Reflexivizing Spanish psych-verbs: Ambiguities across classes

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1. Introduction

The *se*- morpheme in Spanish can generate different types of readings. Some of the well-studied interpretations of *se* are as a reflexive marker (in *Pedro se afeita* 'Pedro shaves *himself*'), and *se* as a reciprocal marker (in *Pedro y Juan se ven todos los días* 'Pedro and Juan see *each other* every day'). Psychological verbs (hereafter psych-verbs), such as *asustar* 'frighten' and *amar* 'love', also combine with this morpheme yielding different readings.

In the psych domain, the *se*-morpheme is used as a strategy to alternate the *experiencer* argument (i.e. the entity capable of feeling an emotion) as either the object or subject of the sentence (also known as the experiencer alternation, cf. Landau 2010). In (1a), the experiencer Carlos is the object (hence experiencer-object -EO- verb) of the sentence; whereas in (1b), the experiencer is the subject (hence experiencer-subject -ES- verb).

(1) a. *Ana*$_{\text{STM}}$ *divierte* *a* *Carlos*$_{\text{EXP}}$.
Ana entertains to Carlos
'Ana entertains Carlos.'
b. *Carlos*$_{\text{EXP}}$ *se divierte*.
Carlos SE entertains
'Carlos gets entertained.'

As seen in (1), Spanish presents basic transitive EO verbs (e.g. *divertir* 'entertain') and derives the morphologically more complex intransitive ES alternants by attaching the *se*-morpheme to the transitive verbs (e.g. *divertirse* 'get entertained'). Generally, the literature has referred to this *se* as an anti-causativizer (cf. Schäfer 2008; Alexiadou & Iordachioaia 2014), an inchoativizer (cf. Bar-el 2005; Haspelmath 2019), and recently as a left boundary marker (cf. Marín & McNally 2005, 2011). Taking into consideration Marín and McNally's (2011) analysis, we treat the *se*-morpheme as a boundary that attaches to the state to which the verb makes reference. In sentence (1b), the beginning of the state of being entertained in Carlos is denoted by this boundary. Since this boundary attaches to the state, we call these verbs *left-bounded states*.[1] By analyzing the *se*-morpheme as a left-boundary marker, we do not only provide a more precise description of the experiencer-alternation phenomenon in Spanish, but we can also further specify these verbs as *non-punctual* stative verbs (e.g. *divertirse* 'get entertained') and *punctual* stative verbs (e.g. *asustarse* 'get frightened'), cf. Marín and McNally (2011). In addition, these verbs can also generate a true reflexive reading when combined with the *se*-morpheme (cf. Arad 1998). In sentence (2), *se* is used as a true

[1] In this paper, we use the term *left-bounded states* and not "inchoative states" as in Marín and McNally (2011), since the latter generates some terminological confusion.

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reflexive marker where the experiencer Carlos performs an action of the type of entertaining causing himself to be entertained.

(2) *Carlos*$_{EXP}$ *se divierte* (*a sí mismo*).
Carlos SE entertains to him self
'Carlos entertains himself.'

The goal of this paper is to model the above-mentioned two different readings of Spanish psych-verbs when combined with the *se*-morpheme, i.e. the left-bounded state reading and the true reflexive reading. For that matter, we make use of Head-Driven Phrase Structure Grammar (HPSG) to describe the distribution of the morpheme with particular subtypes of psych-verbs. In addition, we take into consideration the verbs' case marking assignment of the experiencer, different theta-roles and eventualities in the sentence structure. Furthermore, we treat *se* as a clitic attached to the verb by means of morphological and not of syntactic mechanisms (see Section 3). Finally, we make use of lexical rules (LRs) in HPSG to explain the procedure of deriving a morphologically more complex verb (e.g. *divertirse* 'get entertained') from a morphologically simpler item (e.g. *divertir* 'entertain'). This model allows us to provide commonalities and differences of the use of the *se*-morpheme in the Spanish psych domain.

2. The Spanish *se*-morpheme in the psych domain

In this section, we start by first explaining the different classes of morphologically basic transitive psych-verbs in Spanish making reference to their event structure, case and theta-role assignment, based on our previous work Machicao y Priemer & Fritz-Huechante 2018 (henceforth MyP & FH 2018). This classification will serve as a starting point to see which subtypes of psych-verbs can combine with the *se*-morpheme, and which cannot. Secondly, we demonstrate how the *se*-morpheme combines with these specific classes generating a morphologically more complex item. Finally, we explain the two readings the *se*-morpheme generates: a true reflexive reading and a left-bounded state reading.

Following the Italian classification of psych-verbs (cf. Belleti & Rizzi 1998), Spanish psych-verbs have traditionally been categorized in three classes (Franco 1990; Landau 2010). Class 1 includes EO verbs which always assign dative case to the experiencer, e.g. *gustar* 'like' (3a) and *doler* 'hurt'. These structures are perceived as stative; i.e. in (3a) the experiencer is in the state of liking Carlos without Carlos performing a goal-oriented action (e.g. to make Ana love him) towards Ana. The stimulus Carlos here is perceived as the theta-role *subject matter* (Pesetsky 1995; MyP & FH 2018), meaning there is *something about* Carlos that Ana likes. Class 2 contains EO verbs which can assign either dative or accusative case to the experiencer, e.g. *divertir* 'entertain' and *asustar* 'frighten'. The dative structure of these verbs is considered the same as class 1 above, i.e. stative and with the same type of stimulus: a subject matter (cf. Marín 2014, 2015; MyP & FH 2018). On the contrary, the accusative structure is seen as eventive and causative; e.g. in (4a) Ana causes the experiencer Carlos to enter the state of being entertained. In other words, Ana is a *stimulus-causer* (cf. MyP & FH 2018, based on Pesetsky 1995). Finally, class 3 ES verbs includes items of the type of *amar* 'love' (5a) and *odiar* 'hate'. The literature has generally considered them as stative, assigning accusative case to their stimulus[2].

[2] In MyP & FH (2018), it is shown that this class can also alternate the stimulus between dative and accusative case, where the dative stimulus receives the theta-role of *subject matter* and the accusative one receives the

(3) a. *A Ana le gusta Carlos*.
to Ana CL.DAT likes Carlos
'Ana likes Carlos.'
b. **Ana se gusta*.
Ana SE likes
intended readings: 'Ana gets liked.' / 'Ana likes herself.'

(4) a. *Ana* (*lo*) *divierte a Carlos*.
Ana CL.ACC entertains to Carlos
'Ana entertains Carlos.'
b. *Carlos se divierte*.
Carlos SE entertains
'Carlos gets entertained.' / 'Carlos entertains himself.'

(5) a. *Ana* (lo) *ama a Carlos*.
Ana CL.ACC loves to Carlos
'Ana loves Carlos.'
b. *Ana se ama*.
Ana SE loves
'Ana loves herself.'

From the previous classification, we observe that the *se*-morpheme combines with class 2 and 3 only; i.e. with only those verbs that assign accusative case to their objects. As seen in (3b), *gustar*-type items are ungrammatical when attaching the morpheme to the basic verbs. In the case of class 3, with items such as *amar*, when these verbs are combined with *se* only the true reflexive reading is available (cf. (5b) and Section 4.1, also see Arad 1998). For instance, sentence (5b) is interpreted as 'Ana loves an entity and this entity is herself'. However, in the case of class 2, the result of the combination of the *se*-morpheme with the verb is ambiguous between a true reflexive reading and a left-bounded state reading (as seen in the translations for (4b)). Following Marín and McNally's (2011) analysis of Spanish *se* psych-verbs, the left-bounded state reading refers to the starting of the state in the experiencer. For instance, in (4b) Carlos starts the state of being entertained. This reading is formalized by means of a left boundary (cf. Piñón 1997) which refers to the starting point of the state, and which is incorporated in the lexical item. Additionally, class 2 can be further specified by means of the left boundary between *punctual* psych-verbs (e.g. *asustarse* 'frighten') and *non-punctual* psych-verbs (e.g. *divertirse* 'get entertained') (see Section 4.3). Table 1 below summarizes the different classes of psych-verbs that can be combined with the *se*-morpheme and the readings that obtain as a result.

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theta-role of *target* (based on Pesetsky 1995). This stimulus case alternation leads the authors to further divide ES psych-verbs in two subclasses: those that prototypically assign accusative, such as *amar* 'love'; and those that prototypically assign dative, such as *temer* 'fear' (cf. MyP & FH 2018).

Table 1: Distribution of *se*-morpheme and its different readings in the Spanish psych domain.

class	basic psych-verb	type	complex psych-verb[3]	*se* reading
1	*gustar* 'like'	state	**gustarse*	-
2	*divertir* 'entertain'	non-punctual	*divertirse*	true reflexive
2			'get entertained'	left-bounded state
2	*asustar* 'frighten'	punctual	*asustarse*	true reflexive
2			'get frightened'	left-bounded state
3	*amar* 'love'	state	*amarse*	true reflexive
			'love (oneself)'	

3. Clitization of the *se*-morpheme

Following previous HPSG-analyses on clitics in Romance languages, we analyze the *se*-cliticization as morphological and not as a syntactic process (cf. Miller & Sag 1997; Abeillé & Godard 2002; Crysmann 2003; Bildhauer 2007). In the following, we explain the advantages for treating the *se*-cliticization as a morphological process.

When cliticization is understood as a syntactic process, clitics are analyzed as syntactic arguments of the verb. Relevant to our analysis, the comparison of syntactic arguments of verbs to clitics shows many differences, which have been previously mentioned in the literature (cf. Bildhauer 2007: 19 for further details). For instance, clitics (in Spanish) can be combined only with verbs, while for instance NPs as (syntactic) arguments can combine with different categories: verbs, prepositions, etc. In addition, while syntactic arguments can be coordinated or elided in coordinative structures, clitics cannot. Furthermore, the linear order of clitic clusters is fixed (cf. 6a vs. 6b), while other verbal arguments can take different positions in relation to each other in a sentence (cf. 7a vs. 7b).

(6) a. *dá -se -lo*
give -CL.DAT -CL.ACC
'give it to him/her'
b.**dá -lo -se*
give -CL.ACC -CL.DAT

(7) a. *di a Juan el libro y me fui*
gave to Juan the book and -CL left
b. *di el libro a Juan y me fui*
gave the book to Juan and -CL left
'I gave Juan the book and left.'

Moreover, since we assume Lexical Integrity (following Bresnan & Mchombo 1995; Müller 2006; Müller & Wechsler 2014, a.o.), word formation must take place before syntax. Nominalization processes are canonically analyzed as a word formation process and should therefore be analyzed morphologically. Since not only a verbal infinitive such as *divertir* 'to entertain' (8), but also a cliticized verb such as *divertirse* 'to entertain oneself' can be nominalized (9), it can be argued that cliticization has to be analyzed morphologically and not syntactically.[4]

[3] Complexity here refers to a morphological more complex item and not to a semantically more complex verb.
[4] Examples (8) and (9) are taken from the ESCOW16 corpus (cf. Schäfer & Bildhauer 2012).

(8) […] *el divert-ir al público mostrándo-le efectos inesperados.*
The entertain-INF to.DEF audience showing-them effects unexpected
'[…] entertaining the audience showing them unexpected effects' (ESCOW16)

(9) […] *tenía como única ambición el divert-ir-se*
had as only intention the entertain-INF-SE
'Her only intention was to entertain herself.' (ESCOW16)

With respect to cliticization in general, clitics in Spanish are attached not to morphological stems but to word forms, i.e. to inflected words. For instance, in (10a), the verbal stem *asust-* has the infinitive morpheme *-ar*, thus the *-se* clitic can be attached to the infinitive word form *asustar*, but it is not possible to attach *-se* to the stem directly, as (10b) shows.

(10) a. *asust -ar -se*
fright -INF -SE
'to get frightened'
b.**asust -se*
fright -SE

The linearization of clitics relative to the verb depends on properties of the verb; more specifically, on the type of inflectional morphology on the verb. We have to deal with two different patterns: (a) if we have a verb in the infinitive, the clitic is attached post-verbally (cf. 11a vs. 11b), or (b) if we have a finite verb, the clitic is attached pre-verbally (cf. 12a vs. 12b).

(11) a. *asust -ar -se*
fright -INF -SE
'to get frightened'
b.**se- asust -ar*
SE- fright -INF

(12) a.**asust -a -se*
fright -3.SG.PRS -SE
b. *se- asust -a*
SE- fright -3.SG.PRS
'(he) gets frightened'

These distributional patterns with respect to the verb are not only specific for the clitic *se*, but they are general for all clitics in Spanish. Since we are analyzing cliticization as a morphological process, we handle the phenomenon by means of lexical rules (LR). Therefore, the general LR for cliticization takes verbs of type *inflected verb* as input. Verbs of type *inflected verb* can be further specified as *finite* or *infinite*. According to this specification, the clitic will be linearized after the inflected verb for the latter (11a), and before the inflected verb for the former (12b). Due to the fact that the topic of the present paper is to give an accurate description of the different readings achieved by the combination of Spanish psych-verbs with the clitic *se*, and not to give a complete account of cliticization in Spanish, we might leave the issue of the general cliticization rule open.

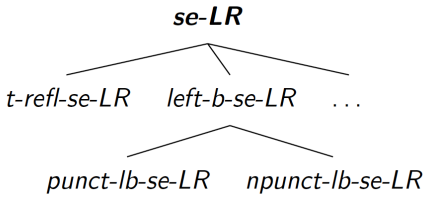
4. Treatment of the *se*-morpheme and its different readings

4.1 Lexical rules for *se*-cliticization

As already mentioned, we are analyzing the *se*-cliticization as a morphological rule, i.e. as a LR. The *se*-morpheme in Spanish can have more functions than the ones explained here, but for a start, we are only concentrating on the true reflexive and the left-bounded readings.

One of our goals is to achieve a unified analysis of *se* that reflects the commonalities and differences of all uses of *se*. In HPSG, linguistic generalizations are captured by means of inheritance hierarchies (cf. Müller & Machicao y Priemer 2019 for an overview). Therefore, we are modeling the different types of *se*-cliticization by means of an inheritance hierarchy of LRs (cf. Figure 1).[5]

Figure 1: Inheritance hierarchy of LRs for *se*-cliticization



In inheritance hierarchies, the types at the top are more general (and less constrained) than its subtypes. For instance, in Figure 1, the most general type in our hierarchy (i.e. *se-LR*) is a LR that applies to all subtypes of *se*-cliticization. Since it is an *inheritance* hierarchy, the constraints of the more general types at the top are passed on to the subtypes.

A LR consists of an input and an output. The input restricts the type of elements that can enter the rule in order to produce an element that matches the constraints specified in the output.[6] The input of the *se-LR* takes elements that are inflected verbs as input (cf. 11 and 12). Furthermore, these elements must have two arguments with structural case (one in the nominative case and one in the accusative). With this constraint, it is possible to avoid that verbs of class 1 such as *gustar* 'to like' enter the LR, since these verbs have a nominative and a dative argument. As output, the LR has only one element with structural case in its argument structure list and the representation of the affix, which is needed for agreement purposes (cf. 13a and 13b). Further constraints are added up by the subtypes of the LR, as it will be explained in the following sections.

(13) a. *Yo me amo.*
I CL.1.SG love
'I love myself.'

b. *Él se ama.*
he CL.3.SG love
'He loves himself.'

[5] Linguistic objects affected by these rules are also affected by a more general cliticization rule as mentioned in Section 3. This more general cliticization rule will take care of the linearization of clitics.

[6] For the sake of clarity in this short paper, we are not giving the details of the HPSG formalization here, that is we are just giving a description of our analysis.

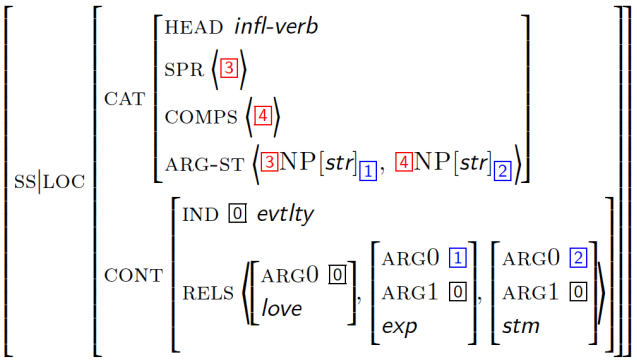
4.2 The true reflexive *se*

Class 2 and 3 basic transitive EO psych-verbs generate a true reflexive reading when combined with the *se*-morpheme (see Table 1). In this case, the predicates possess two theta-roles: (a) an "external" one which has proto-agent properties, and (b) an "internal" one which has proto-patient properties. One same entity (e.g. *Carlos* in (14)) receives these two theta-roles, making them semantically transitive predicates (cf. Schäfer 2008; Alexiadou & Schäfer 2013). In (14), *Carlos* is the agent of the action of showering and the patient of such action. As explained in Section 1, psych-verbs can also generate a true reflexive reading (Grimshaw 1990; Arad 1998). For example, in sentence (4b) *Carlos* (a proto-agent) performs an action of the type entertaining on himself; hence receiving also the theta-role of proto-patient.

(14) *Carlos se baña* (*a sí* *mismo*).
Carlos SE showers to him self
'Carlos showers (himself).'

The true reflexive reading is obtained by means of the *true-reflexive-se-LR* (*t-refl-se-LR* in Figure 1). This rule inherits the constraints for input and output from the more general *se-LR* and states further constraints. In Figure 2, we give an example of the constraints for a verb that can be used as the input of *t-refl-se-LR* (in this case *ama* 'loves'), and in Figure 3, we give an example of the output of the rule (*se ama* 'loves himself').

Figure 2: *ama* 'loves'

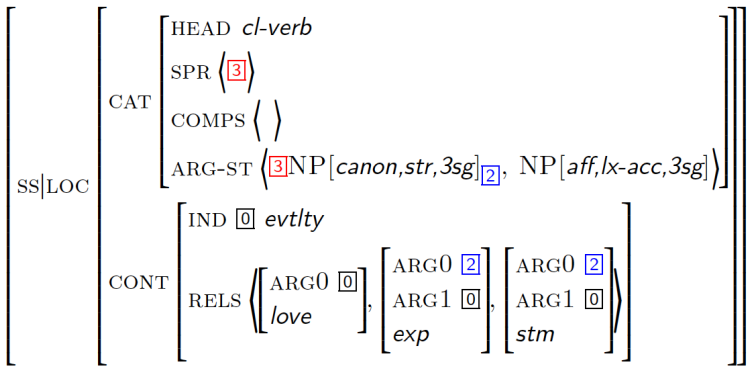


In CAT(EGORY), the syntactic information is constrained. The verb has the HEAD value *inflected verb*. In the ARG(UMENT)-ST(RUCTURE) list, there are two NPs with structural case. In CON(TENT), the semantic information is encoded. IND(EX) gives the type of semantic object the constraints are describing, in this case it is an *eventuality*. In REL(ATION)S, the list of elementary predications that are denoted by the predicate *amar* are given (cf. Copestake et al. 2005). In this representation the predicate is divided in a neo-Davidsonian fashion (cf. Parsons 1990), that is, representing the predicate (*love*) and the theta roles (*experiencer* and *stimulus*) as separated elementary predications.[7] In the input, the experiencer (marked with the index 1) is linked to the first element of the ARG-ST list, that is the element bearing nominative (by means of the Case Principle, cf. Meurers 1999; Przepiórkowski 1999). The second element of the ARG-ST list, that is the element bearing accusative, is linked to the stimulus (marked with the index 2).

[7] For further details on how neo-Davidsonian semantics can be implemented in HPSG see MyP & FH (2018).

In the output of the LR (cf. Figure 3), only the first element of the ARG-ST list is linked to the semantic arguments; in fact, it is linked to both theta roles (cf. index 2). That is, the first element of the ARG-ST list, the nominative argument, is being interpreted as the experiencer as well as the stimulus of the predication. The second element of the ARG-ST list is realized as an *aff*(*ix*) and is not linked to the semantics. Furthermore, the output verb is of type *cliticized verb* (*cl-verb*).

Figure 3: *se ama* 'loves himself'



4.3 The left bounded *se*

As mentioned in Section 1, transitive EO psych-verbs from class 2 yield a left-bounded state reading (in addition to the reflexive one) when combined with the *se*-morpheme. Based on Marín and McNally's (2005, 2011) idea of the inclusion of a left boundary that denotes the starting of a state in the experiencer, we believe that an analysis in these lines fits better the data in the Spanish psych domain. This analysis separates from the traditional view that claims that the *se*-morpheme attached to these verbs is an *inchoativizer* (cf. de Miguel & Fernández 2000)[8]. Instead, what these verbs possess is a left boundary (based on Piñón 1997) which refers to the entering of the experiencer into the state described by the verb. Crucially, these verbs do not make reference to the interval prior the beginning of the state nor to the end of a process (cf. Footnote 6). As such, since these verbs do not have an inherent telos, they show to be atelic. This can be seen when applying the *in*-adverbial test which generates an *after* reading. In example (15), the adverbial does not measure the process that leads to the starting of the state, but it measures the time until the state of entertainment starts in the experiencer.

[8] Authors following this line of analysis formalize inchoativity by means of the BECOME operator, hence asserting a change of state in the predication (cf. Dowty 1979; Bar-el 2005). As such, these verbs behave as telic predicates (as in (i) with the canonical change of state verb *dry*). However, *se* psych-verbs from class 2 show to be atelic, cf. example (15).

(i) *La ropa* *se secó* *en 10 minutos.*
the clothes SE dried in 10 minutes
'The clothes got dried in 10 minutes.'

As seen in (i), the *in*-adverbial measures the time-span in which the described eventuality takes place; i.e. the process of *drying* the clothes which took up until 10 minutes; that is, the process previous to the state of *being dry*, see contrast in (15).

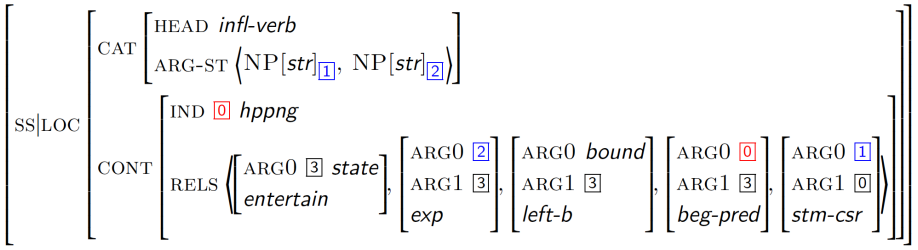
(15) *Carlos se divirtió* *en 10 minutos*.
Carlos SE entertained in 10 minutes
'Carlos got entertained in (after and not before) 10 minutes.'

In addition, by means of this left boundary, we can further specify this class into: (a) *non-punctual* psych-verbs (e.g. *divertirse* 'get entertained', see (16a)), and (b) *punctual* psych-verbs (e.g. *asustarse* 'get frightened', see (16b)). Under the boundaries' view, non-punctual psych-verbs are understood as a state with a starting point (i.e. the left boundary, see Figure 5); whereas punctual psych-verbs are seen as a boundary of a state (see Figure 6). This denotation yields differences in readings between the verbs when combined with a durative adverbial such as *for* (cf. Dowty 1979). In sentence (16a), the adverb measures the time (10 minutes) in which the state of being entertained in the experiencer Carlos holds. In the case of sentence (16b), since the verb denotes a point in time, an iterative reading is elicited where Carlos gets frightened in repetitive occasions during the period of 10 minutes.

(16) a. *Carlos se divirtió* *durante* *10 minutos*.
Carlos SE entertained for 10 minutes
'Carlos got entertained for 10 minutes.'
b. *Carlos se asustó* *durante* *10 minutos*.
Carlos SE frightened for 10 minutes
'Carlos got frightened for 10 minutes.'

As with the true reflexives, the left-bounded readings inherit the constraints from the *se-LR*. The *left-bounded-se-LR* (*left-b-se-LR* in Figure 1) further constrains that the input must have a left boundary (*left-b*) in its RELS list. Since transitive psych-verbs of class 2 (cf. Table 1) are treated as causative (cf. MyP & FH 2018) resulting in a psych state, a sentence such as (1a) can be paraphrased as 'Ana is the stimulus-causer that starts the state of entertainment experienced by Carlos' (the same paraphrase holds for *asustar*, cf. MyP & FH 2018 for further details on the transitive form).

Figure 4: *divierte* 'entertains'



As the output of the rule, the *beg*(*inning*)-*pred*(*icate*) and the *stimulus-causer* (*stm-csr*) are deleted from the semantics, and the only realized argument is interpreted as the *experiencer* of the left-bounded *entertain* state.

Figure 5: *se divierte* 'gets entertained'

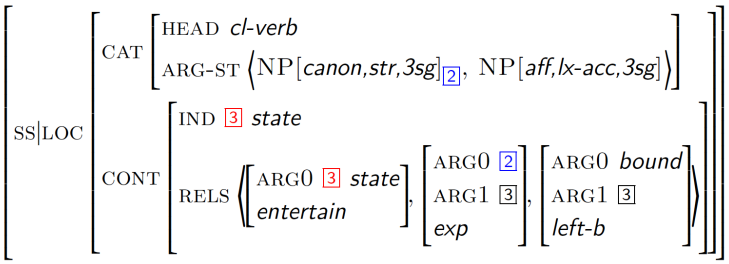
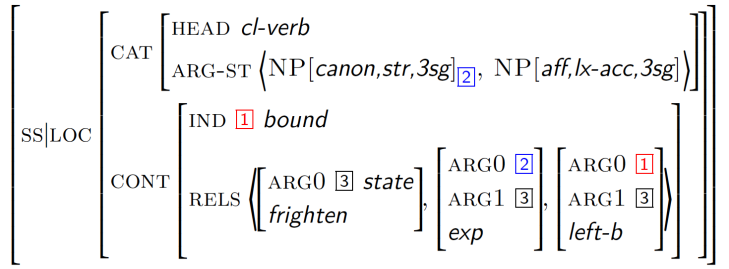


Figure 6: *se asusta* 'gets frightened'



The only difference between punctual left-bounded states (derived by *punct-lb-se-LR*) and non-punctual states (derived by *npunct-lb-se-LR*) is the reference of the verb. While non-punctuals represent states that have a starting point (the left-boundary) and thus denoting a state (cf. index 3 in Figure 5), punctuals represent punctual eventualities and are therefore structure-shared with the left-boundary of the state (cf. index 1 in Figure 6). This different constraining of the verbal reference separates the two rules.

5. Conclusions

The aim of this paper was to provide a unified account to describe the different types of readings of the *se*-morpheme in the Spanish psych domain. We focused on two (of the many) interpretations of the morpheme, namely the left-bounded and the true reflexive readings. In order to properly describe the behavior of the *se*-morpheme with psych-verbs, we made use of a hierarchy of lexical rules for the *se*-morpheme deriving the different readings of psych-verbs cliticized with *se*.

From here, we were able to deduce three main facts. Firstly, only those psych-verbs that assign accusative to either the experiencer (class 2, e.g. *asustar* 'frighten') or stimulus arguments (class 4, e.g. *amar* 'love') are able to build the *se*-form. This lets us put aside dative verbs such as *gustar* 'like' (class 1) or *amar* 'love' when assigning dative to the stimulus (i.e. class 3). Secondly, the analysis showed similarities and distinctions between the studied structures. By means of lexical rules, we could further constrain those lexemes that accept a *se*-morpheme with only a true reflexive reading (class 1) and those lexemes where *se* is ambiguous between a left boundary and a true reflexive interpretation (class 2). Moreover, these constraints allowed us to see similarities to passive and medio-passive constructions. As in passivation, we reduce the ARG-ST list, but also the RELS list, such that there is no semantic implication of a causer in the output; i.e. semantic arguments are deleted. Likewise, by means of the LRs we can also foresee connections between the psych domain and other verb classes (e.g. with degree achievement verbs *secarse* 'get dried').

Finally, in our analysis, we derived the morphologically more complex (but semantically simpler) *se*-forms from the morphologically simpler (but semantically more complex) transitive causative alternants of the verbs by means of lexical rules. This shows to be an

advantage over derivational approaches that require that the causative form, e.g. *asustar*, is derived from the non-causative form e.g. *asustarse* (cf. Kratzer 2000; Piñón 2001 for derivational approaches). Lastly, by incorporating the elaborated formal analyses proposed in Piñón (1997), and Marín and McNally (2011) in HPSG, we enrich the type hierarchy for eventualities (i.e. by making use of boundaries) leading to a more-fine grained differentiation of psych-verbs.

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