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# Argument Structure in Peruvian Sign Language

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**Abstract**

This chapter offers an analysis of Peruvian Sign Language argument structure. It argues, following insights from research on other sign languages, that there is a correlation between the type of certain classifiers and the type of predicates predicted by the Unaccusative Hypothesis. In addition, it shows how the operation Agree values the specific features of each classifier, accounting for their handshape. Furthermore, it provides evidence in favor of the assumption that externalization of sign language syntactic structures follows a layering system, where various pieces of grammatical information can be externalized simultaneously, expressing predicates and arguments in a single sign.
Key words: Peruvian Sign Language, Lengua de Señas Peruana, LSP, argument structure, classifiers, Agree

## 1. Introduction

Peruvian Sign Language (LSP, its Spanish acronym) is the language created by the Deaf community in Peru. It comprises several varieties, both geographical and generational—some of which are argued not to be mutually understandable (Parks and Parks 2009, 2010, Clarks 2017a,b). Here I examine the argument structure of the LSP variety spoken in Lima, the capital, with data from users between 14-40 years old—mainly taken from the PUCP corpus (Rodríguez-Mondoñedo et al. 2015). To my knowledge, no study has addressed the properties of argument structure of LSP, in fact, there are almost no studies describing any grammatical aspect of LSP—exceptions are Clark 2017b, Madrid 2018, Cuti 2018, Rodríguez-Mondoñedo and Arnaiz 2020, Rodríguez-Mondoñedo 2021, but several investigations are in the making, as we will see.

Given that very little is known about LSP or the Peruvian Deaf community, I will spend some time explaining, in section 2, its basic sociolinguistic traits, and in section 3, the fundamentals of LSP grammar, including the issue of externalization. In section 4, I will describe LSP argument structure, in particular, its connections with the classifier

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system. Section 5 will be dedicated to the questions this analysis raises for studies on some independent issues. The last section presents the conclusions to be drawn from the present study.

## 2. An invisible language

LSP has been completely ignored by linguists and other academics for a long time. Notwithstanding a lexical repertoire with drawn pictures published by the Peruvian Department of Education before (MINEDU 1987), we can say that the first published account of LSP and Deaf culture was Paliza (1994), who, based on his own experiences as a leader in the Deaf community, featured a brief presentation of some aspects of the Peruvian Deaf experience, including a few remarks on LSP. According to Paliza, LSP has received, at least in the 20th Century, the influence of Spain Sign Language, given that Deaf leaders from Spain visited Peru, and the first School for the Deaf (today, CEBE 07 La Inmaculada de Barranco) was created in 1939 by religious people from Spain. It must be said that this school is oralist, i.e., its goal is to make Deaf people acquire oral skills, although it does not prohibit signing, which has promoted cultural interchanges between local Deaf people. As Paliza mentions, however, the main problem of the Deaf people in Peru is that they are isolated, without a full system for their education and complete development of their identity. Yet, the Inmaculada group was the seed for the foundation of the first National Association of the Deaf in 1958, whose members started the first discussions on LSP signs and their use.

Another landmark in the history of LSP is the arrival of Vernon Miller, a Deaf Baptist minister, who founded EFATA Church in 1971, and the first proper school for the Deaf in Villa El Salvador, one of the poorest districts in Lima at that time. The innovation that Miller brought to Deaf education was the use of sign language for school classes; this enormously impacted the Deaf community and produced two long-lasting results. First, a full generation of young Deaf students was educated and, in time, became empowered leaders of their communities. Secondly, given that Miller and his collaborators were American Sign Language (ASL) signers, ASL influenced LSP profoundly, creating another layer of fragmentation in the language, and steamed linguistic conflicts regarding the "purity" of local signs[1]. Other religious denominations, such as Adventists and Jehovah's Witnesses, also brought ASL to their work with Deaf people in Peru.

[1] It is interesting to notice how effortlessly a prescriptive discourse arises in a linguistic community. Of course, this is not specific of Deaf communities, as can be easily confirmed by the myriad of prescriptivist discussions oral language speakers have all over the world.

In fact, the few researchers that have investigated LSP have found that there is a great deal of variation inside. Parks and Parks (2009) were the first to attempt a sociolinguistic survey on the language. Interviewing Deaf individuals in several major cities in the country, they concluded that the vast majority of Deaf signers considered Lima LSP variety the most prestigious and the one they could understand well, even if most of them had the perception that LSP was not uniform across all Peru. Clark (2017b) claims that in Sivia, Ayacucho, there is a Deaf community signing a very distinct version of LSP, and Clark (2017a) even observes that, in Lima, younger generations of Deaf people sign a significantly different variety. We limit the data for the present work to younger Lima signers (20 to 40 years old).

As the Deaf community became more organized and empowered, with an increasing access to education and information, Deaf associations, cultural and sports clubs started to flourish, and Deaf culture slowly became more visible. Thus, Deaf people became more conscious about their rights and more capable of moving their organization towards political actions. After years of lobbying by Deaf activists in the public sphere the National Congress declared LSP an official Peruvian language in 2010 (Law 29535). This made possible the creation of the first public school for the Deaf (CEBE Ludwig van Beethoven), where classes are taught in LSP, for primary education. Later other schools were implemented for secondary education as well, with classes being offered in Spanish, with the use of interpreters. In addition, a number of small private schools have been created, also teaching in LSP, mainly under the leadership of parents of Deaf children and collaborators.

So far, this resembles the path of many other Deaf communities, which have grown and flourished around the educational system available to them. Many challenges rest ahead, however. The official recognition of LSP is not complete. In 2011, a Law of Languages (Law 29735) was approved, and not only did it not mention LSP at all, it established a rule for a language to be considered inside the scope of publicly funded linguistic policy, namely, that it should be "originaria" (lit. original), by which it means a language present in the territory before the arrival of Spanish (article 3, Law 29735). Since LSP has not left any written testimony before the 20$^{th}$ Century, it has been excluded from the linguistic services the State provides to minority oral communities. As such, there are no dictionaries, plans for standardization, training or certification for interpreters (all LSP interpreters are self-educated), and the like. LSP is not even listed in the roll of Peruvian languages kept by the Department of Culture, and it is frequently excluded when government institutions talk about linguistic diversity in the country, even when the officials in charge are linguists, a condition that has not prevented them, unfortunately, from claiming that LSP does not merit their attention (Olivero 2016). As a result, LSP has been almost invisible in the cultural media, and in general in the political discussion about cultural policies.

This situation blocks the expansion of the few advances obtained by the Deaf community, and it certainly slows down the fight against the linguistic deprivation suffered by Deaf children, which is widespread in the country (see Rodríguez-

Mondoñedo (2020) for a discussion). Also, it makes parents and educators less likely to attempt an education fully in LSP and more likely to prefer the "inclusive" option (mainstreaming), which in Peru basically consists of seating the child in a room full of hearing students, with classes in Spanish that she/he must somehow understand—the results are, of course, disastrous, as carefully discussed in Goico (2019).

The situation is so precarious that we do not even have a reliable number of LSP signers in the country. The last census (INEI 2017) informs that 10,447 individuals reported they "learnt to speak" with LSP, so we can assume that there are at least 10,447 native LSP signers. On the other hand, the very same census reports 25,763 individuals who "neither hear, nor speak", and 192,285 individuals with "speaking disability". Also, the first census for people with disabilities (INEI 2012) counted half a million people with hearing impairments (but it most likely included senior citizens with severe hearing loss, who are not really members of the Deaf community culturally speaking). Since no further clarifications are provided by the census, we can estimate 200,000 as potentially the highest number of Deaf individuals in the country.

Given this state of affairs, it is a sign of hope that in recent years, an interest in LSP has sprouted among young linguists, who have started researching on grammatical aspects of the language. Madrid (2018) is the first study on LSP classifiers, Cuti (2018) investigated the anthroponomic system, Rodríguez-Mondoñedo and Arnaiz (2020) analyze some LSP copula constructions, Arnaiz (2021) and Catalán (2021) researched the properties of the Spanish written system by LSP signers, Ramos (2022) analyzes LSP agreement and Cerna (2022) studied the pronominal system. In addition, more work is coming: on LSP distinctive phonological features (Raico, in preparation), LSP questions (Carlín, in preparation), mouthing (Mateo, in preparation), toponymy (Malca, in preparation), and hopefully much more.

The present investigation aims to contribute to the development of LSP linguistics by examining argument structure in the language. In the next section, we will present some basic and relevant aspects of LSP grammar.

## 3. LSP grammar and externalization of arguments

As mentioned, we know little about LSP grammar, most issues are yet to be investigated. Nevertheless, a growing body of research is forming, and we aim at giving some basic detail about the language grammar in this section, offering a brief overview, limited to syntactic properties, not only because they are the most relevant for this chapter, but also because most of the research done so far on LSP has focused on syntax.

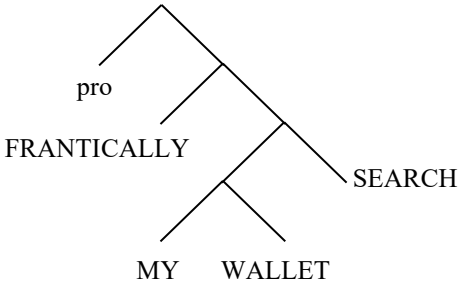
First, LSP, as many other sign languages, allows great mobility of constituents, but it seems to be a canonical SOV language, at least judging from the relatively high number of sentences that show this order, and also because native signers judge SOV

sentences as natural, except for psychological verbs, which tend to be SVO.[2] An example is given in (1)[3]:

(1) frantically
MY WALLET SEARCH
'I frantically search for my wallet.'

There are several details worth noticing in (1), besides OV order. As most (if not all) sign languages do, LSP makes use of simultaneous signs. In this case, the adverbial "frantically" is a non-manual sign, since it is produced with a face-sign, which remains in place during the whole sentence production. Of course, this is the natural result of having a language that can make use of a tridimensional space, but it means that the externalization device is able to "flat" a syntactic structure allowing for simultaneous expression of two or more structural layers. In that sense, we assume that (1) has a structure in line with the representation sketched in (2):

(2)

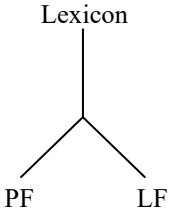



[2] For the purpose of this chapter, a "native signer" is a LSP signer who has acquired her language from the beginning of her life, i.e., a Deaf individual who has been raised in a Deaf family. This is crucial because, given that Spanish is a SVO language, LSP interpreters (all of them Spanish speakers) tend to sign in SVO fashion, and their LSP (which appears on some TV news programs) is the one with wider reach among the Deaf community (with occasional complaints about how some specific interpreters sign, however). In fact, interpreters' representatives are very often asked by government officials to discuss policies regarding the Deaf community's language. Although Deaf representatives are also invited to those meetings, their opinions have, in the best-case scenario, the same weight as that of interpreters, and quite often they are previously vetted by interpreters. This happens because the Deaf community is not sufficiently organized, and their leaders do not necessarily have the social capital needed to put forward a strong representation. How this affects LSP structure is yet to be studied. With respect to word order, our data points towards SOV, without necessarily precluding alternative analyses. Judy Shepard-Kegl (p.c.) suggested, for instance, that LSP could have a Ground-Figure order.

[3] Sentence (1) was offered by the Deaf consultant after being asked (in LSP) to produce an example to illustrate the usage of the verb SEARCH.

In order to focus on externalization matters, I am abstracting away from labels and a finer-grained structure, presenting only the bare-bone hierarchical structure. Adopting the classical model (3) (Chomsky 1995), (2) is a pre-spell-out structure, ready to be shipped to the interfaces:

(3)




A tree like (2) in a model like (3) is thought to be linearly unordered, that is, (2) only expresses the hierarchical relations between the signs. Thus, in principle, it could be exteriorized in any order, even simultaneously. However, there are two constraints an externalization process must respect. First, following Kayne's (1994) insight, linearization must piggyback on hierarchical (asymmetric) relationships, being, therefore, extremely local, unable to target discontinuous terminal nodes—banning, for instance, a sequence like <MY, SEARCH> because there is not a single node that contains MY and SEARCH and only MY and SEARCH. Second, it must comply with the requirements imposed by the materialization channel. For oral languages, this means that terminal nodes must be externalized one by one, in linear order, as Saussure famously stated (*Cours* §3, 145). However, as witnessed by (1) sign languages are not restricted in this manner. A question arises, thus, with respect to externalization in these cases: how does it happen?

It must be noticed that sign languages are also subject to sequential linearization. In (2), MY and WALLET are signed in that order, complying with Saussure's dictum—in fact, sign languages, similarly to oral languages, can adopt different word orders (see Sandler and Lillo-Martin 2006 for discussion). An important question is how FRANTICALLY can be exteriorized at the same time as the other terminal nodes[4].

Several attempts have been made to deal with the details of externalization in sign languages (Wilbur 2003, Sandler and Lillo-Martin 2006, Vermeerbergen et al. 2007, Napoli and Sutton-Spence 2010, Kremers 2012, Wilbur and Lourenço 2018, among others). It has been claimed that up to four propositions can be simultaneously expressed

[4] The issue of simultaneity is not restricted to the externalization of syntactic constituents. It pervades sign language phonology as well. For instance, in (2) the sign MY has different phonological features simultaneously appearing: the handshape (all fingers selected) and the location and movement (directed toward the signer's chest)—if the same handshape were directed toward the addressee, it would mean YOUR. For a recent discussion about the phonological complexities involved in simultaneous signs, see Sandler (2017).

in a sign language (Napoli and Sutton-Spence 2010: 650-653), under the assumption that a proposition is simply the assemblage of a predicate with its arguments. I will assume a layering system (Wilbur 2003, Wilbur and Lourenço 2018), according to which various pieces of information can be externalized at the same time as long as articulation of one item does not affect articulation of other items.

In the case of sentence (1), we are concerned with FRANTICALLY, which is externalized using the face articulator. In addition, it can be said that arms and even hands are conveying the same meaning; after all, when articulating SEARCH, the arms and hands are more tense, and move faster. Furthermore, although in this sentence the verb is articulated in the neutral space (pointing slightly down), if the location of the search were to be specified (up or right, for instance), the verb articulation will point to the search-location. In other words, the different layers of the articulator *hands* convey different information: place of articulation indicates the location where the event took place, whereas tension and pace together with the upper part of the face express how the event developed (i.e., manner), and so on. The face, being an articulator, has its own layers, typically its upper part (eyes and forehead) and lower part (below nose). In (1), both face layers are used. The frown (the upper layer) conveys the property of being worried, desperate. In addition, it must be noticed that the tongue is a bit out in (1), with slightly puffed cheeks (the lower layer), which specifically conveys the desperate manner. This means that the transcription in (1) has been simplified. Properly, we should tease apart the upper and lower layer of the face; the latter is a bound morpheme attached to the verb (cheeks are puffed only during the articulation of SEARCH), whereas the frown (the upper layer) is active during the whole sentence[5].

In other words, in (1) we have the following associations between layers of articulation and meanings (putting aside the object and verb):

(4) Upper face → desperate
Lower face→ (frantically) → MANNER
Arms and hands tension and pace of movement → MANNER
Hands place of articulation → LOCATION

According to this, a more accurate translation of (1) would be:

(5) Worrying about it, I frantically search for my wallet.

As it is easy to see, the possibility of having more than one argument-predicate relation simultaneously expressed complicates sign language argument structure in

[5] This means we can understand the upper layer as a secondary predicate, something like (5). Or maybe it is a way to introduce a conventional implicature (in the sense of Potts 2005), as suggested by Andrés Saab (p.c).

considerable ways. Given that the study of LSP is still in its infancy, in this chapter, I will limit myself to the most basic structures, namely the relationships between verbs and arguments when both are expressed with manual articulators. Nevertheless, the issue of simultaneity will come back, since it is crucial to the understanding of classifiers, which are externalized by the hands.

## 4. LSP basic argument structure

As it has been proposed by many different authors (see Hale and Keyser 1993 and Pylkkänen 2002 for some key works, and Williams 2015 for a comprehensive overview), a predicate can have between zero and three arguments, which gives us four types. At least since the Unaccusative Hypothesis (Perlmutter 1978), it is assumed that 1-argument predicates come in two different kinds: unaccusative (which realizes the internal theme-type argument) and unergative (which realizes the external agent-type argument). This raises the number of possible predicates to five. It is, thus, not surprising that sign languages, which are full languages, exhibit the full range of predicate-types as they do. What is interesting, though, is that at least a subset of predicate-types matches different material forms (that is, handshapes). This raises questions about the conceptualization of the predicate when there is an externalization mechanism that can use space and form.

There is a correlation between the predicate-type and the type of classifier a verb can combine with (see Zwitserlood 2003, Wesler and Lillo-Martin 2006, Benedicto and Brentari 2004, Benedicto et al. 2007, Geraci and Quer 2014, Kimmelman 2022, a.o.):

(6) a. Transitive predicates combine with handling classifiers (HC)
b. Unaccusative predicates combine with entity classifiers (EC)
c. Unergative predicates combine with body part classifiers (BC)

Before unpacking these generalizations, it is necessary to explain how we treat classifiers. This is not as straightforward as we would like it to be, since it remains a heavily discussed issue in the literature on sign languages (see Schembri 2003, Kimmelman 2022 for critical overviews). I will adopt some aspects of the view developed by Zwitserlood (2003), Wendler and Lillo-Martin (2006), among others, according to which at least some classifiers participate in agreement relations and are incorporated into the predicate. Thus, I will adapt Madrid (2018) analysis of LSP classifiers, not only because he adopts a compatible view, but also because it is the only study on LSP classifiers to date. These works, however, conceive agreement in a way closely related to subject-agreement in oral languages. Here I will adopt a wider view of agreement, but limiting it to just a sub-product of the operation *Agree* (Chomsky

2000, and much work after it), and I will say nothing about the traditional functional dependencies *Agree* seems to cause (being a subject, for instance)[6].

### *4.1. Classifiers*

The concept of classifier is used to describe the function of certain morphological systems in oral languages which separate nouns in different classes. According to Aikhenvald (2019), there are seven classification systems in oral languages: gender, numerical, noun properties, possessive, verbal, locative, and deictic. A few examples from oral languages are enough to understand why the term *classifier* is used to name similar systems in sign languages:

(7) Nominal intrinsic property Classifiers

| | |
|---|---|
| **Dâw** | tog |
| | *Dâw* |
| **CL**:human | girl |

'a girl' (lit. human girl)

[Aikhenvald 2019, example (3)]

(8) Location classifiers

| | | | | |
|---|---|---|---|---|
| Wis-uh | tarak-e-gu | a-**hakwa**-t | un | *Palikur* |
| 1PL-EXCL | push-COMPLETIVE-3FEM | | 3neuter-**CL:**into.liquid-DIR | |
| | waterway | | | |

'We push it (the canoe) into the water.'

[Aikhenvald 2019, example (8)]

(9) Deictic classifiers

| | |
|---|---|
| re-**rak** | *Mandan* |
| this-**CL:**sitting | |

'this (sitting)'

[Aikhenvald 2019, example (9)]

(10) Verbal classifiers

| | | | | |
|---|---|---|---|---|
| Nah | watak-**buk**-e | ini | mawru | *Palikur* |
| 1SG | untie-**CL:**linear-completive | this:NEUTER | cotton | |

[6] It is well known that traditional functional notions do not properly capture the complexities involved in the construction of the clause, and many researchers consider them an epiphenomenon (see McCloskey 1997 for a thorough discussion). This has not prevented them from using these expressions (*subject*, *object*, etc.) in an informal way, a practice that I follow here.

'I untied the string completely.'

[Aikhenvald 2019, example (7)]

In (7), the classifier *dâw,* a homonym of the language name*,* is a free morpheme and distinguishes nouns based on their intrinsic property (being human, in this case). In (8), the classifier -*hakwa* is a bound morpheme and categorize the location toward which the object (not mentioned in the sentence, but discursively available) is moved —notice that in this case, what is classified is not the unmentioned object (the canoe) but the noun that expresses its location (i.e., the waterway). In (9), the classifier -*rak* is also a suffix and refers to the position of the referred object (discursively available). In (10), the suffix classifier *buk* refers to an object with a linear form (a string of cotton). Classifiers, thus, can be free or bound morphemes and relate to various semantic dimensions both intrinsic (like being human or having a given form) and extrinsic (like position or location). Also, they can refer both to nouns expressed in the sentence or to entities only discursively available.

It is not a surprise, then, that the term "classifier" was chosen to define signs that seem to display this pattern (see Supalla 1982, 1986, Meir 2001, among many others). It must be said that there is no consensus on this issue among researchers, with positions falling all over the place, from categorically denying that there is any similarity with oral languages to simply ignoring comparisons and discussing classifiers on their own terms, including its conception as agreement markers, clitics and incorporated nouns (see Emmorey 2003, Sandler and Lillo-Martin (2006: 76-93, 344-351), Zwitserlood 2012, Madrid (2018: 14-45), among others, for overviews and discussions). Obviously, this is not the place to set these debates, but since my goal is to describe the basic argument structure of LSP, and classifiers (as we will see) are intimately connected to it, I must choose a theoretical way to address them. As already mentioned, I will consider the type of classifiers shown here as resulting from the operation *Agree* (Chomsky 2000 and subsequent work), partially siding with Zwitserlood (2003, 2008) and Madrid (2018), with certain differences to which we will come back.

Furthermore, this chapter is limited to just three types of LSP classifiers: handling, whole entity and body parts. The reason for this is that these types have been linked to three different kinds of predicates in a fairly uniform way (Benedicto and Brentari 2004, Benedicto et al. 2007, Geraci and Quer 2014, among others), and my goal is to check these correlations in LSP.

To close this section, I will provide an example for each type.

Handling classifiers (HC) represent entities held or moved by some agent (generally human). They roughly correspond to instrumental classifiers from Supalla's (1986) original insight on the matter[7]. (11) is an LSP example:

(11) Handling classifier (HC)
HOLD-TREMBLING-**CL**:
'He holds it (a bottle) trembling.'

[Adapted from Madrid 2018: 104]

Figure 1: He holds it trembling as his heart pumps.
[Taken from Madrid 2018: 104]

There are a few points to stress with respect to (11), besides the handshape, which matches the form of the sentence object (a bottle), which is the primary function of HC. First, note that the handshape not only expresses the form of the object, but also the action of holding. Second, there is a third meaningful simultaneous layer in the same hand, namely, the movement of the hand, which conveys the manner (trembling). Third, since this sentence is part of a longer narrative, the object (the bottle) has already been expressed, as a part of a previous sentence (in which the bottle is opened). Fourth, the non-dominant hand expresses a pumping heart, adding yet another meaningful layer, in fact, a different proposition: "The heart is pumping" (see the previous sections on layers of meaning)[8]. Here, I will focus on the hand expressing the HC.

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[7] Madrid (2018), following Zwitserlood (2003, 2008, 2012), divides body part classifiers in two groups, assigning them either to handling classifiers or to whole entity classifiers. We are keeping body part classifiers together as a group.

[8] An interesting issue is the handshape of the non-dominant hand. It has a pointing finger (but not a classifier). In this case, it is not pointing to the bottle, actually, it is not pointing to anything. I hypothesize that it expresses the stage-level nature of the predicate (*pumping*); if this is correct, the non-dominant hand is exteriorizing a different proposition, and the pointing finger would be a copula-type expression—see Rodríguez-Mondoñedo and Arnaiz (2020) for the suggestion that LSP may have, or it

Whole entity classifiers (EC) represent referents (individuals and objects) by expressing some salient property of an object or an individual (e.g., schematic form, intrinsic properties, and the like). They roughly correspond to Supalla's (1986) semantic classifiers. In (12), we have two LSP examples simultaneously expressed by each hand:

(12) Whole entity classifier (EC)

a. *Dominant hand*: location$_{\text{ipsolateral}}$-**CL**:☝

'The person is in front of it (the door)'.

b. *Non-dominant hand*: location$_{\text{ipsolateral}}$-OPEN-**CL**:🤚

'It (the door) opened'.

[Adapted from Madrid 2018: 91]

Figure 2: (As she was about to leave) the door opened for her.
[Taken from Madrid 2018: 91]

Again, there are some observations to make regarding sentences (12a) and (12b), besides the fact that they hold different ECs, one for an individual, the other for a plane object (a door, in this case). First, each one expresses a different proposition (i.e., different predicate-argument relations), simultaneously. Secondly, in both cases, the hand not only expresses the entities (person or door), but also what happened to them (being there or being opened). Third, these sentences are also part of a larger narrative, in which the signer tells the story of a girl who arrives at a door, tries to open it, fails to do so, and after that she starts to leave and the door just opens by itself. Fourth, the girl

is developing, a copula from the pronominal form, in line with similar typological evolutions in several languages.

is represented by the slight turn of the head, expressing that she is looking away from the door when it opens for her[9]. I will focus on the ECs.

Body part classifiers (BPC) were proposed originally by Supalla (1982, 1986), and there have been some questions regarding its inclusion into a singular class—see Zwitserlood (2012) for discussion. Some body parts represent themselves: mouth or eyes, for instance. Others are represented by handshapes; for example, the legs are represented by selecting the index and the middle finger. Here, I will focus on the last type. (13) is an LSP example:

(13) Body part classifier (BPC)
WALK-FORWARD-**CL**:
'She walks forward.'

[Adapted from Madrid 2018: 104]

Figure 3: She walks forward, going up and down the sidewalk.
[Taken from Madrid 2018: 89]

In this case, as we see in Figure 3, there is also an EC that represents a sidewalk in the non-dominant hand. Additionally, in the dominant hand, the movement forward represents the direction of the walking, and the movement up and down of the palm-hand expresses the manner in which the walking happens. Thus, here we have three externalization layers expressing three different predicate-argument relations. Also, we must notice that the BPC expresses not only the body part (the legs) but also the act of walking. As in the previous cases, (13) is part of a larger narrative, where a girl, introduced at the beginning of the story, is going up and down a sidewalk as she walks forward. Thus, in this instance, we have two different types of classifiers, EC and BPC, but we will focus on the BPC.

[9] Notice that I am not counting the head as a classifier in this case; rather, it is part of another complex system of role shifting, constructed action and meaningful use of the signing space. We will not discuss this issue here (see Perniss 2012, Lillo-Martin 2012, and references therein).

Summarizing, thus, in this section, we have seen that LSP classifiers form complex structures, indeed full classifiers constructions with simultaneous layers of externalization. They can refer to discursively available entities, and can express various semantic dimensions, intrinsic (being a person, or a flat object) or extrinsic (relative position, movement)[10]. There is an issue, though, that I have not yet properly addressed: are these classifiers bound or free morphemes? We will not entertain an answer to this question here but let me describe the problem we face. Let's take the ECs in (12) as an illustration. First, the EC refers to the door, but, as mentioned, it does not only express the door, but also its closing; although, the closing is expressed by the hand movement, not the handshape. This allows for an incorporation analysis (following Sandler and Lillo-Martin 2006: 83-84, among others), where the classifier and the movement become bound morphemes—obviously, given that a movement cannot happen without an entity. However, if we turn to the second EC, the one that refers to the person who arrived at the door, the situation is less clear. Putting aside the arrival (which is a different event not pictured in Figure 2), in (12) the EC expresses the person, but also her position with respect to the door. It is not clear if that relational location, created not just by the presence of the EC, but also by the presence and position of the other EC (the door), is a lexical head to which the EC incorporates. An alternative could be, for instance, that the position is pragmatically inferred, and therefore the EC would be a free morpheme (something like a deictic classifier). I will not set this issue here, but I would like to point out that classifiers seem to simultaneously express both arguments and predicates. Here I side with the analyses that contend that this is a modality effect, and that, syntactically, we must separate arguments and predicates in different heads.

### *4.2. Classifiers and argument structure*

We have seen in the previous section that a classifier is an iconization representing, among other things[11], a participant in a predicate: it can mimic the way objects are handled, the form of the object, or a body part involved in the action. For illustration, I add here a few more LSP classifiers identified by Madrid (2018), some of which I have already examined:

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[10] Thus, this is not so different from oral language classifiers, although see below.

[11] We will not discuss other types of classifiers – see Supalla (1986), Emmorey (2003), Zwitserlood (2003, 2008, 2012), Sandler and Lillo-Martin (2006), Madrid (2018), i.a., for further types and careful discussion.

| TYPE OF CLASSIFIER | HANDSHAPES |
|---|---|
| a. Handling | i.  ii.  iii.  iv.  |
| b. Entity | i.  ii.  iii.  |
| c. Body parts | i.  |

Table 1: Sampling of LSP classifiers (adapted from Madrid 2018)

We have also presented in (6), repeated as (14) for convenience, correlations between these classifiers and different argument structures in sign languages:

(14) Correlations between argument structure and certain classifiers
a. Transitive predicates combine with handling classifiers (HC)
b. Unaccusative predicates combine with entity classifiers (EC)
c. Unergative predicates combine with body part classifiers (BC)

In what follows, I provide examples of these correlations, and a proposal for a syntactic analysis for each of them. The reader should keep in mind that I will present only the bare bones of the syntactic structure. My goal is focused on the differences between each argument structure, showing how each of them get externalized; hence, I will ignore null heads and labels.

HCs combine with transitive predicates:[12]

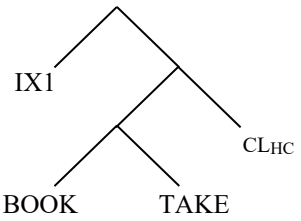
(15) IX1 BOOK TAKE+**CL**$_{HC}$
'I took a book.'

In this sentence, both subject (IX1) and object (BOOK) are expressed. Additionally, the verb TAKE takes the form of the HC classifier. The syntactic structure for (15) is straightforward, if we assume that the HC is an independent head that sits in a functional

[12] Notice that in (15) we are using IX to represent a pointing sign; in this case, IX1 will be the signer pointing to herself to say "I".

projection - see Gallego (2020) for an overview of the multiple middle periphery phenomena and the various functional projections in different oral languages. As mentioned, I also assume that the verb is final, as well as functional projections, whereas specifiers are initial. Under these assumptions, it is enough to assume that the HC classifier probes the object BOOK, agrees with it, and then incorporates into it, resulting in what seems a regular object agreement relation. To see how this happens, let's start with the base-generated structure in (16). Here, the verb TAKE has merged first with the internal argument BOOK, and then [BOOK TAKE] merges with the HC classifier; and the new constituent merges with the external argument (IX1):[13]

(16)




Remember that the externalization of (16) will end up with TAKE and the CL$_{HC}$ forming a single sign, as (15) shows. The question, then, is how we achieve this. There are various ways to produce this result. For instance, TAKE can undergo incorporation by head movement, moving to the next head CL$_{HC}$, forming a complex morpheme. But recent developments in the interface between syntax and morphology have brought upon other possibilities. We could say that we have a span (in the sense of Svenonious 2016, 2020) with a treelet composed of those two heads, meaning the lexicon can store parts of the tree (the spans) and insert the corresponding form at once. No matter which analysis we adopt here, there are a couple of crucial aspects that need to be refined.

First, the feature matching between BOOK and the CL$_{HC}$. BOOK must have the relevant features to value the unvalued features of the CL$_{HC}$. Adapting Madrid (2018) featural system for LSP (in turn based on Zwitserlood 2003 for Sign Language of the Netherlands), I propose that BOOK has the following valued features:

(17) BOOK
[form: straight]
[form: flat]

On the other hand, the HC has its features [form] unvalued:

---

[13] Remember we are ignoring null heads, for instance, the T head. There is no evidence that LSP has a morphological expression of Tense, which of course does not preclude a null T. To avoid any commitment, I have opted for labeless trees.

(18) $CL_{HC}$
[form: ___ ]
[form: ___ ]

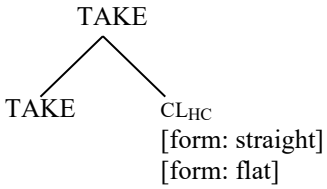
Notice that (18) is a bundling of formal features; assuming a post-syntactic insertion, the specific exponents have to be filled after the corresponding domain had been shipped to the interfaces, as predicted by (3). But before that, the operation *Agree* must value the features in (18), under match with BOOK:

(19)

| $CL_{HC}$ | | BOOK |
|---|---|---|
| [form: ___ ] | ⟶ | [form: straight] |
| [form: ___ ] | ⟶ | [form: flat] |

After being valued, the $CL_{HC}$ incorporates into TAKE, forming a complex head:

(20)




In order to provide the proper phonological form for (20), we must explain something regarding the features of TAKE. We have seen in the previous section that the phonological expression of this verb is just the movement, which in this instance, goes from the object toward the subject. As already mentioned, every movement implies something that moves, therefore, the classifier (the handshape) must incorporate into the predicate (the movement) to support it morphologically.

The second aspect in (20) is the assignment of thematic roles. Under standard assumptions, BOOK (the internal argument) receives the Theme role from the verb TAKE, and IX1 (the external argument) receives the Agent role from the classifier. This means that the $CL_{HC}$ may be understood as an agentive small *v*, which introduces the external argument and assigns it a theta role. Benedicto and Brentari (2004) make a comparable proposal, identifying HCs as agentive, although they employ a finer grained structure. Now, there is nothing in (20) that expresses the fact that this is an agentive classifier, even after valuation in (19). To capture that, we will need an additional feature. We can use Zwitserlood's (2003) and Madrid's (2018) feature [control].

Notice that this is not really a semantic feature, and it must not be confused with the Agent role. [control] makes a crucial contribution to the phonological expression of the classifier. If we do not include it, the form of the classifier would be  and not  . The

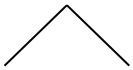
reason for this is that the form features of the classifier have taken the values [straight] and [flat] from BOOK, resulting in a handshape with the fingers extended and closed. Adding the [control] feature will trigger the grabbing form, bending the fingers:

(21) a.
[straight] =
[flat]

b.
[straight]
[flat] =
[control]

Thus, the phonological form of the complex head produced by TAKE and $CL_{HC}$ will be externalized as the hand pulling a straight and flat object[14]:

(22)



TAKE
[move toward agent]

$CL_{HC}$
[form: straight]
[form: flat]
[control]

=

In other words, the feature composition of (22), a result of incorporating the CL into TAKE, are externalized as the movement of the hand from the locus assigned to BOOK to the locus assigned to the agent (hence, the curvy arrow in (22) moving toward the taker).

We have kept a minimal structure, representing only the operation Merge, but nothing precludes us from implementing a more complex configuration. For instance, we could express (22) in a Ramchand's (2008) style, with multiple heads expressing different aspects of the event, or we could deploy a full Lexical Conceptual Structure (Jackendoff 1990). Since my purpose here is just to represent LSP basic argument structure, I will not explore this possibility.

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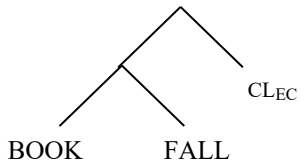
[14] Notice that the picture in (22) is a 2D rendition of a 3D handshape and movement. Furthermore, the handshape can be expressed in terms of its phonological features (selected fingers, closure, etc., see Brentari 2019 for a recent overview of sign language phonology). For LSP, see Raico (in preparation). With respect to the classifier, here we are only dealing with the valuation of its features, not its interpretation status; see Pesetsky and Torrego (2007) for the claim that interpretability and valuation are different aspects of the features.

Let's turn now to ECs. As mentioned, they combine with unaccusative predicates, that is, with predicates that only have internal argument:

(23) BOOK FALL+**CL**$_{EC}$
'The book fell.'

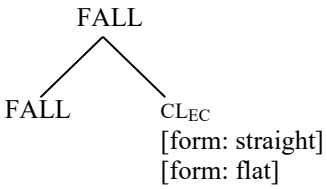
In (23), there is no external argument, and, consequently, no Agent. The internal argument is expressed in an independent phrase (BOOK), with the classifier heading a functional projection:

(24)




Notice that this has the same internal argument as (15), a transitive sentence; hence, it has exactly the same features. Yet, the classifier is different: now we have  . Given our analysis in (22), it should be apparent why this is the case: the classifier lacks the feature [control]. Other than that, the *Agree* operation takes place exactly like in (19), and incorporation of the EC into FALL renders a complex head:

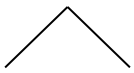
(25)




Like in (16), we need to separate the movement (which is the phonological content of the verb) from the handshape (the phonological content of the classifier). In (23), FALL corresponds to a movement down from the original position to the baseline. Then, after incorporation, the externalization will be as follows[15]:

(26)

[15] The caveat from fn. 14 also applies here.



FALL
[move down from original position] to baseline]

$CL_{EC}$
[form: straight]
[form: flat]

=

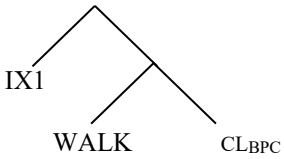
Note that this predicts a wide range of variation with respect to both the handshape and the movement, as it is indeed the case. The former depends on the shape of the object, and the latter will change according to the baseline. A book on a bookshelf moves from a vertical to a horizontal position, if the baseline is one of the shelves, but further down if the baseline is the ground. If the object is, for instance, an apple that falls from a tree, the handshape will be round, and the baseline will be the ground (which can be either included in the sentence, or discursively available).

Finally, we arrive to BPCs, which combine with unergative predicates, i.e., with predicates that require only external arguments:

(27) IX1 WALK+**CL**$_{BPC}$
'I walk.'

In (27), there is no internal argument, and therefore, no Theme. The external argument is a pronominal form (IX1), and the classifier is in a functional projection. We could entertain a base-generated structure like (28):

(28)

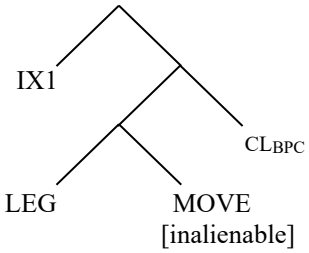



Following an already familiar process, now the BPC should be incorporated into the verb. Notice that in this case *Agree* cannot happen, since the probe ($CL_{BPC}$) does not c-commands any goal. A question arises, then, with respect to how the classifier will acquire its shape. We cannot resort to a default shape, since it does vary with respect to the type of body part involved. For instance, if the walker were a chicken, the classifier will turn into a chicken fingers shape (three selected fingers in both hands), which will move as walking. The only conclusion is that (28) cannot be the structure for the unergative classifier construction.

In fact, it has been suggested that unergative verbs project more than meets the eye. Hale and Kayser (1993) proposed that unergative verbs have transitive structures, with

an object incorporated into the verb. It is with this object that the classifier will agree, under a process akin to the one devised for (15). For (27), this would mean a structure like (29), where the verb MOVE selects an inalienable possessed noun as its complement:

(29)




Given that Agent is assigned in (29), the classifier now must have the unary feature [control], but it has its [form] features unvalued. Now the classifier can value its [form: ___ ] feature under *Agree*, in a procedure similar to (19), obtaining the shape  . For BPC, I codify the [form] feature in a way similar Zwitserlood (2003) and Madrid (2018), with the value [with legs]:

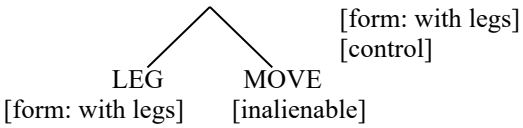
(30)


We should remember that the features [form: with legs] and [control] are interpretable formal features, which will need to be interpreted phonologically after arriving at the corresponding interface (PF in (3)), and semantically at the other interface (LF in (3)). Furthermore, we must notice that LEG has just the necessary features to be merged with the verb and be interpreted by the interfaces[16].

After valuation, the classifier is enabled to be interpreted in the phonological component, but before that, it must incorporate into the complex head already formed by the incorporation of LEG into the verb. The result is (31):

(31)


[16] If we were to implement (30) in terms of Distributed Morphology, we would say that LEG just has an index, and that Agree makes possible the sharing of its index with the classifier. Later, that index will be interpreted as 'with legs'.




This means that a literal translation of (27) is not 'I walk', but 'I leg'; in other words, the denominal English verb 'to walk' corresponds to the denominal LSP verb 'to leg'. This is a very common occurrence in denominal verbs across languages. For instance, in Jaqaru (Aymaran family, spoken in Peru), the word for 'to drink' and for 'water' is the same, namely *uma,* which means that in Jaqaru the literal equivalent of 'to drink' is 'to water' (Rodríguez-Mondoñedo 1999: 25). In fact, exactly the same happens in English, where 'walk' can be a noun or a verb. It is tempting to interpret 'to walk' as 'to make a walk', but paraphrases like these have different meanings (as early observed by Fodor 1972); so, English "to walk" also results from the incorporation of a noun 'walk' into its predicate. Likewise, in LSP the verb for 'to walk' is literally 'to leg'.

So far, we have seen that there is a correspondence between the shape of the classifier and the argument structure of some verbs. This is in line with previously observed patterns in other sign languages (Benedicto and Brentari 2004, Benedicto et al. 2007, Geraci and Quer 2014, among others).

As mentioned, I have analyzed the very bare bones of argument structure, without going further into the structure of the event or the whole clause, which are different endeavors. In fact, the main insight from Talmy's (1985) groundbreaking work is that the verb cannot bear by itself the responsibility for event structure. For instance, Manner and Path are also categories that need to be included (see Supalla 1982 and Talmy 2007 for some applications to sign languages), but I assume, following Hale and Kayser (2005), that argument structure is a separate component of grammar, and that we must start from argument structure and then try to deduce event structure, and not the other way around. I hope I have contributed to this effort from the point of view of LSP. [17]

## 5. Some loose ends

In this final section, I would like to address some issues not considered in the previous sections that might be sources of misunderstandings.

First, I would like to highlight the relation between form and meaning in LSP classifiers and its comparison with similar oral systems. Clearly form and meaning are

[17] Kimmelman 2022 shows cases where the relation between event structure and classifier type in at least some sign languages is not so straightforward. More research is needed, of course, but the point here is that argument structure does not necessarily predict event structure.

simultaneous, and the suggested task is disentangling them analytically. We have found in the Unaccusative Hypothesis and some of its structural interpretations a way to do so. We must keep in mind, though, that these tools were proposed having oral language data in mind; it is indeed remarkable that this theoretical apparatus can say something about LSP, a sign language. Clearly, these are welcome news by someone (like me) who aims to find the ultimate properties of the Faculty of Language, which can, of course, be manifested in sign languages. Nevertheless, we must be wary of any Procrustes' inclination. In fact, I believe that, after examining sign languages, we can look back at oral languages and acknowledge some features we didn't notice were there—as it is already happening in the domain of gestures (see Abner et al. 2015 for an overview) or the anaphora system (see Schlenker 2017). In that sense, departing from contrarian suggestions, it is not only valid but indeed necessary to continue the comparison, trying hard to find connections between sign and oral languages. So, yes, simultaneity does provide new challenges, but it should not be a reason for discontinuing this enterprise—see Sandler and Lillo-Martin (2006) for a thoroughly detailed exposition of the comparative project.

In addition, we must be aware of the real scope of the analytic tools. For instance, the operation *Agree*, which is a key-feature of the current analysis, should not be confused with the normal use of agreement (as in for instance "subject-verb agreement"). Although the latter could be understood as a sub-case of the first, in no way *Agree* is limited to subject agreement, not even to A-dependencies, but it extends to A-bar, including operator-variable relations, and more. In the present work, I have used it to carve the shape of LSP argument structure, identifying its analytic primitives. No claim can be made from this analysis about the possibility (or not) of sign languages to have agreement. No tree in the present work includes any functional head related to traditional agreement (no T, for instance). In that sense, we do not need to explain why in sign languages there seems to be a preference for object agreement, contrary to the typological trend that gives prominence to subject agreement. We have not shown object (or subject) agreement, we have only shown how *Agree* can explain the regularities in the shape/externalization of argument structure.

Of course, the proposal is fully compatible with the claim that there is agreement in sign languages, including LSP. Lourenço (2018, and this volume) for LIBRAS and Ramos (2022) for LSP provide, I believe, important arguments in favor of the idea that this is indeed the case (see also Pfau et al. 2018 and references therein). If agreement must code dependencies using a physical channel (to be heard or to be seen), then it should be no surprise that, if the channel is sound, agreement is expressed as co-sounding; but if the channel is visual space, then it is expressed as co-locating.

Also, in LSP, as well as in other sign languages, not all verbs can incorporate classifiers, regardless of the nature of the predicate. In these cases, arguments are represented only by pronominal forms (when not lexically expressed):

(32) $\text{MARY}_a$ LIKE $\text{IX}_b$

'Mary likes him.'

Observing that these verbs are often anchored on the body (in LSP, LIKE is articulated on the front part of the neck), and following Meier et al. (2007), in these cases, the body is used to introduce the external argument, given than the body has the highest prominence in a visual system. Furthermore, LIKE shows no iconicity (in the handshape, index and thumb fingers close on each other, pointing to the neck), that is, the components of its predicate structure have not been codified in different morphemes, but just as one arbitrary handshape. It must, thus, resort to the default introducer of external arguments, the body.

### 6. Conclusion

I have examined how LSP builds different predicate structures and concluded that, at least for a subset of them, we can identify sub-components of the predicate, using the Unaccusative Hypothesis together with the operation *Agree*. This explains the correlations between type of classifiers and type of argument structures, given that the handshapes of the classifiers are built from the features of the corresponding arguments. I believe these results strengthen the force of the comparative Oral-Sign Language project, which aims to better understand the nature of the Language Faculty, a task that cannot be completed without taking in consideration languages from different modalities.

Let me end this chapter by reminding the reader that the fight for full recognition of sign languages as natural languages is not over, not even after legal recognition, as witnessed by the situation of LSP described in the second section. A no-small contribution to this fight is unraveling the inner workings of Sign Language grammars.

## References

Abner, Natasha, Kensy Cooperrider, and Susan Goldin-Meadow. 2015. Gesture for linguists: A handy primer. *Language and Linguistics Compass* 9.11, 437-451.

Arnaiz, Alexandra. 2021. La lengua de señas peruana como vehículo de aprendizaje del castellano escrito como segunda lengua. MA Thesis. Pontificia Universidad Católica del Perú. Lima: Perú

Benedicto, Elena, Brentari, D. 2004. Where did all the arguments go? Argument-changing properties of classifiers in ASL. *Natural Language and Linguistic Theory* 22: 743–810

Benedicto, Elena, Cvejanov, S., and Quer, J. 2007. Valency in classifier predicates: A syntactic Analysis. *Lingua* 117: 1202–1215

Brentari, Diane. 2019. *Sign language phonology*. Cambridge University Press.

Catalán, Yedirel. 2021. Características morfológicas y morfosintácticas en el español escrito por escolares signantes de la lengua de señas peruana (LSP). Tesis de Licenciatura. Lima: UNMSA

Cerna, Francisco. 2022. Pronombres personales en lengua de señas peruana (LSP). Tesis de Licenciatura. Pontificia Universidad Católica del Perú. Lima: Perú

Chomsky, Noam. 1995. *The minimalist program*. Cambridge, MA: MIT press

Clark, Brenda. 2017a. Sign Language Varieties in Lima, Peru. *Sign Language Studies*. 17, 2, 222-264

Clark, Brenda. 2017b. A grammatical sketch of Sivia Sign Language. Ph.D. Dissertation, University of Hawai‘i at Mānoa

Cuti Zanabria, Elizabeth. 2018. Sistema Antroponímico en la Lengua de Señas Peruana. Tesis de Licenciatura. Lima: UNMSM

Emmorey, Karen (ed). 2003. *Perspectives on classifier constructions in sign languages*. Psychology Press.

Fodor, Jerry A. 1970. Three reasons for not deriving "kill" from "cause to die". *Linguistic Inquiry* 1, 4: 429-438

Gallego, Ángel. 2020. Morpho-syntactic Variation in Romance *v*: A Micro-parametric Approach. *Probus* 2020; 32(2): 401–437

Geraci, Carlo, Josep Quer. 2014. Determining argument structure in sign languages. In: *Structuring the Argument: Multidisciplinary research on verb argument structure*, eds. Asaf Bachrach, Isabelle Roy and Linnaea Stockall, 45–60 John Benjamins.

Goico, Sara. 2019. The impact of ‘inclusive’ education on the language of deaf youth in Iquitos, Peru. *Sign Language Studies* 19(3): 348-372

Hale, Kenneth, Samuel J. Keyser. 1993. ‘On Argument Structure and the Lexical Expression of Syntactic Relations’. In *The View from Building 20: Essays in Linguistics in Honor of Sylvian Bromberger*, eds. K. Hale and J. Keyser, 53-109, Cambridge: MIT Press

Hale, Kenneth, Samuel Jay Keyser. 2005 Aspect and the syntax of argument structure. The syntax of aspect: Deriving thematic and aspectual interpretation. In: *The syntax of aspect: Deriving thematic and aspectual interpretation*. Eds. Erteschik-Shir, Nomi, Tova R. Rapoport, and Tova Rapoport, 11-41, Oxford: OUP

Halle, M., and Marantz, A. 1993. Distributed morphology and the pieces of inflection. In *The View from Building 20: Essays in Linguistics in Honor of Sylvian Bromberger*, eds. K. Hale and J. Keyser, 111–176. Cambridge, MA: MIT Press

INEI. 2012. Primera Encuesta Nacional Especializada sobre Discapacidad ENEDIS 2012. https://conadisperu.gob.pe/observatorio/estadisticas/encuesta-nacional-especializada-sobre-discapacidad/ Accessed 7 April 2022

INEI. 2017. CPV 2017 Censo de Población y Vivienda 2017. Lima: Perú http://censo2017.inei.gob.pe/ Accessed 7 April 2022

Jackendoff, Ray. 1990. *Semantic structures*. Cambridge, MA: MIT press

Kimmelman, Vadim. 2022. Argument Structure in Sign Languages. *Annual Review of Linguistics*, 8, 19-38.

Kremers, Joost 2012 The syntax of simultaneity. *Lingua*, 122, 9, 979-1003

Lillo-Martin, Diane. 2012. Utterance reports and constructed action. In: *Sign language. An international handbook*. Eds. Pfau, Roland, Markus Steinbach, and Bencie Woll. 365-387, De Gruyter Mouton.

Lourenço, G. and R.B. Wilbur. 2018. Are plain verbs really plain? Co-localization as the agreement marker in sign languages. *FEAST* 2: 68-81.

Madrid Vega, Rodrigo. 2018). Clasificadores en la Lengua de Señas Peruana (LSP). Tesis de Licenciatura. Lima: PUCP

McCloskey, James. 1997. Subjecthood and subject positions. In *Elements of Grammar: Handbook in Generative Syntax*, Ed. Liliane Haegeman, 197-235. Kluwer, Dordrecht

Meir, Irit. 2001. Verb Classifiers as Noun Incorporation in Israeli Sign Language. In: *Yearbook of Morphology* 1999, eds. Booij, G. and J. Van Marle, 299-319. Dordrecht: Kluwer

Meir, Irit; Padden, Carol; Aronoff, Mark; Sandler, Wendy. 2007 Body as subject. *Journal of Linguistics*. 43:531–563

MINEDU. 1987. *Lenguaje de Señas Peruanas*. Lima: Ministerio de Educación

Napoli, D. J., and Sutton-Spence, R. 2010. Limitations on simultaneity in sign language. *Language* 86, 647–662

Olivero, Hugo. 2016. Los sordos peruanos y su lengua ignorada. *Lucidez*. https://lucidez.pe/los-sordos-peruanos-y-su-lengua-ignorada-por-hugo-olivero/ Accessed 7 April 2022

Paliza Farfan, Alberto. 1994. The problem of the Peruvian deaf person. In: *The Deaf Way: Perspectives from the International Conference on Deaf Culture*. Edfs. C. J. Erting, R. C. Johnson, D. L. Smith and B. D. Snider, 804–810. Washington, DC: Gallaudet University Press.

Parks, Elizabeth y Jason Parks. 2009. *Sociolinguistic Survey Report of the Deaf Community of Peru*. Summer Institute of Linguistics Electronic Survey Report 019.

Parks, Elizabeth y Jason Parks. 2010. A Sociolinguistic Profile of the Peruvian Deaf Community. *Sign Language Studies* 10, 4, 409-441

Perlmutter, David M. 1978. Impersonal passives and the Unaccusative Hypothesis. *Proc. of the 4th Annual Meeting of the Berkeley Linguistics Society*. UC Berkeley, 157–189.

Perniss, Pamela. 2012 Use of sign space. In: Pfau, Roland, Markus Steinbach, and Bencie Woll (eds). *Sign language. An international handbook*. De Gruyter Mouton. 412-431. De Gruyter Mouton

Pesetsky, D., and E. Torrego. 2007. The syntax of valuation and the interpretability of features. In *Phrasal and clausal architecture*, eds. S. Karimi, V. Samiian, and W. Wilkins, 262–294. Amsterdam: John Benjamins

Pfau, Roland, Martin Salzmann, and Markus Steinbach. 2018. The syntax of sign language agreement: Common ingredients, but unusual recipe. *Glossa*: a journal of general linguistics 3.1, 1-46

Potts, Christopher. 2005. *The logic of conventional implicatures*. Oxford: Oxford University Press

Pylkkänen, Liina. 2002. Introducing arguments. Doctoral dissertation. Massachusetts Institute of Technology

Ramchand, G. C. 2008. *Verb meaning and the lexicon. A first phase syntax*. Cambridge: CUP.

Ramos, César. 2022. Los verbos de concordancia doble de la lengua de señas peruana (LSP): un análisis del uso del espacio. Tesis de Licenciatura. Pontificia Universidad Católica del Perú. Lima: Perú

Reinhart, Tania. 2002. The Theta System: An overview. *Theoretical Linguistics* 28: 229–290

Rodríguez-Mondoñedo, Miguel and Alexandra Arnaiz. 2020. Copula constructions in Peruvian Sign Language. Presented at *SULA 11 Semantics of Underrepresented Languages in the Americas*. Mexico.

Rodríguez-Mondoñedo, Miguel, Sonia Maruenda y Alexandra Arnaiz (Compiladores). 2015. *Archivo Digital de la Lengua de Señas Peruana*. https://repositorio.pucp.edu.pe/index/handle/123456789/124183 Accessed 7 April 2022

Rodríguez-Mondoñedo, Miguel. 1999. La formación de palabras en aimara tupino. *Boletín de la Academia Peruana de la Lengua*, 31, 131-160.

Rodríguez-Mondoñedo, Miguel. 2020. Privación lingüística: el caso de la lengua de señas. *AIEDI* https://www.aiedi.org/2020/01/17/privacion-linguistica-el-caso-de-la-lengua-de-senas/ Accessed 7 April 2022

Rodríguez-Mondoñedo, Miguel. 2021. Modificación y desarrollo en lenguas orales y de señas. In: *Actualidad y futuro del pensamiento de Eugenio Coseriu. Estudios de teoría del lenguaje, descripción lingüística, dimensión textual y lingüística peruana*. Eds. Garatea, Carlos, Wiesse, Jorge, Fernández Alcaide, Marta, 305-323. Madrid. Universidad de Sevilla.

Sandler, Wendy, Diane Lillo-Martin. 2006. *Sign Language and Linguistic Universals*. Cambridge: CUP

Sandler, Wendy. 2017. The Challenge of Sign Language Phonology. *Annual Review of Linguistics*. 3: 15.1-15.21

Schembri, Adam. 2003. Rethinking ‘‘classifiers’’ in signed languages. In *Perspectives on Classifier Constructions in Sign Languages*, ed. Karen, Emmorey, 3–34. Mahwah, NJ: Lawrence Erlbaum Associates.

Schlenker, Philippe. 2017. Sign language and the foundations of anaphora. *Annual Review of Linguistics* 3: 149-177.

Supalla, Ted. 1982. Structure and Acquisition of Verbs of Motion and Location in American Sign Language, PhD Thesis, UCSD.

Supalla, Ted. 1986. The Classifier System in American Sign Language. In: *Noun Classes and Categorization*, Ed. Craig, C. 181-214. Amsterdam: John Benjamins

Svenonius, Peter. 2016. Spans and words. In *Morphological metatheory*. Eds. Siddiqi, Daniel, and Heidi Harley, 201-224. John Benjamins

Svenonius, Peter. 2020. A span is a thing: A span-based theory of words. *NELS* 50.

Talmy, Leonard. 1985. Lexicalization patterns: Semantic structure in lexical forms. In *Language typology and syntactic description III: Grammatical categories and the lexicon*, ed. Timothy Shopen, 57-149. Cambridge: Cambridge University Press.

Talmy, Leonard. 2007. Lexical typologies. In: *Language Typology and Syntactic Description*. Ed. Timothy Shopen Vol. III: 66-168. Cambridge: CUP

Vermeerbergen, L. Leeson and O. Crasborn (eds.). 2007. *Simultaneity in Sign Language: Form and Function*. Amsterdam: John Benjamins

Wilbur, Ronnie. 2003. Modality and the structure of language: Sign languages versus signed systems. In *Oxford Handbook of Deaf Studies, Language, and Education*, ed. Marc Marschark and Patricia E Spencer, 332–346. New York: Oxford University Press.

Zwitserlood, Ingeborg. 2003. Classifying hand configurations in Sign Language of the Netherlands. Doctoral dissertation, Utrecht University

Zwitserlood, Ingeborg. 2008. Morphology below the level of the sign. Frozen forms and classifier predicates. In: *Signs of the Time: Selected Papers from TISLR 2004*. Ed. Josep Quer. Hamburg: Signum, 251-272.

Zwitserlood, Ingeborg. 2012. Classifiers. In: *Sign language. An international handbook*. Roland Pfau, Markus Steinbach, and Bencie Woll. De Gruyter Mouton, 158-185.