked for iterative	31	16.7	Uniform marking
6	Verb signs marked for intensive	16	8.6	Uniform marking
7	Verb signs marked for durative	11	5.9	Uniform marking
8	Verb signs marked for habitual	34	18.28	Uniform marking
9	Verb signs marked for inceptive	13	6.99	Uniform marking

The quantitative result points to a high degree of uniformity in the marking of aspect in EthSL. From all indications, the manner of the marking doesn't look spontaneous. Except for small individual differences, for instance in the number of reduplications, the length of duration and the accompanying non manual features, there is a uniform marking system in display. Uniformity, as explained earlier, is the characteristics of morphology. The morphological nature of aspect marking has a lot of support from both those who argue in favor of derivational and those who argue in favor of inflectional morphology (Klima & Bellugi 1979; Liddell 2003, for instance).

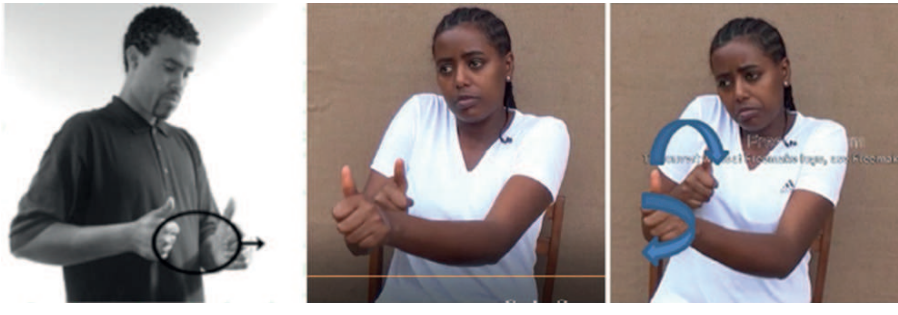
4.2 Internal structure and decomposability of the morphemes

Since Klima & Bellugi's (1979) first attempt at analysing aspectual marking mechanism in ASL, one of the facts that has been repeatedly proved in diverse sign languages is the fact that the aspect marking mechanism in sign languages has internal structure that could be decomposed into units. The same has been proved in this data. Having attempted to show the degree of uniformity, as observed in the data under investigation, in the marking of aspect through quantitative data, I will now attempt to show if the morphemes observed and labeled in EthSL are decomposable, and whether the internal parts of the verbs' signs marked for aspect could be analysed. I will use one example each from the continuative, iterative and the inceptive for the purpose of showing decomposability of the morphemes.

4.2.1 *Continuative*

As can be observed in Table 1, the continuative is the most visibly marked aspectual form in the studied data. Three different forms in marking the continuative on sign verbs were observed, namely slow reduplication, hold and extended production. However, signers didn't use the three forms of marking aspectual meanings arbitrarily. While signers reduplicated durative verbs slowly with an elliptical path movement and a tense or emphatic production to show continuity, they held non-durative verbs stable in a place without any movement to express continuative meaning.

One of the verb signs frequently marked for the continuative is the sign FOLLOW, shown below:



FOLLOW-dictionary form FOLLOW-unmarked FOLLOW-marked for continuative

Figure 1. FOLLOW dictionary form, unmarked and marked for continuative

In the citation form of FOLLOW, there is no visible reduplication; the 'A shaped' hands move a little forward together in a uniform manner. However, in the videotaped data studied and analysed, the following observations were made of the sign FOLLOW:

- The movement in the citation form is reduplicated in a slow and semicircular manner.
- All the consultants added the same morpheme to express the same meaning.
- The added morpheme was identified as slow reduplication.
- The aspectual meaning the slow reduplication carried was continuative.

The morphemes in the sign FOLLOW were decomposable, as per sequence and duration. Except for small individual difference in the number of reduplications, the length of duration and the accompanying NMF, all other parts of the sign were uniform. The accompanied NMFS didn't change the meaning, and they varied depending on the context and related to the signers' impression of the actions, including stern face, focused and narrowed eyes.

The consultants' marking of the continuative on durational verb signs, which can be reduplicated such as; FOLLOW, WALK, TALK, and GIVE (FEED), were identical both in form and in semantics

(1) DSM(A) DOG FOLLOW(redS) GIRL.
The dog kept **following** her.

(2) PRO3 DSM (2) WALK (redS)
A girl was **walking** along.

(3) PRO3 TALK (redS).
They continued **talking**/They had a discussion.

(4) DSM(A) (DOG) FOLLOW (redS) (GIRL)
The dog kept **following** her.

(5) PRO2 FOOD GIVE (redS) (DOG).
She was **feeding** the dog.

(6) GIRL DSM (2) WALK (redS)
A girl was **walking** along.

But when the consultants were given the opportunity to mark certain durative verbs that are

non-reduplicative in their citation form, they all either held the signs or extended the production:

(7) CAT RAT LOOK (hold) (THE GIRL)
Tom and Jerry **gazed** at her (for a long time).

(8) PRO 2 FROWN-FROWN (ext)
The girl walked away frowned. (She remained frowned as she walked away)

(9) CAT RAT HEAR (ext) SONG.
Tom and Jerry continued **listening** to the song.

4.2.2 *Iterative*

The iterative carries the meaning 'to do something over again or repeatedly'. It was observed 31 times in the data studied. Like the continuative, it is produced slowly with an elliptical path movement and a tense or emphatic production. As discussed in Section 4.1, the difference is that the form carries a continuative meaning when added to durative verbs such as FOLLOW and WALK, and iterative meaning when added to non-durative verbs such as PEDAL-PEDAL and STRIKE. PEDAL-PEDAL is a verb sign derived from the noun PEDAL and is one of the signs which have no one-word meaning either in English or Amharic. It should be noted that there are many signs that have no one-word meaning in a spoken

language vocabulary. [1] The same can be said of certain signs such as PEDAL-PEDAL. The sign PEDAL-PEDAL is similar to the sign STEP, which is a non-durational sign and carries the meaning of pushing the pedal of a bicycle again and again with the intent of moving the bicycle forward. When the sign is reduplicated in a slow manner it means doing it again and again.

PEDALE-PEDALE (iterative)

Figure 2. PEDALE-PEDALE (marked for iterative)

The following observations were made on the sign PEDAL-PEDAL recorded on video and studied:

- The movement in the citation form is reduplicated in a fast and semicircular manner to indicate 'again and again'.
- All the consultants added the same morpheme to express the same meaning.
- Added morpheme: Fast reduplication.
- Aspectual meaning: Iterative

Just as was observed in the sign FOLLOW, the morphemes in the sign PEDAL-PEDAL were decomposable as per sequence and duration. The small difference observed has to do with the number of reduplications, and the accompanying NMF, which express the efforts and determination of the rider and which are not related to any aspectual meaning.

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1. Such cases are not limited to sign languages only. As Chao (1968) noted, 'Not every language has a kind of unit which behaves in most (not to speak all) respects as does the unit called "word"'. He added that in the case of a Chinese language '…It is therefore a matter of fiat and not a question of fact whether to apply the word "word" to a type of subunit in the Chinese sentence'. (136).

The same forms of marking with similar meaning were observed in other cases, such as the following:

(10) RAT HIT (redS) (THE PIG).
Jerry hit the pigs again and again.

(11) PRO3 EGG DSH (OPEN 5) PICK-PUT (redS)
They picked the eggs one by one and packed them.

However, as observed in the continuative case, when the signers were provided with an opportunity to mark the iterative on durative sign verbs, they uniformly marked it with fast reduplication.

(12) PRO2 ENTER (THE CHICK) (redF)
The farmer dropped the chicks inside the cage one by one.

(13) PRO ADD (redF)
He did the sum again and again. (to make sure)

4.2.3 *Inceptive*

One interesting observation was how signers marked the sign FALL for the inceptive in a certain occurrence in the video in which a girl was about to fall but was saved in mid-air. Despite making some modifications to the sign for FALL (one signer starting from above head and bringing it downward and the other signer starting from the upper edge of his left open palm) necessitated by the context, both signers attached a morpheme similar in form and meaning that was easily identifiable. The citation form of FALL (physical) can be made in various ways, depending on the context as shown in Figures 3 and 4 below. For instance, it could be signed using only the dominant hand shape in the air direct to the real surface below, or by using the dominant hand shape to depict a person and the passive hand to represent a surface or an object from which the person falls. In both cases, the '2-shaped' palm down hand (which starts from the palm of the passive hand or from the air above the signers' head) moves downward while the palm turns up in the process, without any visible hold either in the beginning or end of the movement of the active hand.

Regardless of their different impression of the falling process, in marking the inceptive, the consultants held the phonological configuration at the initial stage of the production for a longer period than needed in the citation form accompanied by a certain degree of intensity in their faces – eyes wide open, mouth open with the tip of their tongue out – then applied fast movement that was abrupt and stopped in midair where the phonological configuration was held briefly before the saving action was told.

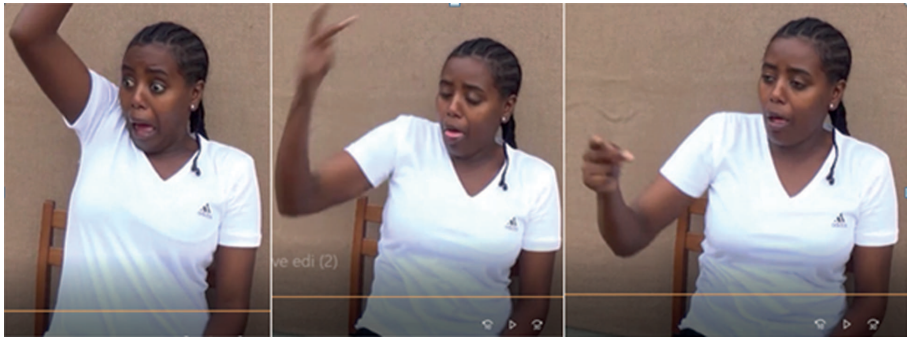

Figure 3. FALL (Marked for inceptive)

Figure 4. FALL (Marked for inceptive)

Despite the variation in depicting the same action of an interrupted event, a little girl falling fast and suddenly from the edge of a fence in both cases:

- The movement in the citation form is marked by a long tense initial hold-rapid performance-final hold.
- Consultants added the same morpheme to express the same meaning.
- Added morpheme: initial hold-final hold.
- Aspectual meaning: inceptive.

The observations made above can be summed up as follows:

The linguistic operations:

- Exhibit a high degree of uniformity among users, which indicates that the operations are guided by agreed-upon rules.
- Consistent and decomposable morphemes and dual patterning: sign, sequence and duration were observed.

- Uniform marking form: slow and fast, reduplication and initial and final hold (ihold-fhold).
- Uniform meaning: continuative, inceptive and iterative.

The data suggested that the marking of aspect on the verbs is done through a variety of sequences and durations that are identifiable and decomposable. In line with the theoretical framework for this research, these sequences and durations can be analysed in terms of smaller phonological features, such as reduplication, extended production, etc. In addition, a specific linguistic distribution, which is on display as a result of the modulation in the above data, shows internal systematicity in the dimension of patterning. It is a common knowledge in linguistics that if a modulation exhibits internal systematicity in its dimensions of patterning, it shows that the modulation is a morphological process. Consequent to these, if being uniform, being composed of morphemes that can be identified and decomposed into smaller units, and being guided by all-agreed rules are characteristics of a morphological operation, the logical conclusion is that the observation made in the EthSL data is morphological in nature. This is in line with the findings in well-researched sign languages, such as ASL (Klima & Bellugi 1979; Rathmann 2005 and others) and BSL (Sutton-Spence & Woll 1999).

5. Inflectional vis-à-vis derivational

Now it is clear, at least in the context of this research, that the aspect marking process in EthSL is morphological in its characteristics. The next issue to address is the type of morphology on display. Before going deeper into the use of data to argue my position, let me use clear language to explain the criteria used to define aspectual operations identified as morphological as being either inflectional or derivational. Before that, it is worth noting that morphology is basically gratuitous, as well as complex and irregular. Owing to this fact, the distinction between inflectional and derivational affixes is a sometimes-convenient descriptive one, and not a basic distinction in theory. It should also be noted that not all linguists agree on categorising morphology into two broad categories, like inflectional and derivational, and argue that not every operation falls under either. Scholars such as Bybee (1985) have advanced a continuum approach, which, as the name suggests, entails that there is a continuum between inflection and derivation. Booij (1996, 2007), also proposed a **tri-partite approach** to get around this problem, and distinguished between two types of inflection, **inherent** and **contextual**. Inherent inflection, as he defines it, is the kind of inflection that is determined by the information a speaker wishes to

convey, like the concept of number. Contextual inflection, on the other hand, is determined by the syntactic context. Haspelmath (2002) also discusses several more distinctions between inflection and derivation, building on the narrow traditional definitions. He forwarded three sets of criteria for distinguishing inflection from derivation. The first set of criteria is 'all-or-nothing', the second set 'more-or-less' and the third criteria **obligatoriness.** In his view, the 'all-or-nothing' set of criteria unambiguously distinguishes inflection from derivation, whereas the 'more-or-less' set do so to a lesser extent. He also suggested that that inflection is 'obligatory', but derivation is not.

While acknowledging the above arguments and the vagueness of categorising morphological operations into inflectional and derivational, the two broad classifications of morphology were used for the purpose of this research. The most common differentiating characteristics of inflectional and derivational morphologies were also used to examine the data. One of the commonly agreed upon characteristics of derivational morphology is that the operation normally results in the creation of a new word with a new meaning. On the contrary, inflectional morphology involves an obligatory grammatical specification characteristic of a word class and does not result in change of meaning. Consequently, derivational morphemes are expected to make fundamental changes to the meaning of the stem, whereas inflectional morphemes are used to mark grammatical information without making any change in the meaning of the stem.

In the signs used above to discuss the argument on morphological vis-à-vis gestural, the morphological operations observed in signs for FOLLOW, FALL and PEDAL-PEDAL, as well as other signs observed, did not change either the meaning of the signs or their class. The signs remain verbs and semantically mean the same thing. Likewise, no new sign was created as a result of the operations. Most of the operations were obligatory in the sense that, without the operations, the verb wouldn't mean what it should mean. For instance, when no slow or fast reduplication is added to the citation form of FOLLOW, it would mean 'to follow' without specifying for how long the following happened. Adding a fast reduplication on the sign FOLLOW to express habitual meaning, or adding a slow reduplication on the sign FOLLOW to express continuative is obligatory (See the third picture in Figure 1 above where FOLLOW is marked for the continuative aspect). Otherwise, whole sentences could miss the intended meaning.

However, if the signer moved the sign FOLLOW in a zigzag line (as illustrated in Figure 6 below) instead of reduplicating it, it would result in a creation of FOLLOW-UP, an instance of derivational morphology.

FOLLOW-citation form FOLLOW-UP

Figure 5. Derivational morphology in which FOLLOW-UP is created from FOLLOW

The same could be said of the other operations. It is, therefore, logical to conclude that the morphological operations observed points in the direction of an inflectional morphology. Aspect marking in EthSL, therefore, falls into the category of inflectional morphology.

6. Conclusion

The objective of this research was to examine the linguistic nature of the aspect marking system observed in EthSL in light of the ongoing worldwide debates concerning the linguistic nature of the aspect marking system in sign languages and to make a contribution towards the debate. Data collected from seven near-native speaker language consultants of different ages and genders, selected through purposive sampling methods, was transcribed and annotated using ELAN 4.9.1 software and analysed within the framework of McCarthy's prosodic theory of nonconcatenative morphology. The result of the investigation shows no convincing evidence in support of the claim that aspect marking in sign languages is derivational or gestural. Rather, the results pointed to the direction of inflectional morphology. This finding is in line with the findings of Klima & Bellugi (1979), Brennan (1983), Sutton-Spence & Woll (1999), Engberg-Pedersen (1983), Sandler (1996), Metlay & Supalla (1995), and Rathmann (2005), to mention a few, who all reported that the marking of aspect in the respective sign languages they studied is inflectional in nature. Just as reported in the earlier research mentioned above, the signs studied in this research were composed of free and bound morphemes that could be analysed separately. The free morphemes in this case were the citation forms of a particular sign, which are usually referred to as stem, root, or base sign, while the bound morphemes are the sequences and durations attached to the free morphemes. These bound morphemes take various forms such as reduplications, holds, extended productions etc., and carry different meanings such continuative, iterative, habitual, etc., depending on the context in which they are used. Moreover, the observed

markings of aspect are consistent, composed of decomposable morphemes and have dual-patterning sign, sequence and duration, which are characteristics of morphology. The pattern of the morphology, though, inexplicable in terms of prefixes and affixes as it is normal in oral languages morphology, displayed the characteristics of an inflectional morphology because they hardly change the class of the signs or result in the creation of a new sign.

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Keys to conventions abbreviated words

Capital letters represent the nearest English gloss for the sign used

EthSL	Ethiopian Sign Language
DSM (A)	Depicting sign of movement, a handshape
DSM (2)	Depicting sign of movement, 2 handshape
DSH	Depicting sign of handshape
redS	Slow reduplication
redF	Fast reduplication
PRO, 1,2,3	First, second, third person pronoun
ext	Extended production
NMF	None Manual Features

References

Armstrong, David, Stokoe, William & Wilcox, Sherman. 1995. *Gesture and the Nature of Language*. Cambridge: CUP. https://doi.org/10.1017/CBO9780511620911

Bergman, Brita. 1983. Verbs and adjectives: Morphological processes in Swedish Sign Language. In *Language in Sign: An International Perspective on Sign Language*, James Kyle & Bencie Woll (eds), 3–9. London: Croom Helm.

Bergman, Brita & Dahl, Osten. 1994. Ideophones in sign language? The place of reduplication in the tense aspect system of Swedish sign language. In *Tense, Aspect and Action-empirical and Theoretical Contributions to Language Typology*, Carl Bache, Hans Basbøll & Carl-Erik Lindberg (eds), 397–422. Berlin: Mouton de Gruyter. https://doi.org/10.1515/9783110883077.397

Booij, Geert. 1996. Inherent versus contextual inflection and the split morphology hypothesis. *Yearbook of Morphology* 1995: 1–16.

Booij, Geert. 2007. *The Grammar of Words. An Introduction to Morphology*. Oxford: OUP.

Brennan, Mary. 1983. Marking time in British sign language. In *Language in Sign: An International Perspective on Sign Language*, James Kyle & Bencie Woll (eds), 10–31. London: Croom Helm.

Bybee, John. 1985. *Morphology. The Relation between Form and Meaning*. Amsterdam: John Benjamins. https://doi.org/10.1075/tsl.9

Casey, Shannon. 2003. Relationships between gestures and signed languages: Indicating participants in action. In *Cross-linguistic Perspective in Sign Language Research: Selected Papers from TISLR 2000*, Anne Baker, Beppie van den Bogaerde & Onno Crasborn (eds), 95–118. Hamburg: Signum.

Chao, Yuen Ren. 1968. *A Grammar of Spoken Chinese*. Los Angeles CA: University of California Press.

Engberg-Pedersen, Elisabeth. 1993. *Space in Danish Sign Language: The Semantics and Morphosyntax of the Use of Space in a Visual Language*. Hamburg: Signum.

Gray, Michael. 2012. Aspect Marking in Australian Sign Language: A Process of Gestural Verb Modification. PhD dissertation, Macquarie University.

Harris, Randy. 1980. *The Linguistics Wars*. Oxford: Oxford University Press.

Haspelmath, Martin. 2002. *Understanding Morphology*. London: Arnold.

Haspelmath, Martin & Sims, Andrea. 2010. *Understanding Morphology (2nd edition)*. UK: Routledge.

Kendon, Adam. 2004. *Gesture: Visible Action as Utterance*. Cambridge: CUP. https://doi.org/10.1017/CBO9780511807572

Klima, Edward & Bellugi, Ursula. 1979. *The Signs of Language*. Cambridge MA: Harvard University Press.

Liddell, Scott. 2003. *Grammar, Gesture, and Meaning in American Sign Language*. Cambridge: CUP. https://doi.org/10.1017/CBO9780511615054

Maroney, Elisa. 2004. Aspect in American Sign Language. PhD dissertation. University of New Mexico at Albuquerque.

McCarthy, John. 1979. Formal Problems in Semitic Phonology and Morphology, Doctoral dissertation, MIT. Cambridge. Massachusetts.

McCarthy, John. 1981. A prosodic theory of nonconcatenative morphology. *Linguistic Inquiry* 12: 373–418.

Metlay, Donald & Supalla, Ted. 1995. Morpho-syntactic structure of aspect and number inflections in ASL. In *Language, Gesture, and Space*, Karen Emmorey & Judy Reilly (eds), 255–286. Hillsdale NJ: Lawrence Erlbaum Associates.

Rathmann, Christian. 2005. Event Structure in American Sign Language. PhD dissertation, University of Texas at Austin.

Sandler, Wendy. 1989. *Phonological Representation of the sign: Linearity and Non-linearity in American Sign Language*. Dordrecht: Foris.

Sandler, Wendy. 1990. Temporal aspect and American Sign Language. In *Theoretical Issues in Sign Languages Research*, Susan Fischer & Patricia Siple (eds), 103–129. Chicago: University of Chicago Press.

Sandler, Wendy. 1996. Phonological features and feature classes: The case of movements in sign language. *Lingua* 98: 197–220. https://doi.org/10.1016/0024-3841(95)00038-0

Sandler, Wendy & Lillo-Martin, Diane. 2005. *Sign Language and Linguistic Universals*. Cambridge: CUP.

Schembri, Adam, Jones, Caroline & Burnham, Denis. 2005. Comparing action gestures and classifier verbs of motion: Evidence from Australian Sign Language, Taiwan Sign Language and nonsigners' gestures without speech. *The Journal of Deaf Studies and Deaf Education* 10(3): 272–290. https://doi.org/10.1093/deafed/eni029

Smith, Carlota. 1997. *The Parameter of Aspect*, 2nd edn. Dordrecht: Kluwer. https://doi.org/10.1007/978-94-011-5606-6

Stokoe, William. (1960). Sign language structure: An outline of the visual communication systems of the American deaf. *Studies in Linguistics Occasional Papers 8*. Buffalo NY: University of Buffalo Press.

Sutton-Spence, Rachel & Woll, Bencie. 1999. *The Linguistics of British Sign Language*. Cambridge: CUP. https://doi.org/10.1017/CBO9781139167048

Wilcox, Sherman. 2004. Gesture and language: Cross-linguistic and historical data from signed languages. *Gesture* 4(1): 43–75. https://doi.org/10.1075/gest.4.1.04wil