

Morphosyntax aspects of ditransitive constructions with the verb DAR ‘to give’ in Portuguese Sign Language¹

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ABSTRACT: In this study we analyze some morphosyntactic aspects of the verb DAR ‘to give’ in LGP (Portuguese Sign Language) in simple declarative sentences, in particular, two properties: (i) the position of the arguments regarding the verb and (ii) the agreement of the verb with the internal arguments. We defend that the basic word order in ditransitive constructions is S V DO IO, although other syntactic processes, such as simple and double topicalization may, apparently, call into question the existence of that basic pattern.

KEY-WORDS: Portuguese Sign Language, ditransitive constructions, morphosyntax, word order, agreement.

RESUMO: Neste estudo analisamos alguns aspetos morfossintáticos do verbo DAR na LGP (Língua Gestual Portuguesa) em frases simples declarativas, em particular: (i) a posição dos argumentos em relação ao verbo e (ii) a concordância do verbo com os argumentos internos. Defendemos que a ordem básica de palavras nas construções ditransitivas é S V OD IO, embora outros processos, tal como a topicalização simples ou dupla, possam, aparentemente,

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pôr em questão a existência desse padrão básico.

PALAVRAS-CHAVE: Língua Gestual Portuguesa, construções ditransitivas, morfossintaxe, ordem de palavras, concordância.

1. Introduction

Portuguese Sign Language (LGP) is a natural language, in which, as in sign languages in general, system units (chereme, gesture and sentence) are combined by an articulation of linear and simultaneous processes. This is due to the manual-motor and the visual-spatial modulation, so characteristic of sign languages. In fact, cheremes are simultaneously articulated in the majority of signs; this is one of the most distinguishable features of sign languages compared to spoken languages. Signs such as LOVE, PERSON and HAPPY² have a simultaneous representation in LGP (vertical time-space sequence, cf. Hulst, 1993) and a linear representation in oral languages (horizontal time sequence).

Minimal units (cheremes) and their possible combinations are produced in the space in front of the signer, with or without on-body signing. They are produced by the hands and arms, which are two of the main sign language articulators.

Regarding syntax, grammatical relations established among phrases and sentence elements are, in most cases, carried out in a linear way. In fact, it is possible to speak of word order or of constituent order; however, those relations can also be simultaneous in certain sentences (cf., a. o., Choupina, 2015; Bettencourt, 2015). An example of simultaneity in LGP is the representation of verbal negation: in the expression NÃO CONCORDAR ‘not to agree’ the negation is represented by a non-manual component (NMC) (*headshake*), at the same time as the verb CONCORDAR ‘to agree’. NMC is one of the components of signs and of utterances and has very diverse functions: speech auxiliaries (like in spoken languages), expression of degree, discourse markers, referential function or negation.

In other sign languages (SL), verifying the articulation of linearity and simultaneity processes at a syntactic level is also possible. An example can

² Capital letters mark gloss of LGP gestures.

be found in LIBRAS (Quadros & Karnopp, 2004), according to which in a sentence such as *A menina anda debaixo da árvore* 'The girl walks under the tree', signs regarding the verb ANDAR can be produced simultaneously to ÁRVORE by employing the non-dominant hand to represent ÁRVORE and the dominant hand to represent the situation "girl walking under the tree" (by making use of classifier ANDAR-human being).

This simultaneity is enabled by the tridimensionality of the syntactic space, which is where speech is produced in SL, and by the productive use of non-manual markings (Maclaughlin *et al.*, 2000).

Several papers on SL have noted that plain verbs favor an SVO order, while agreement verbs favor an SOV order (for HZ)³ Milkoviá *et al.*, 2006, for LIBRAS Quadros, 1999, for instance). However, it appears that this pattern might be altered considering several morphosyntactic, pragmatic or discursive mechanisms, such as the use of classifiers, which enable simultaneous constructions (Leeson & Saeed, 2012: 257), thus permitting several syntactic movements.

While there are a few morphosyntactic studies concerning Portuguese Sign Language (LGP) (Amaral *et al.*, 1994; Delgado-Martins, 1996; Graça *et al.*, 1999; Faria *et al.*, 2001; Bettencourt, 2015), the relationship between order, argument selection and agreement remains rather unexplored. That is why this paper seeks to analyze certain morphosyntactic aspects of the verb DAR 'to give' in simple declarative sentences, collected from a *corpus* for Fernanda Bettencourt's masters dissertation on word order in LGP, presented to the Faculty of Arts and Humanities of the University of Porto in 2015. In this analysis, we will observe two properties: (i) argument position regarding the verb, and (ii) the verb's agreement with its arguments; the goal is to verify to which extent these properties are related.

As such, this paper is organized as follows: in the Introduction, we present some of the fundamental structure-defining properties and the functioning of sign languages; in 2., we will consider the methodology behind the construction of the *corpus*; in 3., there will be an initial analysis to the data; in 4., we suggest a syntactic analysis, bearing in mind recent developments of SL syntax; finally, in 5. we will present the conclusions

³ Croatian Sign Language (HZJ).

drawn from this exploratory study; the bibliography and the appendixes will conclude this paper.

2. Methodology

2.1. Informants⁴

In her study on word order in LGP, Bettencourt (2015) used two types of stimuli for the elicitation of verbal production in LGP: (i) non-verbal visual stimuli and (ii) visual verbal stimuli. The former were used in two different tasks: on the first, regarding production and production comprehension, images with reversible situations were used; on the second, regarding the production alone, images with non-reversible situations were used. The latter, made from written sentences in Portuguese, were part of the second experience as a way to elicit production in LGP. Since the goal of the study was just to distinguish word/constituent order in sentences with direct transitive, one-argument verbs, (verbal and non-verbal) stimuli enabling sentences with ditransitives – analyzed herein - were, then, mere distractions.

In Bettencourt (2015), six Deaf informants took part in this study – two youngsters with Deaf parents (A.1 and A.2, 21 and 19 years-old, respectively); two youngsters with hearing parents (B.1 and B.2, both with 24 years of age) and two adults with hearing parents who teach LGP (C.1 and C.2, 42 and 36 years-old, respectively). All were males, except for one. LGP acquisition by the informants with hearing parents happened between the ages of 4 and 7, through the contact with their peers in school and/or in foster centers with boarding facilities, in an informal context. All use LGP as the first language (L1)⁵ and Portuguese as second language (L2). For comparing purposes, two hearing female informants also took part in the study. Both are LGP interpreters who have learnt LGP at the ages of 17/18 and with 9/10 years of professional experience, respectively, in similar contexts (basic, middle and high school, university education and conference attending). None have any Deaf relatives; however, both have contact with the Deaf community outside their work context.

⁴ The four subsequent paragraphs were extracted, with minor changes, from Bettencourt (2015).

⁵ For 2 signers, LGP was acquired and developed in a formal LGP teaching context on primary school; for another 2, that acquisition happened during high school; for another 2, acquisition only came at an adult age.

In order to minimize possible sociolinguistic constraints, Bettencourt (2015) attempted to control a few factors while selecting the informants: their age, education, the region where they acquired LGP and in which contexts it is used. Therefore, all informants learnt LGP in the North of Portugal (Porto metropolitan area), where they live, study or work. For the production and comprehension task, pairs were formed between informants with close age, close age of LGP acquisition, contexts in which they use LGP, as well as education. Despite this selection based on sociolinguistic criteria, we found differences between informants: generations of deaf people in the family; LGP fluency levels in their families; attendance at schools where LGP was valued – or not – alongside with deaf education; interest from hearing parents in learning LGP to better communicate with their children; a smaller or bigger influence from Portuguese.

From the Deaf informants, both youngsters with Deaf parents (pair A) claimed to have a severe hearing loss, with no apparent capacity to distinguish speech sounds, even though informant A.1 uses a hearing aid. All informants with hearing parents (pairs B and C) have claimed to have profound hearing loss, with no access to speech sounds whatsoever; none of these four informants uses hearing aids or cochlear implants. While none have ever had access to the sounds of spoken language, all have attended school and, therefore, all have learnt written Portuguese (some more successfully than others); there is, however, no way to control the impact that Portuguese grammar may have had in each informants' LGP grammar.

2.2. Instruments

The *corpus*, which included production and comprehension data in LGP (simple declarative sentences), was collected from two data collection strategies: **strategy 1** included two tasks – one of forced production and comprehension and the other regarding only production; both began with non-verbal visual⁶ stimuli for production and comprehension elicitation in LGP (cf. Appendixes 1 and 2); **strategy 2** regarded forced production from verbal stimuli (written sentences in Portuguese). The first strategy was

⁶ We thank Luís Pedrosa for his kindness and patience drawing the stimulus images in this small study on ditransitive verbs in LGP.

adapted from the study by Volterra *et al* (1984) and later on replicated, with minor adaptations, by authors such as Kimmelman (2011) and Sze (2003); the second was inspired by the study of Cecchetto *et al* (2006).

The images that could enable ditransitive sentences, used in this exploratory work, were distractive to the central focus of Bettencourt's (2015) dissertation. Therefore, it wasn't possible for us to create an autonomous experiment for the comprehension and the production of sentences with ditransitive verbs. The diversity of constructions with the verb DAR 'to give' that we could gather and analyze gave us important data on order, on agreement and on the very structure of LGP and its syntactic mechanisms. However, we must highlight that this is an exploratory study, given the insufficient data and the fact that it is not a result of our own experiment.

2.3. Procedures

All productions were videotaped and transcribed into gloss according to the Sign Language transcription protocol also used by Bettencourt (2015).

Data collection strategy 1 – Task 1 – Elicited production and comprehension from non-verbal visual stimuli

Informants were paired up. One element of each pair would produce an utterance in LGP, illustrating the situation observed in the stimulus image (cf. illustrations 1a and b), while the other would select the image (out of two possible images shown in reversible situation) which best represented the situation comprehended from the LGP production (that the signer now visualized in the video). The researcher recorded the answer –the selection of one of the images.

Data collection strategy 1 – Task 2 – Elicited production from non-verbal visual stimuli

All informants produced an utterance in LGP, illustrating the situation observed on the non-verbal visual stimuli (cf. illustration 2). All productions were videotaped.

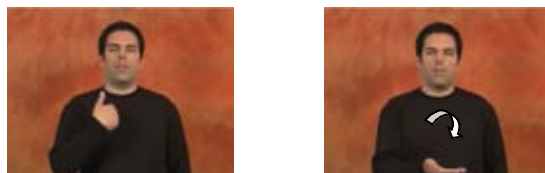
Data collection strategy 2– Elicited production from verbal visual stimulus

All informants produced an utterance in LGP, illustrating/translating the situation observed on the verbal visual stimulus. All productions were videotaped. The verbal visual stimulus for the verb DAR 'to give' was the sentence: *O pai deu o livro à mãe* (*Father gave the book to mother*).

3. Data presentation and first morphosyntactic analysis

3.1. Types of agreement between verb and arguments

Twenty productions in LGP with the verb DAR 'to give' were gathered. According to Padden's typology (1988/1990), the verb DAR 'to give' is considered an agreement verb, since it is possible to agree with its syntactic arguments. Therefore, the verb can be represented with movement direction and orientation of a specific hand to agree with IO, and it can also incorporate a Classifier (CL) (handshape) to agree with DO. However, as is the case with several SL, in LGP there is a neutral sign for DAR 'to give', which can be used with no agreement with internal arguments (cf. illustration 1).



ILUSTRATION 1: Verb DAR 'to give' in neutral form
 (image taken from Spread the sign on 23/10/2015)

We analyzed twenty productions, of which the following forms of representation were found: the verb DAR 'to give' was represented in neutral form, thus with no agreement whatsoever, in ten sentences (50%); agreement with DO was found in seven occasions (35%); while only three sentences agreed with IO. No productions included an agreement with both objects (see Table 1). The CL used represented the shape of the objects (flower, box and book) (cf. non-verbal visual stimuli, appendixes 1 and 2).

Verb	Neutral form of representation	Agreement with DO (CL)	Agreement with IO (M)	Agreement with both DO (CL) and IO (M)	Total
DAR ('to give')	10 (50%)	7 (35%)	3 (15%)	0 (0%)	20 (100%)

TABLE1: Number of occurrences of the verb DAR 'to give' according to type of agreement

3.2. Argument position in relation to the verb

3.2.1. Subject position

Of the 20 sentences, 17 (85% of productions) have the Subject in initial position. Of the three sentences where the Subject isn't in the left position, two have a DO S V IO structure, without CL (cf. examples (1) and (2)) and one presents a narrative-discursive strategy to be addressed later on.

- (1) LIVRO PAI DAR MÃE (LGP, Ex. II, B.2).
 book father give mother
 'the father gives the book to mother'
- (2) LIVRO PAI DAR MÃE (LGP, Ex. II, C.2)
 book father give mother
 'the father gives the book to mother'
- (3) DOIS NAMORADOS / RAPAZ DAR NAMORADA DELE (LGP, Ex. I, T I, A.2)
 a couple / boy give girlfriend his

Despite these three occurrences, it looks indisputable that the Subject position is, prototypically, before V and in the first position of the sentence.

3.2.2. DO and IO positions

In the 20 sentences, the following order patterns were found:

(i) Twelve sentences (60%) in which IO is represented by an NP⁷ at the end of the sentence, regardless of DO being before or after V. We present Table 2 to illustrate the distribution of different orders and positions of DO and IO, in each data collection strategy.

	S V OD OI	S OD V OI	OD S V OI	S OD V _{CL} OI	S V _{CL} OD OI	S V _{CL} OI	Total
Str. I – task 1		1			1		2
Str. I – task 2		2		1		3	6

⁷ LGP, like other SL, has no articles, but it can represent whether a certain expression is definite or indefinite by pointing to a specific locus within the syntactic space (pointing to the referents' loci; for this reason we use a NP, as is traditional in syntactic studies about these SL.

Str. II	1		2		1		4
Total	1	3	2	1	2	3	12 (60%)

TABLE 2: Distribution of orders and positions of
 DO and IO in each data collection strategy

In the production of these LGP signers, IO preferably appears in final position.

(ii) Three sentences (15%) in which IO appears in pre-verbal position. However, a verbal clitic recovers IO, due to the movement direction into the space of the Recipient.

- (4) MENINA_a MENINO_b FLOR_a DAR_b (Ex. I, T1, B.1)
 girl_a boy_b flower_a give_b
 'the boy gives the flower to the girl'

In the comprehension task, production (4) did not present any difficulty.

- (5) MENINO_a MENINA_b DAR_b PRESENTE (Ex. I, T 2 B.1)
 boy_a girl_b give_b gift
 'the boy gives the gift to the girl'
- (6) PAI_a MÃE_b / PAI_a DAR_b PRESENTE LIVRO (Ex. II B.1)
 father_a mother_b / father_a give_b gift book
 'the father gives the book/the gift to mother'

Production (6) presents discursive-pragmatic issues that we will discuss later on.

(iii) Three sentences (15%) in which all arguments occur in pre-verbal position, with no clitic / verb movement direction (S DO IO V).

- (7) RAPAZ PRESENTE MULHER DAR (Ex. I, T 2, D.1)
 boy gift woman give
 'the boy gives the gift to the woman'

- (8) PAI LIVRO MÃE DAR (Ex. II, D.1)
father book mother give
'the father gives the book to mother'
- (9) PAI LIVRO MÃE DAR_{CL FLATTENED OBJECT} (Ex. II, D.2)
father book mother give_{CL FLATTENED OBJECT}
'the father gives the book to mother'

One must highlight that in glossed production (9) the verb incorporates a mark of the previously represented DO in NP form, by using a CL typical of flattened objects (BOOK). On the other hand, in productions (7) and (8) the verb is represented in neutral form. The three productions were represented by the LGP interpreters.

(iv) One sentence (5%) in which IO is in post-verbal position but before DO, with no use of CL.

- (10) PAI DAR MÃE LIVRO (Ex. II, C.1)
father give mother book
'the father gives the book to mother'

(v) One sentence (5%) in which IO was not represented and DO is before V.

- (11) MULHER FLOR DAR (Ex. I, T1, D.1)
woman flower give
'the woman gives the flower'

The verb DAR 'to give' is in neutral form in (11) and, in the comprehension task, the signer showed no difficulty in understanding the production.

3.3. First morphosyntactic analysis

We have presented 20 ditransitive productions with the V DAR 'to give' in LGP. It is now time to make an initial analysis with the goal of relating word order, the verb's argument structure, as well as agreement forms or mechanisms.

Given illustration 1a (cf. Appendix 1), which is a non-verbal visual stimulus, a young signer produced the utterance (12). Given the visual

verbal stimulus *O pai deu o livro à mãe* 'the father gave the book to mother', two informants represented glossed productions (13) and (14).

- (12) HOMEM DAR_{CL} FLOR MULHER (Ex.I, T1, A.1)
man give_{CL} flower woman
'the man gives the flower to the woman'
- (13) PAI DAR LIVRO MÃE (EX. II, A.1,)
father give book mother
'the father gives the book to mother'
- (14) PAI DAR_{CL FLATTENED_OBJECT} LIVRO MÃE (Ex. II, A.2)
father give_{CL FLATTENED_OBJECT} book mother
'the father gives the book to mother'

In all three examples the order is S V DO IO. The verb (V) occurs in the same position, after the Subject (S) and before the Direct Object (DO); the Indirect Object (IO) is represented in NP form in the final position of the sentence. This might suggest a non-marked S V DO IO order, the same as in many oral languages (cf. Costa, 2009, for Portuguese) and sign languages (Maclaughlin *et al.*, 2000, Meir, 2002, a.o.). However, (13) is the only example where the verb is represented in its neutral form and with no marks of agreement. Thus, it appears that there are few differences regarding order and the type of verb when productions elicited by a non-verbal stimulus ((12)) are compared to those elicited by a verbal stimulus ((13) and (14)).

In (12) and (14) the verb agrees with the object by handshape. This is due to a shape classifier (CL), which occurs in iconic agreement with FLOR 'flower' (12) and with LIVRO 'book' (14), followed by an NP with the syntactic function of DO. It appears to us that (12) and (14) do not put the S V DO IO order into question, they simply express DO in a "redundant" way, because, in both sentences, DO is represented simultaneously by verbal CL and by a post-verbal NP.

This agreement of V with DO and the co-occurrence, within the same sentence, of CL and of DO in NP form, have been verified in other sentences of the *corpus* as well, but with DO in pre-verbal position, as in examples (15) and (16).

- (15) MENINO FLOR DAR_{CL} MENINA (Ex. I, T1, C.1)
boy flower give_{CL} girl
'the boy gives the flower to the girl'
- (16) MENINO PRESENTE DAR_{CL} MENINA (Ex. II, B.2)
boy gift give_{CL} girl
'the boy gives the gift to the girl'

Therefore, the NP⁸ with the syntactic function of DO seems to be able to occupy both pre-verbal and post-verbal positions, regardless of whether or not it is recovered by CL. For this reason, these two examples raise an interesting issue: how can V agree with DO or how can it incorporate DO, if DO is in a pre-verbal position? We will address this later.

There are other productions particularly contributive to this question: in (17), V occurs in final position and incorporates CL; it agrees with DO, which is expressed in NP form after S (PAI 'father') and before IO (MÃE, 'mother'); in (18), V – which does not occupy the final position – and CL are totally simultaneous, whilst there is no linguistic representation of DO in NP form (one could actually suggest a null DO). In this last example, it isn't possible to draw any conclusions regarding the position of DO in relation to V, because of their simultaneous representation, as Leeson & Saeed (2012: 257) have stated for similar examples in ASL. Then, another question arises: how did V agree with DO if the latter is linguistically null? When compared, productions (12) and (18) show that there might be several syntactic operations: V in neutral form followed by a linguistic representation of DO in NP form ((13)); V with CL incorporation, followed or preceded by a linguistic representation of DO in NP form ((14) to (17)); and finally, ellipsis of DO in NP form and a mere representation of V + CL ((18)).

- (17) PAI LIVRO MÃE DAR_{CL FLATTENED OBJECT} (Ex. II, D.2)
father book mother give_{CL FLATTENED OBJECT}
'the father gives the book to mother'

⁸ DO may not be represented by a NP independent of V, for instance, when it is only expressed in the verbal CL or when it is simply deleted.

- (18) HOMEM DAR_{CL: BOXED OBJECT} MENINA (Ex. I, T2, A.1)
man give_{CL: BOXED OBJECT} girl
'the man gives the box to the girl'

Knowing that there is a lexical form for the verb DAR 'to give', in its neutral form (cf. gestures on illustration 1), we believe that N has been incorporated into V and that both have an amalgamated representation: manual configuration (MC) moves iconically from DO; on the other hand, movement and point of articulation are parameters for representing V.

In most sentences from the *corpus* (85%), the syntactic subject occupies the position of non-marked topic or sentence topic, i.e., it is both the syntactic subject and the topic about which a comment is made. However, we have found two constructions produced from the verbal stimulus, with DO before S, i.e., with DO in the left position of the sentence (cf. (19) and (20)):

- (19) LIVRO PAI DAR MÃE (Ex. II, B.2)
book father give mother
'the father gives the book to mother'
- (20) LIVRO PAI DAR MÃE (Ex. II, C.2)
book father give mother
'the father gives the book to mother'

In (19) and (20), DO occurs in initial position, followed by the remaining structure – S V IO. The verb is presented in neutral form (without agreement or incorporation). At the surface, these productions could be explained by a topicalization of DO as Theme, as in oral languages (OL) (cf. Duarte, 1987; 2013). In the topicalization, the topic respects the selection properties of the verb. Furthermore, its corresponding position on the comment is a gap, just as described for Portuguese by Duarte (2013: 416-417) for examples such as (21); and for LIBRAS by Quadros & Karnopp (2004: 146-156) for examples such as (22).

- (21) a) Piscina, não sabia que tinha_. (CRPC, PF 1183; example 54a)
 'Pool, I didn't know I had'.
 b) Nesse político, não voto_. (CRPC, PF 1183; example 54b)
 'In that politician, I don't vote'.
- (22) a) <[FUTEBOL]_i>t<JOÃO GOSTAR t_i> (Quadros & Karnopp, 2004: 147)
 'Football, John likes.'
 b) <[FRANÇA]_i>t<EU VOU t_i> (Quadros & Karnopp, 2004: 149)
 'To France, I go'.

According to Duarte (2013), topicalized constructions such as these, with marked topics respecting the property selection of verbs and which are not recovered in the comment, are different from other constructions, which include a clitic movement to the left or the non-canonical/wild topicalization. These constructions happen because there are various restrictions to the comment, with at least one of the following characteristics (Duarte, 2013: 420): (i) occurrence of a lexical item to the right of the silent position that the topicalized constituent is associated to; (ii) comment in negative form; (iii) occurrence of aspectual or focus adverbs (for instance, *já* 'already' or *só* 'just', respectively) on the comment; (iv) production of one of the comment's constituents produced with a stress typical of focus.

Bearing all of this in mind, we have verified that examples (19) and (20) fulfill, in the very least, the first characteristic: admitting that S V O is LGP's basic order, in these examples IO is represented at the end of the sentence and after DO's basic position.

However, a closer look to the productions made us conclude that there is a complex non-manual marker (NMM), represented simultaneously with DO, which is moved to the left. This is typical of SL (cf. Bahan, 1996, regarding ASL) and can be found in (19), repeated in (23) – with a NMM. Beside this mark on topicalized DO, it appears that IO (MÃE 'mother'), which is an internal element to the comment in its alleged basic position, can be considered similar to the stress typical of focus in OL.

- (23) $\overline{\text{LIVRO}}_{ic/ls}$ PAI $\overline{\text{DAR}}_{ic}$ MÃE (Ex. II, B.2)
 book father give mother
 'the father gives the book to mother'

According to Quadros & Karnopp (2004), for LIBRAS, the non-manual mark may be identified as a topic mark, which sets the topicalization borders so that it cannot spread continuous and uninterrupted throughout the sentence. Example (23) is a perfect illustration of what is defended for LIBRAS: that topic marking is independent from IO marking (focus).

If one accepts that NME allows DO to move to topic position (as marked topic), one may keep defending that the basic constituent order in LGP, even with ditransitives, is SVO, meaning S V DO IO.

Nevertheless, other sentences are more complex, namely those where there seems to be double movement and topic recovery on the comment, due to a directional movement by the verb. These are the circumstances found in (24).

- (24) MENINO_a MENINA_b DAR_b PRESENTE (Ex. 1, T2, B.1)
boy_a girl_b give_a gift_b
'the boy gives the gift to the girl'

If one accepts for LGP what Quadros & Karnopp (2004) wrote for LIBRAS, (24) has a double topic, where S and IO were both moved to a left position and both are associated to argument positions of the verb DAR 'to give'. What's new with this example is within the verbal agreement: the verb's directional movement comes from a locus associated with S and ends in the locus meant for IO.

In the *corpus* there are constructions with what seems to be two movements (or double topic), a simultaneous representation of the moved items and also verbal agreement, in number and person, with the topicalized elements. In two of the sentences, there is evidence of agreement with S through the initial locus of the verb's movement. This enables agreement in number and person as defended by Maclaughlin *et al.* (2000) for ditransitive verbs in ASL. However, in none of the sentences is this agreement of S independent of the agreement with IO, typically expressed by the end of verb's movement. This means that every time the verb DAR 'to give' is executed with agreement movement (thus, with directional movement), it moves from the position of syntactic subject / Agent to the position of IO/ Recipient. Another interesting fact can be verified in (25) and (26): agreement with both S and IO by means of a directional trajectory between referential

loci co-occurs with the linguistic expression of these arguments, which are precisely in initial position.

- (25) MENINA_a MENINO_b MENINA_a FLOR_a DAR_{CLb} (Ex. I, T1, B.1)
 girl_a boy_b girl_a flower_a give_{CLb}
 ‘the boy gives the flower to the girl’

- (26) PAI_a MÃE_b / PAI_a _aDAR_b PRESENTE LIVRO (Ex. II, B.1)
 father_a mother_b / father_a give_b gift book
 ‘the father gives the book/the gift to mother’

There is no doubt that, in these examples, S and IO are expressed both on the comment (either by redoubled NP or by means of a verbal clitic) and on the topic, in the left periphery of the sentence: in (25), the order appears to be S IO S DO V; in (26) it is S OI / S V DO. A possible explanation for these structures is to accept that in LGP it is possible to have double topicalization too. Double topicalization has been studied in OL by Rizzi (1997) for Italian and Duarte (1987) for European Portuguese. Nonetheless, (25) and (26) are different constructions: whereas in (25) there is a continuous representation of the whole sentence, in (26) there is a discursive pause between the two initial NP and the remainder of the sentence.

Henceforth, we shall consider that the first sentence is a result of a double movement and of the representation of copies of the moved items on their basic position on the comment, as illustrated in (27) and as defended for LIBRAS (Quadros & Karnopp, 2004) for sentences such as (28).

- (27) <[MENINA]_i [MENINO]_j> <MENINA_i FLOR_{t_i} DAR_{CL} t_j>
 <[girl]_i [boy]_j> <girl_i flower_{t_i} give_{CL} t_j>
 ‘the boy gives the flower to the girl’

- (28) <FUTEBOL>_{top} JOÃO GOSTAR FUTEBOL (Quadros & Karnopp, 2004: 151)
 <football>_{top} John like football
 ‘Football, John likes.’

Note, however, that the constituent order in (25) is different from (26), since in (25) V is in final position, while in (26) it is before DO. Can the order pattern presented in (25) justify the suggestion that LGP is an SOV language? We don't think so, despite the fact that many LGP teachers defend that idea or that many interpreters and teachers replicate such order in their productions. Many authors have argued that the existence of verbal agreement enables DO to be raised to a higher position in the structure: note that CL agrees with DO and is represented at the same time as V. This simultaneity is grounds for some researchers to believe that SLs have constituent orders and not word orders (Leeson & Saeed, 2012). Such idea would also apply to OL due to the existence of classifiers (CL) and clitics. Nevertheless, we will maintain the "word order" designation, as it is well established in literature.

Constructions such as (26) have been analyzed in literature, not as a result of topicalization processes, but as an application of a more general process – common to several SL – of referent introduction in the syntactic space, that is, a narrative-discursive strategy (cf. Padden, 1990, and Bahan, 2000, for ASL). What causes this analysis is the existence of a pause between speech elements, as in (26), right after PAI 'father' and MÃE 'mother'. Therefore, we believe (26) is divided in two: in the first part, there is an initial referential expression - more accurately, there is a presentation of two referents -; in the second part, the event itself is presented and only S / Agent argument is represented again, since IO / Recipient is only recovered by agreeing with the verb's directional movement towards the spatial index created on the first part. Padden (1990) has analyzed similar structures in ASL. With the argument that null subject languages enable the recovery of previously introduced referents, Lillo-Martin (1986) and Padden (1990) show that, even in these sentences, the structure is SVO, since it is the second part of the structure that expresses the core event. As morphosyntactic marks of agreement with S and IO, the initial and end movement loci of the verb DAR 'to give' resemble verbal affixes. This is a specific grammatical process of agreement verbs (Padden, 1988) – similar to clitic-related processes in OL.

Other examples also deserve our attention, such as (29).

- (29) DOIS NAMORADOS/RAPAZ DAR NAMORADA DELE (Ex. II, A.2)
 a couple / boy give girlfriend his

Due to the existence of a pause between the first NP and the remaining elements of the sentence, one could integrate (29) into the strategy of referent presentation; however, it looks to us like an example of a topic which is not recovered in the comment. Therefore, DOIS NAMORADOS ‘a couple’ is clearly an external topic, located outside the comment and establishing a semantic relation with S and IO. In this sentence, DO was not represented by the signer, nor by NP nor by CL. We believe the signer may have forgotten it.

Another interesting example from the *corpus* is the following:

- (30) MENINO DAR PRESENTE DAR_{CL} MENINA (Ex. I, T2, C.1)
 boy give gift give_{cl} girl
 ‘the boy gives the gift to the girl’

In this construction, there is a double representation of the verb. The order, thus, is S V DO V_{CL} IO. On its first occurrence, V is presented in neutral form and on the second it agrees with DO, due to the use of CL. According to what we have written before, the agreement verb seems to enable OD to move to a higher level in the structure. We will accept the idea that this is a representation of a verbal copy, motivated by the agreement with DO and enabled by focus marking. In SL, focus involves phrase nuclei, due to projected copies of the element that is intended to highlight the information with a sharp phonological interpretation. In LIBRAS, these constructions are analyzed as constructions with focus (cf. 31), where the “surviving doubled element occupies the final position” (Quadros & Karnopp, 2004: 170, our translation).

- (31) a) EU PERDER LIVRO <PERDER> (Quadros & Karnopp, 2004: 172)
 I lose book <lose>
 ‘I lost the book’
 b) [_{FP} [EU PERDER LIVRO]_i <[_FPERDER] [_{IP}t_i] > (Quadros & Karnopp, 2004: 181)
 [_{FP} [I lose-book]_i <[_Flose] [_{IP}t_i] >]

The [+ focus] mark enables the disappearance of the first element in the double construction, as the c-command relation established between the nucleus of FOCUS category and IP allows the reconstruction of the structure for interpretation, as in (31 b) (Quadros & Karnopp, 2004: 180).

Finally, another example found in the *corpus* is worth analyzing.

- (32) PAI DAR MÃE LIVRO (Ex. II, C.1)
father give mother book
'the father gives the book to mother'

(32) is an example of the so-called Double Object Construction in OL, i.e., a construction where IO is immediately after the verb, followed by DO. In OL, such a construction has been considered the result of the incorporation of a null preposition on V, which enables a double assignment of objective case (Baker, 1988, Gonçalves, 1990 for Mozambique Portuguese). There is not enough data to assume that LGP also enables Double Object Construction, as it is a language without linguistic representation of prepositions, regardless of IO position.

4. Possible syntactic analysis

We will embrace the idea that SL present the same kind of syntax proposed for OL, based on common principles of binarism and hierarchy and where the syntactic operations are *merge*, *agree* and *move*.

VP is the lowest lexical category in the structure, but some functional categories are justified. Regarding the argument structure of VP, we will begin with the idea of a "shell structure" as proposed by Larson (1988) for ditransitive constructions in English, with the difference that LGP, as other sign languages, appears to admit null prepositions.

The existence of agreement between V and DO in Sign Languages (SL) has lead several researchers in the 1990s to adopt structures with functional categories as proposed by Chomsky (1993), such as AgrSP and AgrOP, for the agreement with S and DO, respectively (cf. Aarons *et al.*, 1992; Bahan, B., 1996, for ASL).

As for AgrSP, it is not justified, as there is no agreement with S, meaning that only the functional TP category is relevant. Whilst a category such as AgrOP could be justified for SL, given the importance of object agreement

(cf. Quadros & Karnopp, 2004), we suggest that AgrOP's role may be described as vP (cf. Minimalist Program).

V does not move to T, as there are no marks of tense to be validated by the verb. This is because tense expressions are represented in LGP in the form of auxiliaries or adverbs, projected on T or on TP adjuncts. However, V can move to ASP or to Voice; in fact, ASP is a relevant functional category in LGP. But because aspectual contrasts may be given by auxiliaries and adverbs, we will assume V moves to Voice.

With S / Agent moving to TP specifier and with DO / Theme movement to vP specifier, one could immediately explain the order S V DO IO, which we believe is the basic order of ditransitive constructions in LGP. But, as we have seen, there is more to say about this matter.

IO usually stays in its basic position; however, sometimes it moves up to the left of DO, in a movement similar to 'scrambling' (a movement that happens for discursive reasons and which may be described as an adjunction to a verbal projection to the left). It's the case of (10) and (25 / 27), now repeated as (33) and (34):

(33) PAI DAR MÃE LIVRO (Ex. II, C.1)
father give mother book
'the father gives the book to mother'

(34) MENINA_a MENINO_b MENINA_a FLOR_a DAR_{CLb} (Ex. I, T1, B.1)
girl_a boy_b girl_a flower_a give_{CLb}
'the boy gives the flower to the girl'

As we have stated before, the data we currently possess do not point to a Double Object Construction in LGP, given the reduced amount of sentences with the order S V IO DO; also, (34) may be achieved by a topic introducing a referent.

In (30), we have found a production which points to a copy movement of V DAR 'to give'. It is hereby repeated in (35):

- (35) MENINO DAR PRESENTE DAR_{CL} MENINA (Ex. I, T2, C.1)
boy give gift give_{CL} girl
'the boy gives the gift to the girl'

The interesting aspect here is the fact that this sentence contains the second copy of the verb with an incorporation of DO classifier, meanwhile moved to a position to the left.

Therefore, this type of construction presents important questions:

- (i) is there a double movement, with DO moving first and then the verb, with null or incorporated arguments?
- (ii) is there movement of the whole [V' [V [Theme]]] constituent?
- (iii) is there copy movement of DO, represented by a trace incorporated in V in CL form?

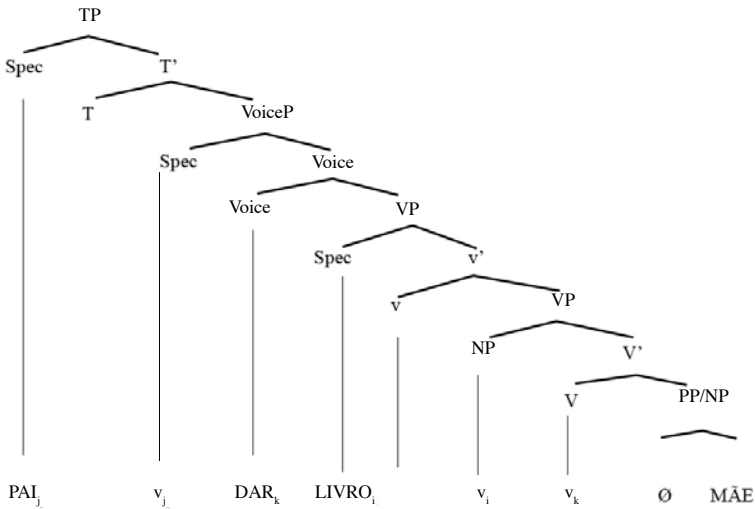
Note that the latter option – that of movement by DO copy, represented by a trace incorporated in V in CL form – seems equally plausible for examples such as (16), hereby repeated as (36):

- (36) MENINO PRESENTE DAR_{CL} MENINA (Ex. I, T2, B.2)
boy gift give_{CL} girl
'the boy gives the flower to the girl'

Such hypothesis would justify several productions with a surface order SOV, so often found in formal and informal productions in LGP. In LIBRAS, a similar mechanism is described to justify the survival of a low copy of the verb carrying marks of agreement. This mechanism is close to an end focus (cf. analysis of example (31); Quadros & Karnopp, 2004:181).

Therefore, we believe the syntactic structure common to the examples presented is as follows:

(37)



On this structure there are constituent movements, some of which we have already mentioned. As we have shown in (37), verbal syntax has, at least, three structural levels: vP, VP, preceded by a functional category such as VoiceP – a category introduced by Kratzer (1996) – in order to include S, the external argument (also, cf. Alexiadou, 2001; Alexiadou et al., 2011).

In this sense, we will propose that the main V will move to functional category VoiceP, which is capable of hosting verb movement (not excluding, nevertheless, other categories such as AspP). DO / Theme moves up to vP specifier, which explains the SVO order.

In LGP, the verb can climb by copy movement, which can explain the lexical representation of two verb copies in sentences such as (35). By accepting this idea, we will also be able to explain the S DO IO V structures. In these cases, the higher copy is not represented (unlike what generally happens in OL); therefore, only the lower copy, the one with marks of agreement, is represented. This may be related to the fact that in SL the focus is always at the end of the sentence, as verified in (37).

In most constructions taken from the *corpus*, IO is represented by a NP at the end of the sentence supposedly headed by a null preposition, which may – just as in some OL – assign dative case and justify why this argument

will not move. In such circumstances, the agreement operation does not take place and IO does not move from its basic position; however, in constructions where IO seems to have been moved from its basic position, an agreement mark on V is always found (such as the trajectory movement, for instance). This reinforces the idea that S V DO IO is the basic order.

However, to confirm this, more data would have to be analyzed. Given the absence of such data, we will assume that, in LGP, there is a non-marked S V DO IO order and that there is no second word order pattern, as in dative alternation languages.

5. Conclusions

Following the study of Bettencourt (2015), we believe we have shown that LGP is basically an SVO language and that the representation of signs, which suggests the introduction of one or more referents in the speech – a possible result of topicalization(s) –, does not put the dominant word order into question.

We have attempted to show that LGP, as other sign languages, presents the same type of syntax suggested for OL, based in common principles of binarism and hierarchy and where the fundamental syntactic operations are *merge*, *agree* and *move*. Besides the VP lexical category, functional categories are also justified, not only to account for different word order patterns, but mainly to validate traces of moved constituents. However, the application of highly hierarchized structures, such as those used in OL, does not seem to make sense for SL, given their manual-motor and visual-spatial modulation. Thus, it seems plausible that what could be seen as Topicalization or double Topicalization should actually be reanalyzed and in some cases interpreted as a first presentation of the situation, serving as introduction to the referents (cf. Padden, 1990; Lillo-Martin, 1986). Hence the idea that the non-marked order in LGP is SVO, despite the attempt to describe and to explain different order patterns.

We suggest that the syntax of LGP is based on head movement and maximal projections; among them, we have suggested there is copy movement of DO and that the DO copy is represented by a trace incorporated in V in CL form.

All this confirms that this language has its own grammar, highly related with the use of the syntactic space.

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Appendix I

Data collection strategy 1, Task 1 – Forced production and comprehension in LGP

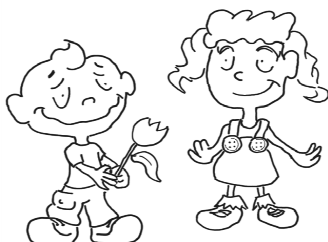


ILLUSTRATION 1A: Non-verbal visual stimulus (Ex.1, T1)

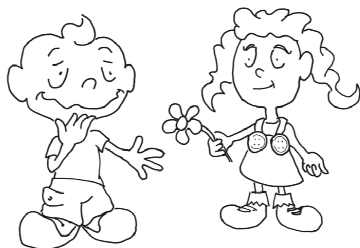


ILLUSTRATION 1B: Non-verbal visual stimulus (Ex.1, T1)

Appendix II

Data collection strategy 2, Task 2 – Forced production



ILLUSTRATION 2: Non-verbal visual stimulus (Ex. 1, T2)

