

## Verbal Classifiers in Sign Languages... Are they Agreement?<sup>1</sup>

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### 1. Introduction

Sign Languages (SLs) have a subset of predicates, called Spatial Verbs, that are used to express location and motion making use of the signing space to locate referents and locations. These verbal units are morphologically complex and are formed, among other components, of a *movement* (in the kinetic sense) component and a hand configuration which has been identified as *classifier*.

The following is an example:

- (1) MONEY<sub>a</sub>      F<sub>a</sub>+BE\_LOC<sub>x</sub>      (Benedicto 2004, (25))  
'Coins of money are located [there at x]'

In (1), the verbal predicate can be decomposed in, at least, two parts: the handshape configuration F- (as this handshape is the one used for the fingerspelling of letter F), formed by putting together the index and the thumb fingers, forming a circle, and extending the other three fingers, corresponds to the Classifier and denotes a class of entities that are round and small; the movement (-BE\_LOC), a short downward movement articulated at a location in the signing space identified by the subindex *x*, corresponds to verbal part of the predicate (in this case, a stative locative predicate).

The SL literature has identified different types of classifiers. Here I follow the adaptation of Engberg-Pedersen's (1993) classification, proposed in Benedicto and Brentari (2004), which identifies 4 types based on morpho-syntactic criteria: *whole entity* classifiers (whose shape refers to the shape of the whole object/referent), *handling* classifiers (handshapes that refer to the way objects are held or manipulated), *extension-and-surface* (handshape refers to properties of the

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<sup>1</sup> I would like to thank the signers of all the Sign Languages that have contributed their languages and their knowledge about them to make these analyses possible.

referent such as perimeter, width, surface) and *limb/Body\_Part* (handshapes refer to a part of the body). The example in (1) corresponds to a *whole entity* classifier.<sup>2</sup>

In this paper, I address and evaluate two issues: first, the nature of verbal Classifiers (CLSF) as a *potential agreement phenomenon* in SLs; second, verbal Classifiers as a *potential modality effect* (or not) when compared to Spoken Languages (SpLs). More concretely, I tackle the common formal and descriptive properties of agreement and CLSF, as well as the distinguishing ones (§2). Then I propose a formal representation of those properties (§3), which leads to the beginning of a comparative analysis with similar CLSF phenomena in SpLs in order to evaluate any potential Modality Effects (§4). This is summarized in (2) below:

(2) *Goals*

a. *General*

- i. the nature of verbal Classifiers (CLSF) as a potential agreement phenomenon in SLs, and
- ii. the nature of potential modality effects (or not) when compared to spoken languages (SpLs)

b. *Specific*

- i. the common formal properties of agreement and CLSF [§2];
- ii. the distinguishing formal properties [§2];
- iii. the formal representation of those properties [§3]; and
- iv. to initiate a comparative analysis with similar CLSF phenomena in SpLs to evaluate any potential Modality Effects [§4]

The main claims that will be argued for in this paper are summarized in (3) next:

(3) *Claims*

- CLSFs *share* with Agreement the *formal* syntactic AGREE operation, both in SLs and SpLs, through an uninterpretable *uD*-feature;
- CLSFs are *different* from Agreement in their semantics and in the directionality of transfer of their contentful features.
- crosslinguistically, the same patterns observed in SLs can also be detected in (some) spoken languages. There is, thus, strictly speaking, no Modality Effect associated to CLSF either in descriptive nor in formal ways; however, the pervasiveness of CLSF in SLs can be considered at the same level as the of *geo*-pervasiveness of CLSF in SpLs (§4.2).

Throughout this paper, I will use *Agreement* to refer to the descriptive properties described in Section 2 of this paper, and AGREE as the formal syntactic operation taking place in a given structural configuration containing specific formal features.

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<sup>2</sup> Similarly, there are also classifications of the types of movements associated with the classifier handshapes. Those will not be relevant in this paper (but see Benedicto and Brentari, 2004:749 and Benedicto, Branchini and Mantovan, 2017).

## 2. Classifiers as Agreement?

### 2.1 What is involved in Agreement?

In their 2012 paper following Corbett (2006), Mathur and Rathman attribute four components to Agreement:

- (4) *Components of Agreement*
- a. controller
  - b. target
  - c. domain
  - d. features

The *controller* is the element that determines Agreement. The *target* is the element whose form is determined by Agreement. The *domain* is the syntactic environment where Agreement occurs and, finally, the *features* involved in the process.

As I will make explicit in the following sections, I will show that Agreement and CLSF only fully share the *domain* (4c) and partially the *features*, but not the *controller* and the *target* (4a.b.), which are crucially different.

### 2.2 The Components.

In this section I will evaluate the four components identified above and contrast their behavior in (traditional) cases of Agreement and cases of verbal Classifiers.

#### 2.2.1. The *Controller* (4a).

In (traditional) Agreement phenomena the *controller* is the DP argument, whose D  $\phi$ -features determine a certain morpho-syntactic behavior on the verb (or verbal element). In a SL, that behavior affects the location of the beginning and/or end of the (phonetic/kinetic) movement of a verbal sign, as in the following examples in (5):

- (5) a. 1-ASK-a [ASL]  
'I ask her' (Sandler-LilloMartin 2006, 3.4-a.)
- b. 3-AJUDAR-1 [LSC]  
'S/he helps me' (Ribera 2015, 6-14b)

In (5a), the phonologically empty 1<sup>st</sup> person DP-subject determines the beginning of the movement in the verbal root ASK (noted as *I-* in the transcription), as departing from the body of the signer (the morphological realization of the [1s]  $\phi$ -feature); the end of that sign's movement is determined by the (also phonologically null) DP-object (noted by *-a* in the transcription):<sup>3</sup> the movement is then from the signer's body to a previously established point in the signing space. The same phenomenon is exemplified in (5)b for LSC (Catalan Sign

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<sup>3</sup> We keep the original notation of the authors. *-a* is used to refer to the location in the signing space where the referent of the DP-object was (previously, in the discourse) signed.

Language), where the directionality of the movement vector is reversed, as the DP-subject is a 3<sup>rd</sup> person (previously established in the signing space) and the DP-object is 1<sup>st</sup> person (thus anchored in the signer’s body): the movement then is from a point in the signing space to the signer’s body.

In a SpL, the morphological realization of the  $\phi$ -feature Agreement can be exemplified with Catalan in (6) below.<sup>4</sup> In (6), very much like in (5), the  $\phi$ -features of the phonologically null DP-subject determine the morphological realization of the lexical verb as [2s] (-s) in (6a), and as [1p] (-m) in (6b):

- (6) a. (tú) teng un llibre sobre LSC [Catalan]  
PRN2s have.2s a book about LSC  
‘you have a book about LSC’
- b. (nosaltres) tenim un llibre sobre LSC [Catalan]  
PRN1p have.1p a book about LSC  
‘we have a book about LSC’

In CLSF phenomena, on the other hand, and contrary to the cases in (5) and (6), the argumental DP does not determine the morphological shape of the CLSF in the verbal element. It is the CLSF that determines the interpretation of the DP according to the features that it carries: the CLSF assigns featural content to the argumental DP. Since this may sound counterintuitive, let us elaborate on it.<sup>5</sup> Evidence for CLSF being the *controller* comes from the fact there is no unique 1-to-1 relation between the nominal in any given DP and a particular CLSF: a referent may be compatible with more than one CLSF. This is never the case with Agreement phenomena. For instance, consider the cases in (7), next:

- (7) a. MONEY F+BE\_LOC (Benedicto 2004, (25))  
‘Coins of money are (there)’
- b. MONEY B+BE\_LOC  
‘Bills of money are (there)’

In (7), we can observe that the lexical item MONEY is compatible with both the F- and the B- classifiers. In the first case (7a), MONEY is interpreted as ‘coins of money’ since the F- CLSF confers it the class featural content of ‘small round.’ In (7b), however, MONEY is interpreted as ‘bills of money’ since the B- CLSF confers it the [class] featural content of ‘flat, 2D’ item. That is, the item MONEY does not pre-determine the specific CLSF that can be used with it. The result of this optionality of sorts is, thus, not ungrammaticality, but a difference in interpretation. If the lexical item MONEY had [class] features determining the CLSF to be used on the verb, then the result would be ungrammatical, contrary to fact.

In fact, ungrammaticality is what arises in cases of mismatch in languages where [class] is included within the range of  $\phi$ -features in Agreement domains. Let us consider the case of Swahili, below, provided by Aikhenvald citing Corbett:

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<sup>4</sup> In Catalan, the right edge of the verb shows subject Agreement (and there is no object agreement), whereas in ASL and LSC the left edge of the verb shows subject Agreement and the right edge shows object Agreement.

<sup>5</sup> See Benedicto and Brentari (2007) for a detailed discussion about alternative analyses of CLSF as other types of morphological elements.

- (8) **ki-kapu** ki-kubwa ki-moja ki-li-anguka [Swahili]  
 CL7-basket CL7-large CL7-one CL7-PAST-fall  
 ‘One large basket fell’  
 (Aikhenvald 2000:2.13  
 citing Corbett 1991:117)

In (8), the class of the N *kapu* (*ki-*) determines and forces the use of certain markers on the A, D and V; if another marker is used, the output is not just a change in interpretation as was the case in (7a,b), but complete ungrammaticality.

The same is true of other Agreement phenomena involving other types of  $\phi$ -features, such as PERSON, NUMBER or GENDER; I use Catalan again to exemplify this:

- (9) a. \* nosaltres tens un llibre sobre LSC [Catalan]  
 PRN.1P have.2s a book about LSC  
 ‘we have a book about LSC’
- b. \* vaig comprar un taula petit [Catalan]  
 AUXPST.1s buy a.MS table.FS small.MS  
 ‘we have a book about LSC’
- c.  $\checkmark$  vaig comprar una taula petita [Catalan]  
 AUXPST.1s buy a.FS table.FS small.FS  
 ‘we have a book about LSC’

In (9a), the [1P] pronoun subject should obligatorily trigger [1P] in the verb (as it does in (6b) above); in (9a), however, the verb shows [2S] and that triggers ungrammaticality, not a different interpretation, as the cases of (7) do. Along the same lines, in (9b) the noun *taula*, which carries the F (feminine) specification for the GENDER  $\phi$ -feature, requires that same specification on the D (*un*) and on the A (*petit*), just as in the [class] case in (8); lack of that specification on either the D or the A triggers, again, ungrammaticality, not a difference in interpretation.

Thus, we can conclude that if the output in a change of featural value specification is a change in interpretation (with possible humorous or other rhetorical effects), then the DP itself does not have those inherent feature values but they are obtained from somewhere else (e.g., the CLSF form). Again, if the DP were the site for those features, the result of using different CLSF would be ungrammatical, contrary to fact.

### 2.2.2. The *target* (4b)

Establishing which element is the *target* in an Agreement relation constitutes the complementary phenomenon to the determination of the *controller*. Since we have already established that the verbal CLSF is the *controller*, the *target* of the [class] feature transfer, then, is the argument DP it is linked with. This *target* does not show any specific morphology but does get interpreted according to the [class] featural value of the verbal CLSF.

In a regular Agreement relation such as those in (6) or (8), the *target* is the verb.

### 2.2.3. The *features* (4d)

In an Agreement relation, the features involved fall within the range of  $\phi$ -features: PERSON, NUMBER and GENDER (as in (5)-(6) above), and sometimes CLASS (as in (8) above).

In a verbal CLSF situation, the features involved are [ $\alpha$ -CLASS] with  $\alpha$ - indicating the range of the paradigmatic variation.

#### 2.2.4. The *domain* (4c) (for verb-argument phenomena)

In verbal Agreement, the feature transfer takes place in a Spec-Head configuration. In a verbal CLSF situation, the featural transfer also happens in the domain of a Spec-Head structural configuration.

We now turn to the details of that syntactic operation.

### 3. Formal Representation

#### 3.1 Assumptions.

In this paper, I follow the analysis in Benedicto and Brentari (2004) in conceptualizing verbal CLSF predicates as a bipartite morpho-syntactic complex: the (kinetic) movement is the morpheme corresponding to the verbal element, expressing the locative or motion eventuality;<sup>6</sup> the CLSF is part of a complex functional head above VP, in particular, a syntactic head introducing the internal/external argument. In the present paper, I reinterpret their f2/f1 functional heads as a split  $v$  head: a lower  $v^0$ , responsible for the internal argument, and a higher *voice/v\** head, responsible for the external argument, respectively (in the spirit of proposals by Hale and Kayser 1993-2002, Harley 2013, Kratzer 1996, Borer 1994, 2005).

Under this view, a CLSF is the realization of an [ $\alpha$ -class] feature bundled up together with a functional head forming a complex functional head (Benedicto 2003, 2004). [ $\alpha$ -] in [ $\alpha$ -class] refers to the paradigmatic range of classificatory values (e.g. round, long-narrow, 2D-flat, etc...). Furthermore, different types of CLSF bundle together with different types of functional heads: *whole-entity* CLSF are the morphological spell out of [ $\alpha$ -class] features attaching to the lower  $v^0$  head, thus producing unaccusative predicates; *handling* CLSF are the morphological spell out of [ $\alpha$ -class] features attaching to a complex  $v^0+v^*$  head, thus producing transitive agentive predicates; *body-part(limb)* CLSF are the morphological spell out of [ $\alpha$ -class] features attaching to the higher  $v^*$  head, thus producing unergative predicates.

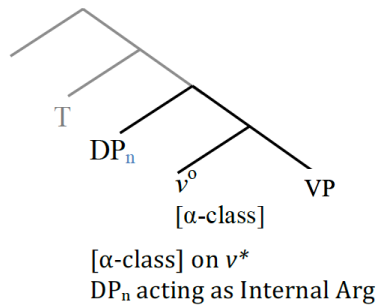
The compositional properties of CLSF are summarized in (10) below and the corresponding structural trees appear in (11):

- (10) CLSF morphemes
- [ $\alpha$ -class] features,
  - bundled up with a functional head forming a complex (functional) head;
  - $\alpha$ - values ranging along the paradigmatic range of classificatory values (e.g. round, long-narrow, 2D-flat, etc...)

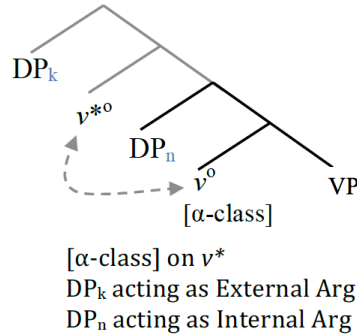
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<sup>6</sup> This may not in itself be a simple structure either. For discussion, see Benedicto, Branchini and Mantovan (2017).

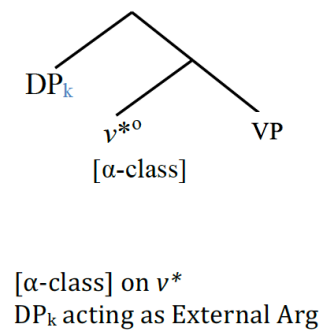
(11) a. *whole entity* =  
unaccusative



b. *handling* =  
transitive



c. *body-part/limb* =  
unergative



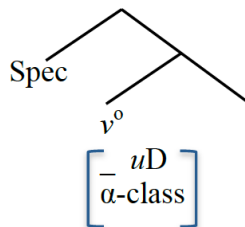
The cases in (12) exemplify the three types:

- |         |                                    |   |                       |
|---------|------------------------------------|---|-----------------------|
| (12) a. | <u>BOOK</u><br>book                | B+MOVE<br><b>2D_flat_obj<sub>w/e</sub></b> +move_vert_hor<br>'the book fell down (on its side)'   | [whole entity], unacc |
| b.      | [∅] <u>BOOK</u><br><i>pro</i> book | C+MOVE<br><b>obj_grab<sub>hdlg</sub></b> +move_vert_hor<br>'S/he put the book down (on its side)' | [handling], tr        |
| c.      | ACTOR<br>Actor                     | S+BOW<br><b>head<sub>BPCL</sub></b> +bow<br>'the actor bowed.'                                    | [body part], unerg    |

### 3.2 Proposal

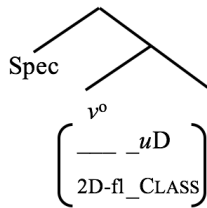
As mentioned above in (10), CLSF are the output of complex heads built up from a functional head ( $v/v^*$ ) responsible for the syntactic status of the associated DP (as internal or external argument); an  $[\alpha\text{-class}]$   $\phi$ -feature, responsible for the meaning associated to the CLSF and an (uninterpretable, unvalued) D-feature,  $_{uD}$ .<sup>7</sup> While (13) corresponds to the abstract structure of a *whole-entity* CLSF, (14) would be the specific configuration of the *w/e* B- CLSF we can see in (12a) above:

(13) CLSF complex head



<sup>7</sup> We assume a model of Grammar where UG provides the whole array of features, out of which specific languages choose those that are going to be used, as well as the bundling that is going to be used for any particular syntactic head. So, whereas in the case we are talking about  $v$  bundles together with  $uD$  and  $[\alpha\text{-class}]$  (just as T may bundle up with  $uD$  and GENDER/NUMBER in other languages), which other features  $v$  bundles up with, if any at all, will be a matter of crosslinguistic variation. That applies also to variation across SLs: while the bundling we see in (11a,b) seems quite robust across languages, (11c)'s presence seems less pervasive. Variation is expected and, as in the case of spoken languages, challenging questions arise as to which micro- and macro-parameters may be at play.

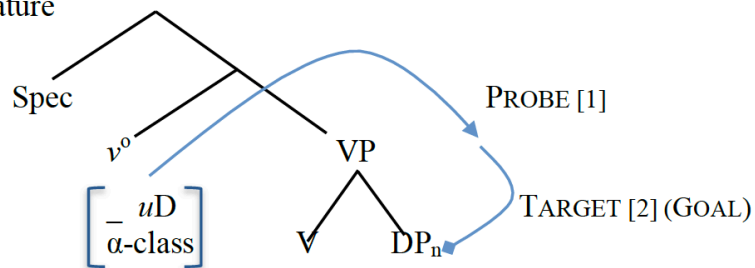
(14) *whole entity* [B-] CLSF



What are the syntactic operations that are triggered by a syntactic head such as that in (13) or (14)? Let us examine them in detail. The *uD* feature<sup>8</sup> is an uninterpretable feature that needs to be valued. Its unvalued nature will trigger a series of operations:

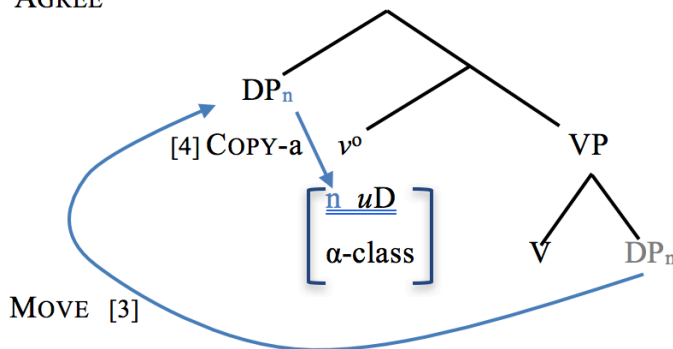
- [1] the *uD* feature acts as a PROBE to find a suitable GOAL (an element with an intrinsically valued D element) in its c-command domain whose D- values can be copied and thus value its unvalued uninterpretable D-feature (see [1] in (15) below);
- [2] the PROBE finds and TARGETS such a potential GOAL in the internal argument DP<sub>n</sub> selected by the V root ([2] IN (15)):

(15) PROBE by *uD*-feature



- [3] the *uD* PROBE AGREES with the DP<sub>n</sub> TARGET and, as part of it, ATTRACTS /MOVES it to its Spec ([3] in (16) below), where
- [4] the unvalued *\_uD* copies the D-value of the DP<sub>n</sub> now in the Spec of the *v/voice*-head, thereby getting valued (COPY-a [4] in (16) below):

(16) AGREE

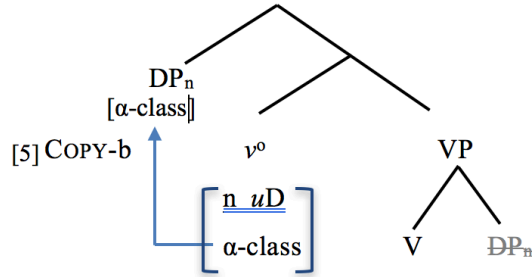


<sup>8</sup> This *\_uD* feature is the same as the one used for the EPP, the Extended Projection Principle, that ensures that there is a DP subject in Spec-TP in English. It basically requires a DP to move to that position, thus capturing the need for certain DPs to be in certain positions.



[5] as part of this AGREE operation, the [ $\alpha$ -class] features are reciprocally transferred to the DP (COPY-b), assigning the intended classifier-related interpretation to the DP:

(17) AGREE – COPY-b

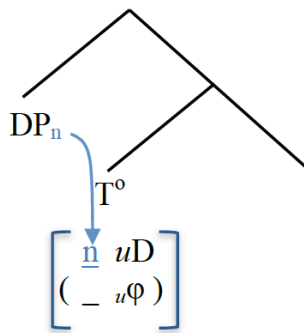


As we have seen, the operation AGREE includes two COPY operations: the forward-looking COPY-a in [4] in (16), copying the D-value  $n$  onto the  $uD$  in  $v$ ; and the backward-looking COPY-b in [5] in (17) that reciprocally copies the [ $\alpha$ -class] value in  $v$  back to the DP in its Spec.

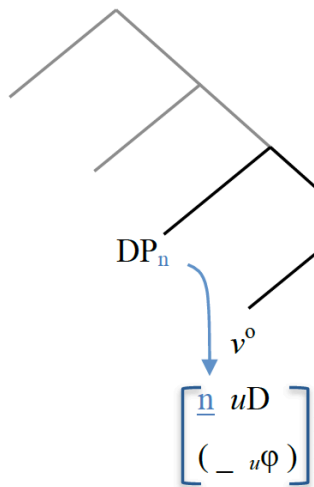
The first transfer of features (COPY-a, [4]) of the formal operation AGREE, initiated by the uninterpretable unvalued  $uD$ -feature is, we claim, common to both Agreement and CLSF phenomena: it involves the copy of the  $n$  value of the D in DP onto the unvalued slot of the  $uD$ -feature in the corresponding functional head: T (18a), that triggers subject verbal agreement;  $v/voice$  in (18b), that triggers object verbal agreement, and  $v/voice$  in (18c) associated with CLSF structures.<sup>9</sup>

(18) Agreement as AGREE / COPY-a (COPY-forward of D-value  $n$  onto host head)

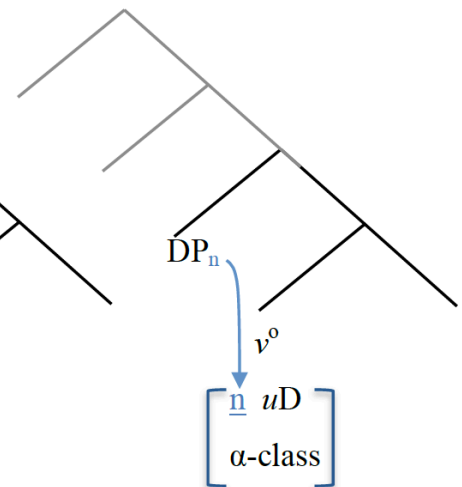
a. Subject Agreement



b. Object Agreement



c. CLSF ‘Agreement’

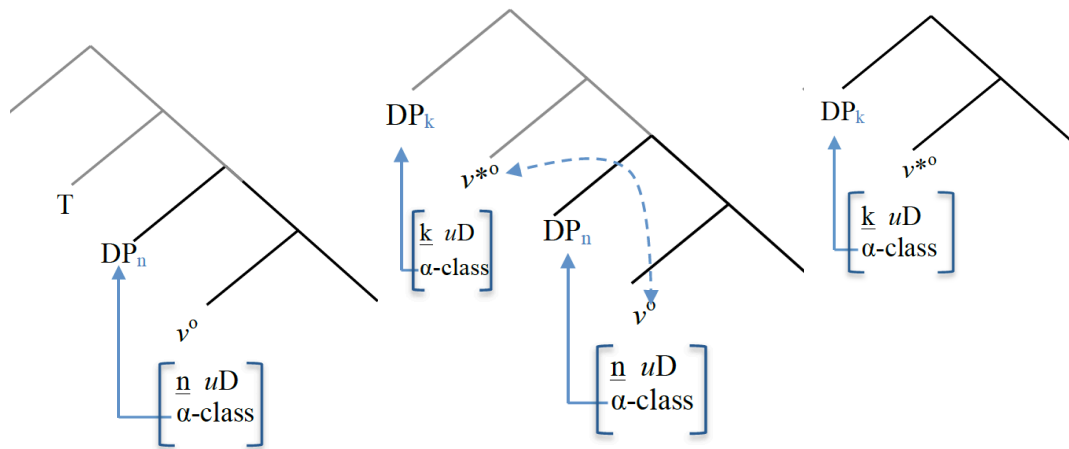


<sup>9</sup> Beyond the  $n$  value, and depending on the complexity of the D-system and the complex heads in any given language, there may be other  $u\phi$ -features (such as PERSON, GENDER, NUMBER), indicated in the trees in (18) in parenthesis, that may also be involved in this part of the operation AGREE/COPY-a. The value  $n$  may be minimally considered a referential index and may be responsible for the reference-tracking properties associated to CLSF.

The second transfer of features (COPY-b, [5]) involves a reciprocal or *backward* transfer of [ $\alpha$ -class] features from the host head  $v$  back to the DP in the Spec. This is indeed the characterizing property of CLSFs: the copy of the interpretive CLASS features onto the argumental DP. This is the reason why a single DP may be associated with more than one CLSF: by virtue of its position in the Spec, a DP may receive the *backward* or reciprocal copy of whatever CLASS feature happens to be bundled in the corresponding host head.

(19) Agreement as AGREE / COPY-b (COPY-backward of CLASS-value  $\alpha$  onto DP)

- a. *WholeEntity*-CLSF (on  $v$ : Unaccusatives)      b. *Handling*-CLSF (on  $v^*+v$ : Transitives)      c. *BodyPart/Limb*-CLSF (on  $v^*$ : Unergatives)



The COPY-b operation characteristic of CLSF in SLs is, however, not unique of these configurations, rather is found elsewhere throughout Grammar. It is found in CASE marking: of the subject DP by T (understood as a transfer of features from the head T to its Spec), or of the object DP by  $v$  (equally understood as a transfer of features from the head  $v$  to its Spec). Referential effects (in terms of definiteness and specificity) found on the object/internal arguments in Telic predicates, associated to Aspectual markings can also be understood under this perspective (see, for instance, Borer's 2005 Asp- $\alpha$ ).

So, Agreement and CLSF share the *forward* COPY-a side of AGREE, but not the *backward* or reciprocal COPY-b of AGREE. Other properties of CLSF that Agreement doesn't share are the argumental properties of CLSF (Benedicto and Brentari, 2004). These argumental properties, that associate *whole entity* CLSF with unaccusative predicates, *handling* CLSF with transitive predicates and *body part/limb* CLSF with unergative predicates, can be traced back to the contentful functional head that hosts the [ $\alpha$ -class] feature. This indirect association with a particular type of argument (mediated through the host functional head) makes them akin to *applicatives*, such as those that can be observed in certain languages:

- (20) Yagua (Payne 1997):  
TA as an applicative licensing *quiichiy* ‘knife’ as an argument.

s̩-ɨchití-*tya*-ra                      quiichiy  
 3sg-poke-TA-inan:obj              knife  
 "He poked something with the knife."

However, it is necessary to keep in mind that this association with a particular argument, as seen in (11) and (19), is a property of the *host head* and not of the [ $\alpha$ -class] feature itself.

#### 4. Modality Effects and Crosslinguistic Typology

In this section, we evaluate any possible Modality Effects that can be detected in the domain of CLSF predicates, since CLSF predicates have often been claimed to be a locus for Modality Effects (that is, a particular kind of structure whose characteristics derive directly from the visual-gestural modality of Sign Languages)<sup>10</sup>.

The main question we need to ask, first, is how can we determine the existence of Modality Effects, what kind of evidence constitutes ‘evidence’ for a Modality Effect and, in particular, what constitutes evidence in favor or against a Modality Effect in the case of CLSF predicates. The first answer we can attempt to provide is that if we find evidence of the same phenomenon in SpL’s, then there is no Modality Effect. A second, possibly more nuanced answer is that, even if the same phenomenon can be found in *a* SpL, the Modality Effect could lie in the pervasive prevalence of a given phenomenon, in this case verbal CLSF, in SLs as opposed to SpLs. We will address these two types of answers next.

To begin to address the first potential answer, verbal CLSF have been shown to exist in SpLs. Waris (Brown, 1981) is such a languages and examples are provided below:

- (21) Waris (Brown, 1981:95ff.)

- a. sa            ka-m            put-ra-ho-o  
    coconut I-dat        CLASS<sub>[round]</sub>-get-BEN-IMP  
    ‘Give me a coconut’
- b. nelus        ka-m            ninge-ra-ho-o  
    greens    I-DAT        CLASS<sub>[leaf-wrap]</sub>-get-BEN-IMP  
    ‘Give me greens (cooked in their leaf wrapper)’

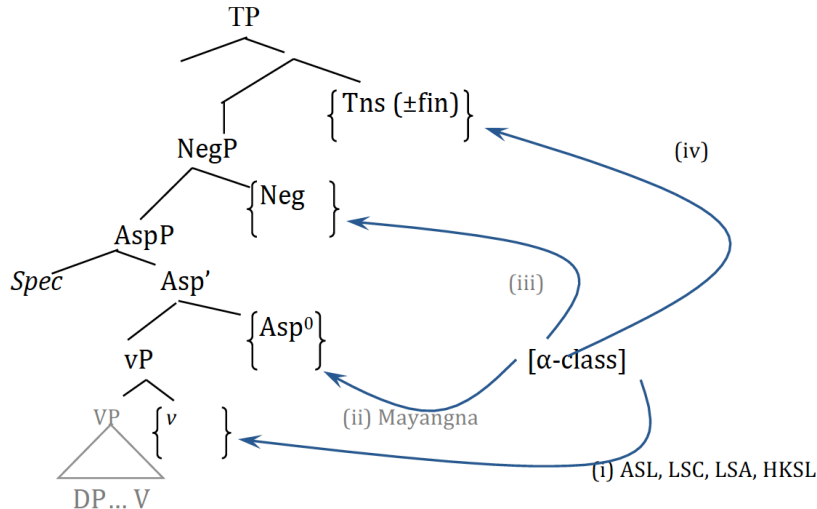
The type of verbal CLSF that Waris exhibits seems to align with *whole entity* types associated with the internal argument, but they are used in transitive ‘transfer’ verbs (e.g., *give, take, bring,...*), not in unaccusative predicates as in the ASL cases addressed above. While the existence of these elements in languages like Waris shows that verbal CLSF *per se* are not a phenomenon restricted to SLs, one might argue that the *syntactic distributional pattern* might be what is unique in CLSF in SLs.

<sup>10</sup> In particular, two aspects tend to be brought to bear in these discussions (though not exclusively): one is the use of space and the other is iconicity.

The main challenge to answer this question from a wide crosslinguistic perspective arises from the lack of studies focusing on the (morpho-)syntactic properties of these elements. Most studies talking about this type of morphemes have been done from a typological perspective and have focused more on addressing the conceptual distinctions represented in the paradigmatic variation of these items (e.g., *round vs long vs flexible*, etc...) rather than on the syntactic properties of the predicates where they appear. An additional problem is that tests to detect syntactic unaccusativity and argument alternations tend to be language particular and thus difficult to establish in less well-studied languages. So, at this point, given the amount and type of data available, we cannot establish whether or not the patterns exhibited in Waris might parallel those observed in ASL.

Can we even assume that the presence of this type of morphemes in the verbal realm will correspond to the same type of morpho-syntactic phenomenon? In other words, are all verbal CLSF created equal? Based on a review of reported cases and on primary research, Benedicto (2003, 2004) proposes a hypothesis that considers [ $\alpha$ -class] features as a cross-over, parasitic or floating feature, nominal (D-) in nature, which can, however, bundle up with a functional non-nominal head. The hypothesis is, actually, that [ $\alpha$ -class] can bundle with any (semantically contentful) functional head in the clausal inflectional spine and that the specific resulting complex heads will determine the particular syntactic behavior associated with verbal CLSF in each particular language. The tree in (22) predicts the existence of at least 4 different types of syntactic behaviors associated to verbal CLSF:

(22) Verbal CLSF as [ $\alpha$ -class] in clausal functional heads (Benedicto 2003, 2004)



According to (22), the behavior of CLSF in the SLs where it has been tested would correspond to an association of [ $\alpha$ -class] with the lower  $v$ -domain. Mayangna, a Misumalpan language, could correspond to an association of [ $\alpha$ -class] to an Aspectual head (Benedicto, 2002).<sup>11</sup>

<sup>11</sup> The well-known case of Navajo could also be a case of Aspectual attachment. However, that one is a complex issue that needs more dedicated work to be able to establish a solid conclusion.

Under these parameters, P'orhépecha (Mexico, isolated) could exhibit a syntactic pattern relevant to our question. P'orhépecha has a verbal CLSF system<sup>12</sup> that targets both the internal argument and the location argument (possibly mirroring the locative agreement of SLs); in addition, there is a transitivizer morpheme –TA– that is not related to and is independent of the CLSF morphemes. Let us consider the following examples:

- (23) a. tatr<sub>i</sub> kir<sub>a</sub>-nu<sub>k</sub>-sti                      terunukwa<sub>k</sub>-rhu                      [P'orhépecha]  
           bean<sub>i</sub>    CL:rd<sub>i</sub>-CL:sp<sub>k</sub>-PRS3S        patio<sub>k</sub>-P                                      (Benedicto 2005)  
           ‘the beans are in the patio’
- b. xí            kir<sub>a</sub>-nu-ta-skan                      tatr<sub>i</sub>-n                      terunukwa-rhu  
           PRN1s    CL:rd<sub>i</sub>-CL:sp<sub>k</sub>-TR-PST1S    bean<sub>i</sub>-ACC                      patio<sub>k</sub>-P  
           ‘I put the (grains of) beans in the patio’

In the two sentences in (23), the morpheme *kira* (associated to the locative predicate in (23a) and to the transitive predicate in (23b)) classifies the internal argument as [CL:rd], round small items like beans. Additionally, the morpheme *nu* classifies the location as [CL:h-sp], flat horizontal surface or space like a patio.

In (24) below, the same syntactic pattern arises. The morpheme *ana* (attached to the locative predicates in (24a) and to the transitive predicate in (24b)) classifies the internal argument as [CL:upr], upright long standing items like sticks. Additionally, the morpheme *nari* classifies the location as [CL:fl-vrt], flat vertical surface like a wall.

- (24) a. chkari                      ana<sub>i</sub>-nari-ku<sub>k</sub>-sti                      pared<sub>k</sub>-irhu  
           wooden-spoon    CL:upr<sub>i</sub>-CL:fl-vrt<sub>k</sub>-PRS3S        wall<sub>k</sub>-P  
           ‘the wooden spoons are upright leaning on the wall’
- b. xí            ana<sub>i</sub>-nari<sub>k</sub>-ta-skan                      chkari<sub>i</sub>-n                      pared<sub>k</sub>-irhu  
           PRN1s    CL:upr<sub>i</sub>-CL:fl-vrt<sub>k</sub>-TR-PST1S    wooden-spoon-ACC        wall<sub>k</sub>-P  
           ‘I put the wooden spoons upright leaning on the wall’

In both cases, the same syntactic pattern can be observed, basically an instance of argument alternation: in the (a) cases, the CLSF morpheme is associated with the internal argument, the ‘subject’ of the locative clause, in the (b) cases, the same CLSF is associated also with the internal argument, in this case the object of the transitive clause. This is parallel to the contrast observed in SLs between the W/E<sub>CLSF+BE\_AT</sub>, yielding unaccusative locative predicates in (25a, 26a), and the HNDL<sub>CLSF+PUT</sub>: yielding transitive predicates in (25b, 26b), the same pattern reported in (12) above:

- (25) a. BOOK                      B+MOVE  
           book                      2D\_flat obj<sub>w/e</sub>+move\_vertical-to-horizontal  
           ‘The (standing) book fell down on its side’
- b. IX                      BOOK                      C+MOVE  
           S/he                      book                      obj\_grab<sub>hdln</sub>+move\_vertical-to-horizontal  
           ‘S/he took the (standing) book and layed it down on its side’

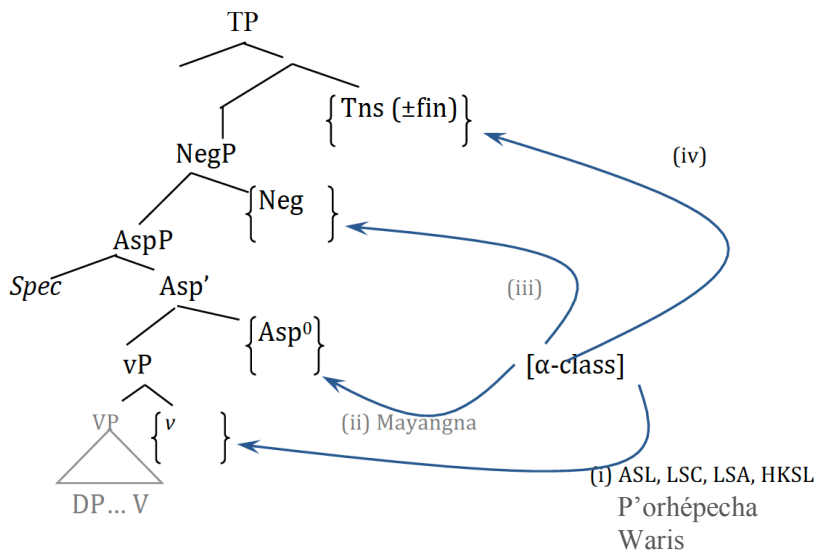
<sup>12</sup> The following report on P'orhépecha is based on my own work and data collection (Benedicto 2005). The tradition in studies about P'orhépecha may not (and in fact does not) analyze these morphemes in the same way. The data here presented is based on a distributional analysis that takes into account traditional analytical categories.

- (26) a. BOOK            B+BE\_AT  
 book                2D\_flat obj<sub>w/e</sub>+be\_at  
 ‘The book is (lying there)’
- b. IX                BOOK                C+PUT  
 S/he                book                obj\_grab<sub>hdIn</sub>+put  
 ‘S/he put/layed the book (on its side)’

P’orhépecha may, thus, be a good SpL candidate to reproduce the patterns observed in SL, at least partially. What has not been documented in P’orhépecha up to now is the syntactic pattern that associates *body part/limb* CLSF with unergative predicates.<sup>13</sup> A potential candidate to illustrate the (morpho-)syntactic behavior observed with *body part/limb* CLSF is Washo (Jacobsen, 1980; Lemieux, 2010). Washo is a language that has bipartite verbal stems, has body-part and whole entity bound initial stems and, thus, has the potential for a similar split between body-part (unergative) and whole-entity (unaccusative) CLSF predicates.<sup>14</sup> However, the problem remains: we need language-particular tests to identify the status of arguments as internal or external to determine the status of predicates as unaccusative or unergative, and that has not been done yet.

So, in summary, what we can conclude out of this brief overview of verbal CLSF in SpLs is that CLSF in SLs are situated within the range of options found crosslinguistically, both with respect to the types of arguments the CLSF are linked to, and with respect to the types of predicates the CLSF appear with. Following the Hypothesis in (22), we could see that SpL languages like Waris and P’orhépecha would pattern like SL in having [ $\alpha$ -class] associated with the syntactic head  $v$  (. As such, then there would seem to be no Modality Effect in place.

(27) SL/SpL verbal CLSF patterns: [ $\alpha$ -class] in clausal functional heads, crosslinguistically



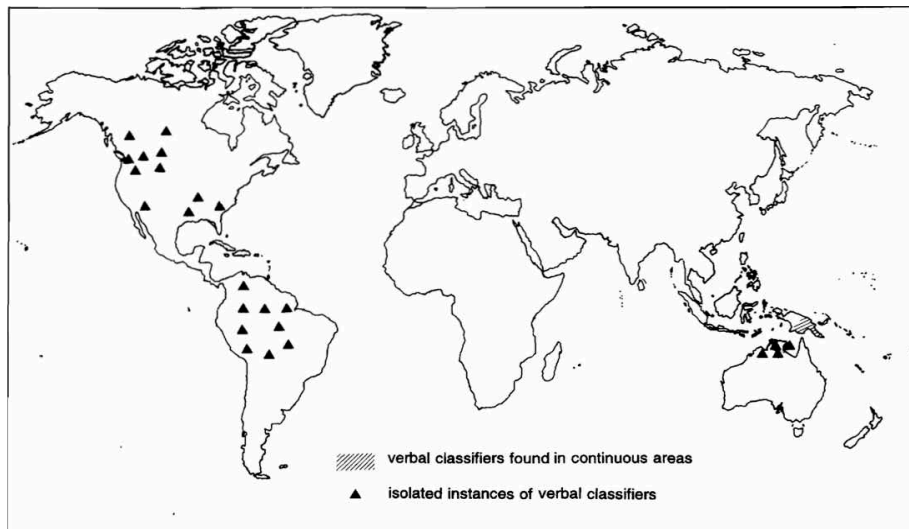
<sup>13</sup> It must be noted that this part of the syntactic patterns associated with CLSF in a variety of SLs is the one that is less common. That is, whereas the transitive/unaccusative alternation is quite pervasive across SLs, the unergative alternation is not. This should not be surprising, since there is nothing that predicts that all SLs will behave in the same way; we do expect differences to arise and those differences constitute fertile ground for crosslinguistic studies within the SL domain.

<sup>14</sup> Again, the traditional literature does not identify these items as classifiers, but rather as *stems*.

The second potential answer to the issue of CLSF as representing Modality Effects in SLs concerned the pervasiveness of such phenomenon in SLs. Whereas it is true that CLSF predicate phenomena appear in SpLs, it is also true that within the range of SpL it constitutes, at least from what we know of SpLs now, a relatively rare phenomenon and, when it appears, it does so in what we could consider geo-concentrations. Could it be that the concentration of verbal CLSG in SLs could be comparable to the geo-concentration of similar items in SpLs?

Aikhenvald (2000, Map 5) in (27) below shows the concentration of this phenomenon (at least in how it is described in that work) around certain geographic locations. Is there a reason why CLSFs in SpLs concentrate in very specific areas of the world? And is there a reason why they appear in so many isolate languages? While the present work cannot answer this question now, given the shortness of evidence we currently have, we can in fact raise the question and let it stand to be answered in the future.

(28) Distribution of verbal classifiers in the languages of the world (Aikhenvald 2000, Map 5)



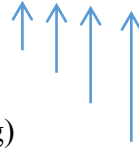
## 5. Left-over Questions

A number of questions arise out of the discussion in the previous pages, whose answers will need to be addressed in the future. In the first place, what determines which arguments of a CLSF-predicate are linked to the verb/predicate through Agreement (e.g., the ‘indirect’ object of a ditransitive of the *give*-type or the directional of a ditransitive of the *take/bring*-type) or through the CLSF (e.g., the ‘direct’ object); is it just a consequence of the syntactic configuration (that is, the head in which the [ $\alpha$ -class] ends up attached to, and the argument that ends up in its Spec)?

More interestingly, why are certain predicates *prone* to be the host of a CLSF? If verbal CLSF phenomena are the result of the bundling of [ $\alpha$ -class] with the *v* head, why don’t we see it in *all* cases where *v* appears (that is with *any* predicate)? Why do we persistently see them (both in SLs and in SpLs) in existential/locative predicates, in (in)transitive motion predicates (*go*, *move*, *bring*), in ‘transfer’ predicates (*give*)? Why, indeed, is there what looks like a Predicate Hierarchy as in (28)?

(29) *Predicate Hierarchy* for CLSF<sup>15</sup>

- i. locative, BE\_AT
- ii. transitive, PUT
- iii. unaccusative displacement, MOVE
- iv. transitive displacement, MOVE (something)



What this hierarchy conveys is that if a language has CLSF only in one type of predicates, it will be a locative/existential predicate. If a language has CLSF in transitive *put*-type predicates, then it will also have them in locative predicates (that's the P'orhépecha type). If a language has CLSF in the unaccusative *move*-type, then they also appear in the *put*-type and in locative predicates. Finally, if CLSF appear in transitive displacement predicates of the *bring/take/move*-type, then it necessarily also will have them in the other three (that's what we see in SLs). It is not clear what the underlying reason for this hierarchy<sup>16</sup> might be, but it holds crosslinguistically both in SLs and in SpLs, and it holds also of languages that allow for complex predicates that accept sub-eventive decomposition into Serial Verb Constructions.

Further research will need to address the types of predicates involved in verbal CLSF phenomena, from a crosslinguistic perspective. A related area of research that the Hypothesis in (22) also opens up is the possibility of [ $\alpha$ -class] to be bundled up with functional heads in non-verbal domains, that is, with the DP system and the consequences this would have for languages with nominal and numeral CLSF.

## 6. Conclusions

At the outset of this paper, two goals were set up: to ascertain if (verbal) CLSF phenomena were a type of Agreement, and to evaluate any potential SL/SpL Modality Effect in the domain of verbal CLSF.

With respect to the first one, we could see that though Agreement and CLSF operations happen in the same syntactic domain (Spec-Head) and triggered by the same *uD* feature in the relevant syntactic head, the actual *controller* and *target* components are different. Formally speaking, Agreement is the result of a *forward*-looking COPY operation (part of the AGREE operation triggered by *uD* in the relevant head), whereas CLSF is the result of a reciprocal *backward* COPY operation piggybacking on the same AGREE operation triggered by *uD* (cf.(16)-(17)).

As for any SL/SpL Modality Effect, we could see that CLSF in SLs are situated within the range of options found crosslinguistically, both with respect to the types of arguments the CLSF are inked to, and with respect to the types of predicates CLSF appear with; from this perspective, thus, a SL/SpL Modality Effect can be ruled out. The persistent prevalence of verbal CLSF in SLs, nevertheless, may be comparable to the *geo*-prevalence of CLSF in SpLs, which (according to Aikhenvald 2000) seem to be concentrated in languages in certain geographical areas of the world and in a high percentage of isolate languages (see (27) above).

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<sup>15</sup> There probably is a [v.] step in that hierarchy that involves unergative types of predicates, which crosslinguistically seem to be rarer.

<sup>16</sup> The data discussed in Aikhenvald (2000) lets see this hierarchy, although the topic is not directly addressed as such there.



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