An HPSG Analysis of Grammatical Relations, Syntactic Valency and Semantic Argument Structure in Spanish Psychological Predicates and other Instances of Quirky Case and Agreement

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Abstract

We provide an extensive review of data relating to psychological predicates and other predicates in Spanish which apparently diverge from the otherwise standard SVO order. The data raises questions about the usefulness of grammatical functions like 'subject', given the properties that these sentences have in basic finite forms: the logical subject is in dative case (rather than nominative) and fails to agree with the verb. Phenomena sensitive to subjecthood are examined with these predicates in mind. We provide data on control, raising, binding, passivization, nominalization and adjective formation. We also demonstrate that English maintains related constructions. Our conclusions from the data are that 'subject' is less useful a notion than the joint notions of 'least-oblique' constituent and 'agreement controller'. We formalize our view in Head-driven Phrase Structure Grammar (HPSG; Pollard & Sag, 1987, 1994). We propose an alternative HPSG solution to the problems pointed out with a flat subcategorization list by Borsley (1989), one that does not involve recourse to the notion of subject nor the SUBJ/COMPS distinction that has gained favor in recent work (Chr. 9, Pollard & Sag, 1994). This solution is compatible with our formalization of the agreement control properties in the data at stake. The solution involves designating an index agreement controller of subcategorizing elements. While this is also compatible with the SUBJ/COMPS distinction, our proposal does not leave us in a position of having to justify why something is counted as a syntactic subject when the verb agrees with some index on the COMPS list.

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1 Introduction

Ignoring clitics, Spanish is an SVO language. Our operational definition of a subject NP is that it be a nominal satisfying the following conditions: A) it requires nominative case upon pronominal substitution; B) it appears as the first NP in an unmarked finite clause; C) it is semantically coindexed with the 'logical subject'; D) it exhibits agreement coindexing with the finite V. However, certain emotion verbs in Spanish test this definition. In (1),

apetecer accepts the object of fancy as a canonical subject, but this is a highly marked structure; (2) is a more acceptable form. This sentence has as its first NP a dative NP (*A mí*) rather than a nominative, and agreement features are shared between the verb and the nominative NP which follows it, even though the dative NP is actually the logical subject of the utterance. If the first NP is the subject, then conditions A and D are violated, and if the postverbal NP is the subject then conditions B and C are violated.

(1)   ? Tus pasteles me   apetecieron
       Your pies   Dat-Cl-1sg fancy-3rd-pl-past
       'I fancied your pies.'

(2)   A mí me   apetecieron   tus pasteles
       To me Dat-Cl-1sg fancy-3rd-pl-past your pies
       'I fancied your pies.'

Head-Driven Phrase Structure Grammar (HPSG; Pollard & Sag, 1994) provides the wherewithal to account for the behavior of this class of verbs,[1] without appeal to movement. We assume a lexical relation between the two syntactic valency patterns. In (1), the verb's SUBJ list specifies a nominative NP with a semantic index that shares the verb's own agreement features, and the verb's COMPS list specifies a dative NP whose index is the logical subject. In (2), the verb's SUBJ list specifies a dative NP whose semantic index is the logical subject, and the verb's COMPS list requires a nominative NP whose semantic index shares the verb's agreement features.

We present a range of data reinforcing the conclusion that constructions like (2) have dative syntactic and logical subjects which do not enter into verb index agreement relations. However, we argue that the notion of syntactic subject, by virtue of the data presented, is problematic. Thus, we dispense with the notion and revert to the original way Pollard and Sag (1987) handled valency in HPSG, using a single SUBCAT list rather than a SUBJ–COMPS partition, and propose an alternative solution to the problems pointed out by Borsley (1989). The constructions demonstrate that the notion of subject is problematic, yet the syntax-semantics interface for the constructions is neatly specifiable in HPSG. We examine the details and ramifications of this and alternative HPSG analyses for other aspects of the grammar (e.g. binding).

2   Semantic and Syntactic Argument Structure

Given any predicate denoting a property of an entity or a relation between two or more entities (i.e. the predicate *send*), the semantic argument structure of this predicate corresponds to the particular relation type that we will represent by X (in the example *send*) together with the arguments involved in that relation. In the case of any relation of type X (SEND), the two arguments would be: X-er (SENDER) and X-ed (SENT).[2] In HPSG the

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[1]Similar constructions exist in many other languages: English, German, French, Icelandic, etc.

[2]We ignore the technical difficulty pointed out by Pollard and Sag (1994, p. 338) leading potentially to an infinite set of basic sorts.

semantic argument structure information is stored inside the feature CONTENT and it is specific for each head lexical sign.

Head lexical signs in HPSG also carry information stating the type and quantity of complements that the verb subcategorizes for. These complements are grouped as the valency argument structure. Thus, any transitive verb will have the feature structure in (3):

$$
(3) \quad \begin{bmatrix} \text{SYNSEM:} & \begin{bmatrix} \text{LOCAL:} & \begin{bmatrix} \text{CAT:} & \begin{bmatrix} \text{HEAD: } verb \\ \text{SUBJ: } \langle \boxed{3}\,\text{NP: } \boxed{1} \rangle \\ \text{COMPS: } \langle \boxed{4}\,\text{NP: } \boxed{2} \rangle \end{bmatrix} \\ \text{CONTENT:} & \begin{bmatrix} \text{RELN: } verb \\ \text{X-ER: } \boxed{1} \\ \text{X-ED: } \boxed{2} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}
$$

Inside the angle brackets a numbered box of a feature called INDEX is the abbreviation to the agreement features PER(son), NUM(ber) and GEN(der) which are internal to this feature INDEX. The INDEX feature structure is represented as:

$$
(4) \quad \text{INDEX:} \quad \boxed{1} \begin{bmatrix} \text{PER:} \\ \text{NUM:} \\ \text{GEN:} \end{bmatrix}
$$

Agreement between the subject NP and the verb form is enforced by structure sharing of the index, and constraints on verb form and morphology corresponding to the X-er. Throughout the paper we will focus on index agreement rather than case agreement. When we refer to the agreement controller (AGRC), it will be the entity among the head's valency list entries that is identified by the number, person and gender markings on the predicate. SUBJ and COMPS are valency features expressing the combinatory requirements of the verb. We ignore SPR. In normal circumstances, the syntactic argument of a verb most likely to undergo the action expressed by that verb is assigned nominative case. Canonical subjects carry nominative case and one can easily prove this by replacing the full nominal expression by tonic pronouns. Case agreement is managed by additional constraints on the elements that combine with the verb's valency features, the salient constraints on the arguments of (3) given in (5) and (6), elaborations of the structures tagged by $\boxed{3}$ and $\boxed{4}$, respectively (the tags are assumed to be structure shared with co-tagged elements of (3)).[3]

$$
(5) \quad \boxed{3} \begin{bmatrix} \text{SYNSEM:} & \begin{bmatrix} \text{LOCAL:} & \begin{bmatrix} \text{CAT:} & \begin{bmatrix} \text{HEAD: } _{noun}\,[\text{case: nom}] \end{bmatrix} \\ \text{CONTENT:} & \begin{bmatrix} \text{INDEX: } \boxed{1} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}
$$

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[3]Current theories of case in HPSG are rather more sophisticated than this, discriminating structural and lexical case, allowing a non-proliferation of lexical entries for base predicates (e.g. and their verbal and adjectival passive counterparts) (see Heinz & Matiasek, 1994; Kathol, 1994; Pollard, 1994; Przepiórkowski, 1999). In §5.7 there is a brief discussion of those approaches.

(6) $\boxed{4}$ $\begin{bmatrix} \text{SYNSEM:} & \begin{bmatrix} \text{LOCAL:} & \begin{bmatrix} \text{CAT:} & \begin{bmatrix} \text{HEAD:} & _{noun} \begin{bmatrix} \text{CASE: dat} \end{bmatrix} \end{bmatrix} \\ \text{CONTENT:} & \begin{bmatrix} \text{INDEX:} & \boxed{2} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}$

The structural schema and valency feature principles conspire to sanction root phrasal structures with valency specifying heads as sisters to specified arguments, those together daughters to the root with correspondingly canceled valency expectations (these are outlined briefly in §5). The concatenation of SUBJ followed by COMPS yields SUBCAT on the lexical head. The elements of SUBCAT are ordered by obliqueness;[4] thus, there is a correlation between order of arguments as expected by syntax and semantic arguments (in a linear logical form), at least in that SUBJ is the least oblique argument and typically the X-er.

Borsley (1989) provides evidence from Welsh that the order of arguments on SUBCAT does not correspond completely to grammatical function in that the least oblique complement of certain heads are not subjects (actually motivating the partition of SUBCAT into SUBJ and COMPS in the first place). Manning and Sag (1999) point to a range of other phenomena, like *pro*-drop and cliticization, in which semantic arguments do not appear on valency lists at all. Note that Spanish is a pro-drop language. Spanish syntax additionally admits (and in certain cases requires) limited duplication of semantic arguments through clitic doubling.

In fact, the sum of evidence suggests that the correlation between syntactic and semantic valency constrained by linear ordering is so loose that linguistic theory is best served not by building theories which require correspondence and account for valency patterns that fail to be isomorphic with extra means but by finding a uniform framework in which all of the mappings can be described directly and on par, without recourse to additional mechanisms. Only then will it be apparent what the natural categories are. HPSG provides a framework that makes this feasible. In §4 we return to HPSG, providing an overview of its architecture as received from the literature and with our proposed modifications.

The next section describes data from Spanish that challenges anglocentric notions of subject, along with syntactic and semantic valency mappings.

3 Psychological Verbs

3.1 Overview of The Data

The Spanish psych verbs under discussion mainly follow five different patterns of subcategorization.

1. Type 1 verbs: Verbs falling into this category are: *aburrir* 'to bore', *molestar* 'to disturb', *enojar* 'to upset, annoy', *alegrar* 'to cheer (up), to make happy', *entristecer* 'to sadden', *divertir* 'to amuse', *agradar* 'to please'....

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[4] As SUBCAT is a list, this order is artificially total when it should be partial.

2. Same verbs as in the Type 1 class but they frequently appear to follow different word ordering; experiencer dative NP occurs in initial position and a doubling clitic pronoun agreeing with the dative NP in person and number is inserted.

3. Verbs representative of this type are: *apetecer* 'to fancy (something)', *gustar* 'to like', *encantar* 'to charm, be delighted with, fascinate', *interesar* 'to interest', *doler* 'to ache' and *apasionar* 'to fascinate'. Regarding the syntactic constituency of these predicates, we migh think that they belong to type 2 verbs, though these very rarely appear in a construction as Type 1 verbs.

4. Verbs commonly known as 'pronominal verbs': *aburrirse* 'to get bored', *molestarse* 'to get cross, get upset', *ofenderse* 'to take offense, get upset', *enojarse* 'to get angry, lose one's temper', *alegrarse* 'to rejoice', *entristecerse* 'to grieve', *divertirse* 'to amuse oneself', *apenarse* 'to grieve, sorrow', etc. All of them express that the experiencer undergoes a feeling of joy, sadness, boredom, annoyance, pity, ...

5. Finally, a different pattern of complementation corresponds to verbs such as: *temer* 'to fear', *odiar* 'to hate', *creer* 'to believe', *adorar* 'to adore/love', *confiar* 'to trust', *conocer* 'to know', *añorar* 'to long for, to yearn for, miss', *anhelar* 'to wish for, to long for', *admirar* 'to admire', ...

All the verbs express psychological states. Some of the structures attach greater importance to the experiencer of such state and others will give more relevance to the participant that causes or provokes such a state on the experiencer. Type 2 verbs could be seen as topicalizations of Type 1 predicates. However, because of their structural similarity to Type 3 constructions which lack Type 1 correlates, we consider Type 2 predications as related to Type 1 predicates via lexical rule, yet still distinct as constructions. Thus, note the different syntactic-semantic patterns adopted by these predicates:

	Nominative NP	V	Dative/Accusative NP	
1.	Cause		Experiencer	
	AGR: [1]	AGR: [1]		

	Dative/Accusative NP	dat/acc-clitic	V	Nominative NP
2.	experiencer			cause
	AGR: [2]	AGR: [2]	AGR: [1]	AGR: [1]

	Dative NP	dat-clitic	V	Nominative NP
3.	experiencer			cause
	AGR: [2]	AGR: [2]	AGR: [1]	AGR: [1]

	Nominative NP	pronominal–*se*	V	(PP)
4.	Experiencer			Circumstance
	AGR: [1]		AGR: [1]	or Cause

> Nominative NP   V   NP / PP /that-clause
> 5.   Experiencer   Stimulus
>   AGR: $\boxed{1}$ AGR: $\boxed{1}$

Spanish typically adopts the SVO linear constituent order, but other orderings are possible, and thematic roles are not assigned on the basis of constituent ordering.

Regarding its syntactic configuration, Type 2 predicates take one more constituent than Type 1 verbs. This is a dative or accusative pronoun or clitic coindexed with the preceding NP agreeing in case, number, person and gender (since if the full accusative NP is feminine the clitic pronoun has the feminine suffix -*a*; if the full accusative NP is masculine the clitic pronoun would be the masc. one: *lo* or *le*). It is a matter of debate whether this is a full fledged argument or something like a resumptive pronoun (cf. Suñer, 1998).

Representative examples of each of the predicate types are given below.

(7)   La música alegra a los pasajeros en los aeropuertos
     The music amuses to the travelers in the airports
     'The music amuses the travelers at the airports'

(8)   A Chelo le   aburren las reuniones de departamento
     To Chelo dat-clitic bore$_i$ the meetings$_i$ of department
     'The departmental meetings bore Chelo'

(9)   A Juan le   apetecen unas vacaciones
     To Juan dat-clitic appeal-3pl some holidays
     'Holidays appeal to Juan'

     * Un helado de kiwi   apetece a mí
       An ice-cream of kiwi fancies to me
       'A kiwi iced cream appeals to me'

(10) a.   A los niños   les   gusta   preparar la cena
           To the children$_i$ Dat-Cl$_i$ likes-3rdSg to prepare the dinner
           'The children like to prepare the dinner'

       b.   Al niño   le   gusta   preparar la cena
           To the child$_i$ Dat-Cl$_i$ likes-3rdSg to prepare the dinner
           'The child likes to prepare the dinner'

(11) Yo me   aburrí con sus chistes
      I   myself bore with his jokes
      'I got bored with his jokes'

      * Yo me   aburrieron con sus chistes
       I   myself bore   with his jokes
       'I got bored with his jokes'

(12)   Juan teme los accidentes de moto
         Juan fears the accident of motorbike
         'Juan fears motorbike accidents'

       * Los gatitos temen
          The kittens fear
          'The kittens fear'

The nongrammatical cases in (9) above indicate that for Type 3 verbs, the cause cannot precede the psychological predicate;[5] Type 4 verbs (11) cannot allow the cause-NP to control agreement when not in the initial position; in Type 5 (12) predicates the cause-NP, though embedded in a PP, is not optional (in Type 4 the cause is optional). In the remainder of this section we re-iterate the properties of the 5 types of predicates. The examples in (10) indicate an alternative form of the Type 3 predicate in which it has an infinitival complement; the examples demonstrate that in this case the verb is in third person singular form no matter what the properties of the experiencer-NP are. In §3.3 we argue relative to other taxonomies of psychological predicates (e.g. Grimshaw (1990)), the 5 way distinction makes perfect sense.

The presence or absence of the doubling clitic *le* 'to him/her' in Type 1 (7), 2 (8) and 3 (9) occurring in preverbal position in finite/tensed sentences or enclitic in the head of the infinitival V is determined pragmatically. It is interesting to consider the syntactic status of these clitics. In Types 1, 2 and 3, the full NPs may be dropped once their referents have been presented in discourse but their coindexed clitics are still needed and they provide information about gender, person and number of their referent. Some studies on accusative doubling clitics (this does not entail that the clitics under discussion are accusative-marked in all predicates but their status should be similar) claim that this clitic is simply an agreement marker and does not take a semantic role as that is exclusively

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[5]Very rarely, it can. In the following example, the logical subject of *ayuda* 'helps' is shared by the finite Type 3 verb *gustar* 'to like' in the second conjunct and the verb *hace* 'makes'. All three verbs take *una breve apostilla ...* as their logical subjects. In the second conjunct, we've got an example of the cause-NP in gustar predicates as the grammatical subject occurring in preverbal position. This coordinated example comes from http://www.uniovi.es/UniOvi/Apartados/Departamento/Psicologia/metodos/soft/corpus/base/E15

(13)   Una breve apostilla onomástica de vez en cuando   nos
          A small hint$_i$ onomastic   from now and then to us

              ayuda a retener   el nombre,
          pro$_i$ helps   to maintain the name,

          A small onomastic hint often helps to maintain identity,

          pro$_i$ gusta a nuestro interlocutor y
          it   likes   to our interlocutor   and

          pro$_i$ nos   hace   sentirnos seguros
          it   to us make feel-us   confident.

          our interlocutor likes the hint and it makes us feel confident

given to the coindexed referential full NP (Suñer, 1988). We feel that in some cases the clitic can occupy an argument position.

The semantic arguments introduced by the preposition *a* may fulfill the role of experiencer (as in Types 1, 2 and 3) or the role of cause (Type 5). Previous studies in Spanish differ in assigning a category or status to these particle *a*. Thus, Alarcos Llorach (1994) defends the view that *a* is a preposition whose exclusive function is to set a contrast between the nominal expressions that may represent the syntactic subject (which occurs without a preposition) and those taken as object (i.e., a nonpredicative, case marking preposition is present).[6] Thus, for Alarcos Llorach (1994) the *a* prepositional phrase retains a strict grammatical function regardless of the underlying thematic role the argument has. One cannot deny that the particle is a preposition but other work suggests that the preposition is like the nonpredicative (case-marking) preposition in English, thus making it possible to analyze "*a*-PPs" as dative NPs (see Fernández-Soriano, 1999), and therefore eligible to be grammatical subjects. We take it as evident in Type 3, Type 4 and Type 5 predicates that the experiencer is the logical subject, even if this does not coincide with convenient notions of grammatical subject.

3.2 What is the Subject?

Despite the apparent clarity of pretheoretic intuitions, there is not a clear analytic definition of "Subject" although there is a family of properties that contingently go along with being a subject (Keenan, 1975). We have already examined case assignment, cliticization and agreement. It is also interesting to note how these predicates interact with other phenomena—control, raising and binding—as, in general, subjects can be involved in these constructions (though perhaps not more oblique complements). However, not all of these are decisive. In Spanish, both subject and object relatives are as possible for psychological predicates as for any other, so the data there doesn't settle the issue (but see §3.2.7). Clefts and pseudoclefts in English prohibit long distance dependency involving subjects of embedded complementizer clauses.

(14) It is Chelo that Nuchi believes left.

(15) *It is Chelo that Nuchi believes that left.

Yet, this phenomenon doesn't occur in Spanish, which allows extraction of the subject under the complementizer (thus, the equivalent of (15) is grammatical in Spanish). Actually, in Spanish, the complementizer is obligatory (the equivalent of (14) is ungrammatical). No difference in extraction potential for either argument emerges when the clause embedded under a complementizer has a psychological predicate.

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[6]Hopper and Thompson (1980) suggest that these prepositions are strictly referential, regardless of grammatical role.

3.2.1   Control

In this section we examine the capacity for the cause-NP and experiencer-NP to be controlled complements. The motivation for doing this is the intuition that if any argument of a predicate can be a controlled complement of an embedding predicate, then at least its subject should be able to. In §3.2.3 we explore the special case of causative constructions.

The cause-NPs can only be the subject of control verbs and realize the participant role of wanter in Types 1 (see (16)), 2 (as in (17)) and 3 (18), exactly when the agreement controller in the base sentence also agrees with the control verb and realizes the semantic role of X-ER (e.g. wanter). In Types 2 and 3, the preferred sentences are the ones with the experiencer dative NP moved downstairs and no dative clitic at all as shown in (17.b) and (18). In Types 4 (19) and 5 (20), the cause-NP is coindexed with the control verb in order to check whether the cause-NP can ever fulfill the role of WANTER, and in both of those cases the sentence is ungrammatical. These sentences can be grammatical but as topicalizations of a control verb where the experiencer-NP is the WANTER (21).

(16)   Juan intentó alegrar   a toda su familia
       John tried   to cheer to all his family
       'John tried to cheer all his family '

(17)   a.   Jose quería   a sus hijos   aburrirles
            Jose wanted to his children to bore-DAT-CL
            'Jose wanted his sons to be bored by him '

       b.   Jose quería   aburrir a sus hijos
            Jose wanted to bore to his children
            'Jose wanted his sons to be bored by him '

(18)   Juan quiere gustar a sus hijos
       Juan wants to like to his children
       'Juan wants his children to like him '

(19)   * Con Mary   quiere Juan aburrirse
         With Mary$_{iwanter}$ wants$_i$ Juan aburrirse
         'Mary wants Juan to get bored by Mary'

(20)   * A Juan   quieren sus hijos   temer
         To Juan$_{wanter}$ want$_i$ his children$_i$ to fear
         'Juan wants his children to fear him '

(21)   A Juan quieren sus hijos   temer
       To Juan want$_i$ his children$_{iwanter}$ to fear
       'His children want to fear Juan'

As sentences (22–25.a) illustrate, experiencer-NPs in Types 1, 2 and 3 cannot realize the semantic role of wanter, since the NP triggering agreement on the control verb is the

downstairs embedded cause-NP. Example (23) is grammatical with a downstairs agreement controller and the experiencer to the left of the control verb; however, this sentence is a highly marked topicalization; similarly, sentences (25.b) and (25.c). In contrast, examples (26) and (27) illustrate that subject controllers and semantic X-ER participants can be realized by Type 4 and Type 5 experiencer-NPs. These show evidence that only those NPs triggering agreement on the embedded verb can at the same time be agreement controllers of the control verb. Note the sentences in (26) where both sentences are grammatical. The dative clitic may (see 26.a) occur in the same preverbal position as in base sentences or may not; in this case this clitic could be enclitic to the embedded verb, the clitic's governing head (see 26.b). The clitic preceding the control verb conveys more emphasis on the experiencer-NP as the logical subject and WANTER of the relation expressed by the embedded VP.

(22) * A sus hijos   quieren Juan divertir
      To his children$_{iwanter}$ want$_i$ Juan to amuse
      'His children want to be cheered by Juan'

(23) A sus hijos   quiere Juan   divertir
      To his children wants$_i$ Juan$_{iwanter}$ to amuse
      'His children want to be cheered by Juan'

(24) * A sus hijos   les   querían molestar John
      To his children$_{iwanter}$ dat-clitic wanted$_i$ to bother John
      'His children wanted to be bothered by John '

(25) a.   * A sus hijos   les   quieren gustar John
        To his children$_{iwanter}$ dat-clitic want$_i$ to like John
        'His children want to like John'

     b.   A sus hijos,   les   quiere gustar John
        To his children dat-clitic wants$_i$ to like John$_{iwanter}$
        'John wants his children to like him'

     c.   A sus hijos   quiere gustarles   John
        To his children wants$_i$ to like-dat-clitic John$_{iwanter}$
        'John wants his children to like him'

(26) a.   Juan   se   quiere divertir   con Mary
        Juan$_{iwanter}$ him wants$_i$ to amuse with Mary
        'Juan wants to be amused by Mary'

     b.   Juan   quiere divertirse   con Mary
        Juan$_{iwanter}$ wants$_i$ to amuse-him with Mary
        'Juan wants to be amused by Mary'

(27) Mary   quiere temer a John
      Mary$_{i\ wanter}$ wants$_i$ to fear to John
      'Mary wants to fear John'

The next possibility we consider is object of control of the cause-NP. We tried to find some control verbs subcategorizing for two NPs (a subject and an object) together with an embedded infinitival VP with the constraint that the embedded verb needed to be a psychological predicate. The control verb *querer* 'to want' does admit subject control embedded psychological predicates, but rejects every instance of object control expressions, whether object control of cause or object control of experiencer.[7] The cause-NP in the embedded psychological predicates is shared with the object position of the control verb and only one of the sentences in the group (29–33) is grammatical.

The cause-NP of an embedded Type 1 predicate may be the object of the control verb *animar* 'to encourage' as the sentence in (29) illustrates. In contrast, the sentences in (30–33), show that the cause-NP of the embedded Types 2, 3, 4 and 5 predicates cannot occupy the object position of an "*animar* control construction", precisely those verb types in which the cause-NP occurs in postverbal position in the finite form. Note that there are two examples of each of the Type 3 and 4 constructions. In the first variant the clitic occupies the same position it does in the finite form of the embedded sentence, and in the second the clitic is enclitic in the embedded nonfinite psychological predicate. Neither is grammatical.

(29) Yo animé   a Chelo a entristecer al público
      I$_i$ encouraged$_i$ Chelo to sadden   to-the audience
      'I encouraged Chelo to sadden the audience'

(30) * Jose   animó   a Mary   a sus hijos   aburrirles
      Jose$_{i\ encourager}$ encouraged$_i$ to Mary$_{bore}$ to his children$_{bored}$ to bore-dat-clitic
      'Jose encouraged Mary to bore his children'

(31) a. * Jose animó   a Mary a sus hijos   les   gustar
          Jose encouraged to Mary to his children dat-clitic like
          'Jose encouraged Mary to be liked by his children'

      b. * Jose animó   a Mary a sus hijos   gustarles
          Jose encouraged to Mary to his children like-dat-clitic
          'Jose encouraged Mary to be liked by his children'

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[7]In this case, expressions with *querer* 'to want' embed finite that-clauses in order to express the complex relation: "someone wants a second participant to do something/undergo some feeling." The following example illustrates one of the possible ways to express such relation:

(28)

      Yo quiero que a los niños   divierta   Chelo
      I   want   that to the children amuses-3sg-subjunct$_i$ Chel o$_i$
      'I want Chelo to amuse the children'

(32) a.   * Jose animó   con Mary sus hijos   se   aburrir
           Jose$_i$ encouraged$_i$ with Mary his children them to get bored
           'Jose encouraged his children to get bored with Mary '

      b.   * Jose animó   con Mary sus hijos   aburrirse
           Jose$_i$ encouraged$_i$ with Mary his children to get bored-them
           'Jose encouraged his children to get bored with Mary '

(33)   * Leo animó   a los leones John temer
        Leo encouraged to the lions John to fear
        'Leo encouraged the lions to be feared by John'

Experiencer-NPs cannot appear as the object of a control verb embedding a psychological verb either. We tested the control verbs *querer* 'to want' and *prometer* 'to promise' but both verbs in Spanish can only admit subject control, for example (34.a). Thus, we omitted the resulting lists of ungrammatical sentences that would have resulted. Instead, we will consider sentences headed by *animar* as in the previous case of cause-NPs. Sentence (34.b) proves that this verb does not admit experiencer-NPs as its object when the embedded verb is a Type 1 construction. Neither does it work for Type 2 (35) nor Type 3 (36), nor Type 5 (38). The experiencer-NP of a Type 4 construction is grammatical as the object of the control verb in (37).

(34) a.   Jose prometió a sus hijos   divertir   a Mary
           Jose promised to his children to amuse Mary
           'Jose promised his children to amuse Mary'

      b.   * Jose animó   a sus hijos   Mary divertir
           Jose encouraged to his children Mary to amuse
           'Jose encouraged his children to amuse Mary'

(35)   * Jose animó   a Leo a divertirle   sus hijos
        Jose encouraged to Leo to amuse-dat-clitic his children
        'Jose encouraged Leo to be amused by his children '

(36) a.   * John animó   a sus hijos   les   gustar Mary
           John encouraged to his children dat-clitic to like Mary
           'Jonh encouraged his children to like Mary'

      b.   * John animó   a sus hijos   gustarles   Mary
           John encouraged to his children to like-dat-clitic Mary
           'Jonh encouraged his children to like Mary'

(37)   Leo convenció a Jose   a reconfortarse   con unas pizzas
        Leo convinced to Jose$_i$ to get-soothed-dat-pron$_i$ with some pizzas
        'Leo convinced Jose to get soothed with some pizzas'

(38) * Leo animó   a Jose a odiar a esa pizza
        Leo encouraged to Jose to hate to this pizza
        'Leo encouraged Jose to hate this pizza'

In sum, the cause-NP can function as the subject of a control predicate exactly when it is the agreement controller in the embedded sentences (Type 1, Type 2 and Type 3). The experiencer-NP is similarly available to subject control exactly when it is the agreement controller in the finite form of the embedded sentence (Type 4 and Type 5). Thus, the property of being agreement controller is the most important to being available to subject control.

The cause-NP functions as the object of control only in the Type 1 predicates, that is, only when it is both agreement controller in the embedded sentence and the leftmost argument. The experiencer-NP is similarly restricted; however, here we found a difference for Type 4 and Type 5 predicates—only Type 4 predicates fit into object control. This is interesting given that both Type 4 and Type 5 predicates worked with causative objects (see §3.2.3).

3.2.2   Raising

In this section we examine the capacity for the cause-NP and experiencer-NP to be raised complements. The motivation, as with control, is the feeling that if any argument of a predicate can be raised, then at least its subject should be able to.

Cause-NPs may appear in the subject position of the raising verbs *parecer* 'to seem' and *creer* 'to believe' with embedded predicates belonging to Type 1, 2 and 3. Both raising verbs also admit embedded that-clauses, and in fact, one cannot underestimate the higher frequency of these structures in discourse, but our interest is with raising verbs, thus we will not consider that-clauses here. The agreement controller in base sentences of each of those types, the cause in each as well, may be felicitously raised to subject position (left of the raising verb) as shown in (39), (40.b), (41). With Type 2 predicates the linear order of base sentences needs to be changed when they are embedded under subject raising verbs. The clitic must be attached to its infinitival lexical head; thus, (40.a) is ungrammatical and (40.b) is acceptable, but marginal (speakers would easily prefer to use the related Type 1 construction with raising in such a context). If a Type 4 predicate is embedded under a raising verb, its cause-NP cannot fulfill the syntactic subject function to the raising verb as the sentences in (42) illustrate. Note that (42.b) is in fact grammatical; however, it is not an instance of raising. While it resembles raising configurations by some measures, it is actually an instance of topicalization (of the *Con Juan* phrase). Similarly, sentence in (43.b) is acceptable, although, the cause-NP is not the subject of the raising verb; this cause-NP is topicalized aiming to show a contrast and emphasize that "it's Juan the feared subject and not other possible candidates". (43.a) gives a case of a Type 5 predicate embedded under raising, with a fronted cause-NP, yet this is ungrammatical without a clitic that agrees with the cause-NP realized enclitic in the nonfinite verb.

(39) a.   Juan parece divertir   a sus hijos
        Juan seems to amuse to his children
        'Juan seems to amuse his children'

     b.   Juan cree   divertir   a sus hijos
        Juan believes to amuse to his children
        'Juan believes he amuses his children'

(40) a.   * Juan parece a sus hijos   les   aburrir
          Juan seems to his children dat-clitic to bore
          'Juan seems to bore his children'

     b.   Juan parece a sus hijos   aburrirles
        Juan seems to his children to bore-dat-clitic
        'Juan seems to bore his children'

(41) a.   Los niños   le   parecen gustar a Juan
        The children$_i$ him seem$_i$ to like To Juan
        'Juan seems to like children'

     b.   Los niños   parecen gustarle   a Juan
        The children$_i$ seem$_i$ to like-to him to Juan
        'Juan seems to like the children'

(42) a.   * Con Juan   parece aburrirse   los estudiantes
          With Juan$_i$ seem$_i$ to bore-them the students
          'Juan seems to bore the students'

     b.   Con Juan parecen aburrirse   los estudiantes
        With Juan seem$_i$ to bore-them the students$_i$
        'Juan seems to bore the students'

(43) a.   * A Juan   parece Mary temer
          To Juan$_i$ seems$_i$ Mary to fear
          Juan seems to be a source of fear to Mary

     b.   A Juan parece temerle   Mary
        To Juan seems$_i$ fo fear-him Mary$_i$
        Mary seems to fear Juan

Next, consider cases in which the grammatical subject of the raising verb is the experiencer-NP. The experiencer-NP has been forced to share agreement values with the raising verb in (44.a), (45.a) and (46.a) representative of Types 1, 2 and 3 psych predicates, respectively, with consequent ungrammaticality for each sentence. We can construct acceptable and grammatical sentences if the raising verb agrees with the cause-NP that is left downstairs as shown in sentences (44.b), (45.b) and (46.b). They are fine though we believe they are

more marked than their correspondent (c) variants.[8] Similarly, true subject raisers can only be realized by experiencer-NPs that are agreement controllers in Types 4 and 5 as the data in (47) and (48) demonstrate, where a 'true subject raiser' is one in which the constituent on the raising verb's left is also its agreement controller. Type 2 and Type 3 constructions admit raising to the left as well, we've seen, but the raised constituents do not control agreement (illustrating that 'subject' is a problematic notion in the case of raising verbs as well; see additional examples for English in §3.3.2). The relevant generalization for all the raising to subject examples given here is that the agreement controller of the raising verb is the agreement controller of the embedded verb, regardless of what is placed to the left of the raising verb.

(44) a. * (A) Juan parece divertir   los payasos
          To Juan$_i$ seems$_i$ to amuse the clowns
          'Juan seems to be amused by the clowns'

      b. A Juan parecen divertir   los payasos
          To Juan seems$_i$ to amuse the clowns$_i$
          'Juan seems to be amused by the clowns'

(45) a. * (A) Juan le   parece divertir   los payasos
          To Juan$_i$ dat-clitic seems$_i$ to amuse the clowns
          'Juan seems to be amused by the clowns'

      b. A Juan le   parecen divertir   los payasos
          To Juan dat-clitic seems$_i$ to amuse the clowns$_i$
          'Juan seems to be amused by the clowns'

      c. A Juan parecen divertirle   los payasos
          To Juan seem$_i$ to amuse-dat-clitic the clowns$_i$
          'Juan seems to be amused by the clowns'

(46) a. * A Juan   parece gustarle   los niños
          To Juan$_i$ seem$_i$ to like-to him the children
          'Juan seems to like the children '

      b. A Juan, le   parecen gustar los niños
          To Juan, to him seem$_i$ to like the children$_i$
          'Juan seems to like the children '

      c. A Juan parecen gustarle   los niños
          To Juan seem$_i$ to like-dat-clitic the children
          'Juan seems to like the children '

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[8]The distinction between the examples in (46.c) and the above sentences in (41) must be accounted for in terms of focus. It is assumed that sentence (41.b) emphasizes the fact that Juan likes children more than people in general (or it can be used to emphasize a contrast to the fact that Juan's sister hates children).

(47) Juan parece aburrirse   con la pizza
      Juan$_i$ seems$_i$ to get bored-him with the pizza
      'Juan seems to get bored with the pizza'

(48) Juan parece temer a los terremotos
      Juan$_i$ seems$_i$ to fear to the earthquakes
      'Juan seems to fear the earthquakes'

Now consider cases in which the object of a raising is a cause-NP. A Type 1 predicate embedded under raising allows its cause-NP to be shared with the object position of the raising verb *obligar* 'to oblige' as illustrated in (49). Although we cannot tell the agreement of the cause-NP in the raising structure because it doesn't control agreement on the raising verb, this NP refers to the individual who is required to cause amusement on the experiencer-NP and this is acceptable (presumably because the linear constituent ordering resembles the base sentences in Type 1, and this seems to be the unique reason for speakers to accept the sentence). An emerging problem in interpreting this sentence concerns the antecedent of the anaphoric pronoun *sus* 'his/her'; it is ambiguous who the parent is, Kim or Leslie. To avoid emerging ambiguity speakers often make use of finite that-clauses embedded under these verbs. In the sentences (50) and (51), the raising heads cannot admit Type 2 nor Type 3 predicates. The raising verb *requiere* subcategorizes either for two NPs (subject and object) or a finite that-clause that would be construed as the base sentences in §3. In (52) the cause-NP of the embedded Type 4 predicate cannot be raised to object position of the raising verb. Finally, both of the Type 5 examples in (53) are completely ungrammatical; in the first, the cause-NP occupies the object position of the raising verb and the remaining constituents retain their canonical Type 5 order, and in the second, the experiencer is moved to a position after the nonfinite verb, in case a total word order variation would create grammaticality, but it does not.

(49) Leslie obliga a Kim a divertir a sus hijos
      Leslie obliges to Kim to amuse to her children
      'Leslie obliges Kim to amuse her children '

(50) * Kim exige   a su jefe   divertirles   a sus hijos
        Kim demands from his boss to amuse-to them$_i$ to his children$_i$
        'Kim demands from his bosses to amuse his children '

(51) a.   * Peter requiere a Leslie a sus hijos   gustarles
             Peter requires to Leslie to his children to like-dat-clitic
             'Peter requires Leslie to be liked by his children '

      b.   * Peter requiere a Leslie gustarles   a sus hijos
             Peter requires to Leslie to like-dat-clitic to his children
             'Peter requires Leslie to be liked by his children '

(52) * Leo exige   con ella sus hijos   divertirse
      Leo requires with her her children to get amused
      'Leo requires her children to get amused with her'

(53) a.   * Jose obliga a Bill los niños   temer
           Jose obliges to Bill the children to fear
           'Jose obliges Bill to be a source of fear to the children'

      b.   * Jose obliga a Bill temerles   los niños
           Jose obliges to Bill to fear-to-them the children
           'Jose obliges Bill to be a source of fear to the children'

Finally, this leaves consideration of experiencer-NPs as object of raising. None of the five predicate types are clearly acceptable in this structure. The experiencer agreement controller in Type 4 and type 5 constructions are the only ones, and are marginal in allowing the experiencer to be object of a raising verbs such as: *obligar* 'to oblige' or *requerir* 'to require' illustrated in (57.a), (57.b) and (58).

(54) a.   * Leslie obliga a sus hijos   Kim   divertir
           Leslie obliges to her children$_{amused}$ Kim$_{amuser}$ to amuse
           'Leslie obliges her children to be amused by Kim'

      b.   * Leslie obliga a sus hijos   divertir Kim
           Leslie obliges to her children to amuse Kim
           'Leslie obliges her children to be amused by Kim'

(55) * Jose obliga a sus invitados les   divertir sus fiestas
      Jose obliges to his guests   to them to amuse his parties
      'Jose obliges his guests to be amused by his parties'

(56) a.   * Leslie exige   a sus hijos   gustarles   ella
           Leslie requires to her children to like-to-them her
           'Leslie requires her children to like her'

      b.   * A sus hijos,   Leslie les   obliga   gustar ella
           To her children, Leslie to-them requires to like she
           'Leslie requires her children to like her'

(57) a.   Jose obliga a Leslie a aburrirse   con sus poemas
           Jose obliges to Leslie to-get-bored-her with his poems
           'Jose obliges Leslie to get bored with his poems'

      b.   Jose exige   a sus invitados aburrirse   en las fiestas de sus amigos
           Jose requires to his guests   to get-bored-them in the parties of his f riends
           'Jose requires his guests to get bored at his friend's parties'

(58) Jose exige   a los niños   temer a Leslie
       Jose requires to the children to fear to Leslie
       'Jose requires the children to fear Leslie'

To recapitulate, we found that the experiencer could raise to subject in all of the construction types, although the agreement controller in those cases remains the unraised cause-NP in Type 2 and Type 3. Cause-NP can raise to subject in each case but Type 4 and 5 (unless it forms a topicalization).

Only the cause-NP of Type 1 constructions and only the experiencer-NP in Types 4 and 5 constructions can raise to object. That is, raising to object requires the object to be the leftmost constituent and agreement controller in the finite form of the embedded predicate.

3.2.3 Causatives

Cause-NP as agent of MAKE The behavior of the cause-NPs as logical subjects of the causative verb *hacer* 'to make' provides relevant data in two respects: first, the semantic nature of the psychological predicates and even the denotation of the cause-NPs themselves; second, their syntactic properties.

The sentences in (59) illustrate that Type 1 verbs, surprisingly, do not admit embedding when the cause-NP is the agent of the causative verb. The grammaticality of this sentence may be subject to debate, though we will come back to this issue below.

(59) a.   * El trabajo hizo   preocupar a Jose aún más
              The work$_i$ made$_i$ worry   to Jose even more
              'The work made Jose worry even more'

     b.   * La música hizo   alegrar a los pasajeros
              The music$_i$ made$_i$ to cheer to the passengers
              'The music made the passengers cheer'

Type 2 verbs cannot be embedded under the causative verb *hacer* 'to make' either; inside the embedded VP, the degree of acceptability does not improve whether the dative NP and clitic precede the psychological verb (as in (60.a)), the dative clitic is attached to its infinitive head (60.b), or the clitic precedes the finite causative verb as illustrated in (60.c). In example (60.c), a doubling clitic is added.

(60) a.   * El trabajo hizo   a Jose le   preocupar aún más
              The work$_i$ made$_i$ to Jose Dat-cl worry   even more
              'The work made Jose worry even more'

     b.   * El trabajo hizo   a Jose preocuparle aún más
              The work$_i$ made$_i$ to Jose worry-Dat-cl even more
              'The work made Jose worry even more'

    c.   * El trabajo le   hizo   a Jose preocupar aún más
             The work$_i$ Dat-cl made$_i$ to Jose to worry   even more
             'The work made Jose worry even more'

In (61), neither animate cause-NPs (see (61.a)) nor inanimate cause NPs (as in (61.b) and (61.c)) may realize the agent of the causative construction in Type 3 verbs. Given the fact that a dative clitic cannot precede its infinitival head,[9] alternative sentences in which the clitic is moved to the front of the causative verb have been taken into account though the sentences result in ungrammaticality. It seems reasonable to think that *la tarta* 'the pie' (an inanimate) cannot force somebody to perform a physical action but it could possibly encourage somebody to undergo a state (like fancying); the ungrammaticality of the examples rule out this option.

(61) a.   * La enfermera hizo   a Juan le   gustar aún más
            The nurse$_i$ made$_i$ to Juan Dat-cl like   even more
            'The nurse made Juan like her even more'

     b.   * La tarta hizo   a Juan le   apetecer aún más
            The pie$_i$ made$_i$ to Juan Dat-cl fancy   even more
            'The pie made Juan to fancy it even more'

     c.   * La tarta le   hizo   a Juan apetecer aún más
            The pie$_i$ Dat-cl made$_i$ to Juan fancy   even more
            'The pie made Juan to fancy it even more'

Sentences in (62) show the only type of psychological verbs that admit embedding under a causative verb when the cause-NP (remember that the cause-NP is optional in a Type 4 structure); here the preposition in the cause has been removed[10] to become agent or logical subject of the causative verb. All three variants are syntactically well formed, and they are also ordered regarding the degree of naturalness (the (62.c) variant is the most preferred).

(62) a.   (*Con) su hermana hizo   a Juan preocuparse
            (*With) His sister$_i$ made$_i$ to Juan worry-self
            'His sister made Juan worry'

     b.   (*Con) su hermana le   hizo   a Juan preocuparse
            (*With) His sister$_i$ Dat-cl made$_i$ to Juan worry-self
            'His sister made Juan worry about her '

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[9]Leaving out imperatives, the location of dative and accusative clitics may be summarized as follows: firstly, in base finite sentences the clitic occurs immediately before the head the clitic is an argument to; secondly, the clitic may be moved to the front of the raising or control verb in those cases in which the clitic's head is embedded under raising or control; finally, clitics appear enclitic in their head verb in non-finite VPs.

[10]If the preposition is present the sentence is ungrammatical as the parenthesized * indicates.

    c.   (*Con) su hermana le   hizo   preocuparse a Juan
          (*With) His sister$_i$ Dat-cl made$_i$ worry-self   to Juan
          'His sister made Juan worry'

Though the preposition has been dropped, the cause-NP in (63) cannot be the agent of a causative construction embedding a Type 5 psychological predicate. The embedded infinitive verb has an enclitic accusative pronoun co-referential with the cause-NP (agent of the causative verb) and this enclitic makes the sentence syntactically well-formed but the semantics is deviant. This weirdness may be clearer in the sentences in (64). The cause-NP *La inteligencia de sus alumnos* "the intelligence of his students" functions as the agent of the causative predicate *hacer* "to make" but this cause-NP does not coincide with the entity causing a feeling of admiration on *Juan* (the experiencer), thus the ungrammaticality of (64.a). This sentence would be grammatically correct if the meaning denoted were that "the experiencer-NP feels delight about the individuals (*sus alumnos* "his students") who possess the property of "being intelligent" as suggested by the indices shared between *sus alumnos* and the accusative clitic (whose antecedent is *sus alumnos*) attached to the psychological verb in the embedded VP in (64.b). Though this argument might sound awkward for non-native speakers, Grimshaw (1990) offers a neat explanation why that happens.

(63) * (*A) Las brujas   hicieron a mi prima   temerlas
       (*To)The witches$_i$ made$_i$ to my cousin to fear-Acc-cl$_i$
       'The witches made my cousin fear'

(64) a.   * La inteligencia de sus alumnos le   hizo   a Juan admirarla
           The intelligence$_i$ of his students Dat-cl made$_j$ to Juan to admire-Acc-cl$_i$
           'The intelligence of his students caused Juan to admire them'

      b.   La inteligencia de sus alumnos (le)   hizo   a Juan admirarlos
           The intelligence$_i$ of his students$_j$ Dat-cl made$_j$ to Juan to admire-Acc-cl$_j$
           'The intelligence of his students caused Juan to admire them'

Note the behavior of an agentive verb embedded in a causative construction in (65) where the *helper su hijo* (his son) in the base sentence realizes the causee of the causative verb *hacer* 'to make'. The causee may occur before its verbal head (65.a) or it may follow the agentive verb (65.b).

(65) a.   Juan hizo   a su hijo ayudar (en los preparativos de la fiesta)
           Juan$_i$ made$_i$ to his son to help (with the arrangements for the party)
           'Juan made his son help (with the arrangements of the party)'

      b.   Juan hizo   ayudar a su hijo (en los preparativos de la fiesta)
           Juan$_i$ made$_i$ to help to his son (with the arrangements for the party)
           'Juan made his son help (with the arrangements of the party)'

Experiencer-NP as AGENT of MAKE   Sentences (66–70) provide evidence that experiencer-NPs cannot fulfill the agent argument of the causative 'to make' in Spanish. If the experiencer NP keeps the preposition *a*, this constituent cannot occur as the agent and/or agreement controller of the causative verb *hacer*; thus, the reason for the insertion of the parentheses around this particle in sentences (66–68) and (70). In sum, since the experiencer behaves as the individual affected by the action of the psychological verb, this cannot act as agent of the causative verb and experiencer of the embedded verb simultaneously.

(66)   * (A) Jose hizo   el trabajo preocupar aún más
        To Jose$_i$ made$_i$ the work to worry   even more
        '* Jose made the work worry even more'

(67)   * (A) Jose le   hizo   el trabajo preocupar aún más
        To Jose$_i$ Dat-cl made$_i$ the work to worry   even more
        'To Jose made the work worry even more'

(68)   * (A) Juan le   hizo   gustar la enfermera   aún más
        To Juan$_i$ Dat-cl made$_i$ like   the nurse even more
        'To Juan made like the nurse even more'

(69)   * Juan hizo   preocuparse por su hermana aún más
        Juan$_i$ made$_i$ worry-self   about his sister even more
        'To Juan made worry about his sister even more'

(70)   * (A) mi prima hizo   temer a las brujas   aún más
        To my cousin$_i$ made$_i$ fear   to the witches even more
        'To my cousin made fear witches even more'

In (71), a related sentence with an embedded agentive verb is syntactically well-formed but the agent continues to be the same as in the sentences in (65).

(71)   A su hijo   hizo   Juan   ayudar
        To his son made$_i$ Juan$_{i\,Agent}$ to help
        'Juan made his son help'

Cause-NP object of causative verb   Among the sentences in (72–76), Type 1 predicates offer the only potential cause-NPs as the causees of the *hacer* 'to make' construction. The sentence in (72.b) is less marginal than the sentence (72.a) because of the addition of a doubling clitic in preverbal position and this is co-referential with the causee NP. This structure could be well-formed because the causee argument of the causative verb (in our case *hacer* 'to make') and the arguments of the base predicate are in the same domain (Ackerman & Moore, 1998, p.16).

(72)   a.   ? El jefe   hizo   al encargado   preocupar a los empleados
             The boss$_i$ made$_i$ to-the manager to worry   to the employees
             'The boss made the manager worry the employees'

      b.   ? El jefe   le   hizo   al encargado   preocupar a los empleados
             The boss$_i$ Dat-cl$_j$ made$_i$ to-the manager$_j$ to worry   to the employees
             'The boss made the manager worry the employees'

(73)   a.   * El jefe   hizo   al encargado   a los empleados   les   preocupar
             The boss$_i$ made$_i$ to-the manager to the employees Dat-cl worry
             'The boss made the manager worry the employees'

      b.   * El jefe   le   hizo   al encargado   a los empleados   preocuparles
             The boss$_i$ Dat-cl$_j$ made$_i$ to-the manager$_j$ to the employees$_k$ worry-Dat-cl$_k$
             'The boss made the manager the employees worry'

(74)   a.   * La morfina   hizo   a la enfermera a Juan   le   gustar
             The morphine$_i$ made$_i$ to the nurse   to Juan$_j$ Dat-cl$_j$ like
             'The morphine made Juan like the nurse'

      b.   * La morfina   le   hizo   a la enfermera gustarle   a Juan
             The morphine$_i$ Dat-cl$_j$ made$_i$ to the nurse$_j$ like-Dat-cl$_k$ to Juan$_k$
             'The morphine made Juan like the nurse'

      c.   * La morfina   le   hizo   a Juan   gustar la enfermera
             The morphine$_i$ Dat-cl$_j$ made$_i$ to the nurse like   to Juan$_j$
             'The morphine made Juan like the nurse'

(75)   a.   * Su hermana hizo   con la entrevista   preocuparse   a Juan
             His sister$_i$ made$_i$ with the interview to-get-worried to Juan
             'His sister made with the interview Juan to worry

      b.   * Su hermana le   hizo   con la entrevista   preocuparse   a Juan
             His sister$_i$ Dat-cl made$_i$ with the interview to-get-worried to Juan
             'His sister made Juan worry with the interview'

(76)   a.   * Esas historias hacen a las brujas   mi prima   temer
             These stories$_i$ make$_i$ to the witches my cousin to fear
             'These stories make my cousin to fear the witches'

      b.   * Esas historias le   hacen a las brujas   mi prima   temer
             Those stories   Dat-cl make   to the witches my cousin to fear
             'Those stories make my cousin fear the witches'

     Sentence (77) shows that the cause-NP of an agentive verb (the agreement controller NP) embedded under the causative *hacer* can also be object or causee of the causative verb, similarly to Type 1 cause-NPs.

(77) El padre   le   hizo   a su hijo ayudar a Juan
     The father$_i$ Dat-cl made$_i$ to his son to help to Juan
     'The father made his son to help Juan'

Experiencer-NP object of causative verb   What is the behavior of experiencer-NPs of psychological verbs when these are forced to occur as causee of the causative verb *hacer* 'to make'? Note that different alternations of the constituents do not improve the ungrammaticality of embedded Types 1, 2 and 3 predicates in (78), (79) and (80), respectively; none of the Type 1, 2 nor 3 experiencer-NPs can be realized as the causee. In contrast, experiencers of Types 4 (81) and 5 (82) psychological predicates are allowed as causees and they behave as the logical subject of the embedded predicates at the same time.

(78) * El jefe   hizo   a los empleados el encargado preocupar
       The boss$_i$ made$_i$ to the employees the manager to worry
       'The boss made the manager worry worry the employees'

(79) * El jefe   hizo   a los empleados les   el encargado preocupar
       The boss$_i$ made$_i$ to the employees Dat-cl the manager to worry
       'The boss made to the employees the manager worry '

(80) a.   * La morfina   hizo   a Juan   le   la enfermera gustar
            The morphine$_i$ made$_i$ to Juan$_j$ Dat-cl$_j$ to the nurse like
            'The morphine made Juan like the nurse'

     b.   * La morfina   le   hizo   a Juan   gustar la enfermera
            The morphine$_i$ Dat-cl$_j$ made$_i$ to Juan$_j$ like   to the nurse
            'The morphine made Juan like the nurse'

     c.   * La morfina   hizo   a Juan   la enfermera gustarle
            The morphine$_i$ made$_i$ to Juan$_j$ to the nurse like-Dat-cl$_j$
            'The morphine made Juan like the nurse'

(81) ? Su hermana le   hizo   a Juan preocuparse   con la entrevista
       His sister$_i$ Dat-cl made$_i$ to Juan to-get-worried with the interview
       'His sister made Juan worry with the interview'

(82) a.   ? Esas historias hicieron a mi prima   temer a las brujas   aún más
            Those stories made   to my cousin fear   to the witches even more
            'This caused that my cousin feared witches even more'

     b.   Esas historias hicieron a mi prima   temerles   a las brujas   aún más
          Those stories made   to my cousin fear-Dat-Cl to the witches even more
          'This caused that my cousin feared witches even more'

     c.   La morfina   le   hizo   a Juan   odiar   a la enfermera
          The morphine$_i$ Dat-cl$_j$ made$_i$ to Juan$_j$ to hate to the nurse
          'The morphine made Juan to hate the nurse'

The experiencer (e.g. the person being helped) of an agentive VP cannot occur as object of the causative verb *hacer* as sentence (83) illustrates. The sentence does not become acceptable by adding the doubling dative clitic co-referential with the object *a Juan* (the experiencer and non-agreement controller of the agentive verb).

(83) * El padre   (le)   hizo   a Juan   ayudar su hijo
      The father$_i$ (Dat-cl$_j$) made$_i$ to Juan$_j$ to help his son
      'The father Juan to be helped by his son'

Clear causative predicates are somewhat difficult to classify between object control and object raising, if we take the distinction to be in semantics—whether the object of the embedding verb fills a semantic argument in the verb or not (equivalently, whether the verb is a two place relation or a three place relation). It is difficult to say absolutely that the causatives are one or the other since they have two place and three place uses.

With respect to object-of-causative control, the only psychological construction types that can be embedded with the experiencer from the predicate behaving as the cause from the causative are Types 4 and 5. Recall that in those types the experiencer is both initial in the clause, and the agreement controller. Agentive predicates do not fall into this category (note that in the agentive predicate the experiencer is neither initial nor agreement controller). The cause from the psychological predicate can be shared with the cause in the causative verb in exactly those cases in which the cause is clause initial and agreement controller: Type 1 and agentive predicates. With subject control, the experiencer cannot be shared between the embedded predicate and the subject of the causative for any of the constructions. The cause from the psychological predicate (or agent from the agentive), on the other hand, can serve as the subject of causation, again, in exactly those cases for which the cause is clause initial and agreement controller (Type 1 and agentives). Thus the relevant properties that determine capacity for causatives to embed the psychological predicates seems to be whether the leftmost element in the clause is the agreement controller in the finite form of the embedded sentence.

3.2.4 Binding

Binding of reflexive and nonreflexive pronouns is also interesting to the question of grammatical relations for these predicates, since one would expect the subject to be able to bind a more oblique reflexive pronoun but not an object to bind a subject.

Throughout the 5 different patterns the scheme summarizing the insertion of reflexive pronouns is:

- np$_{nominative}$ Reflexive pronoun VB (a_{prep} Reflexive pron *mismo/a/os/as*)

In Spanish, reflexives can be expressed by a morphological reflexive which may appear either as an independent word in preverbal position (only on finite verbs) or as a suffix attached to the infinitive conveying the relation between a X-ER participant and itself. This reflexive shares its referent with the logical subject of the main verb. Frequently,

transitive verbs see their semantic valence decreased to one by the addition of the reflexive pronoun *se* as a realization of the initially-second semantic participant. Consider examples (84) and (85.a); both correspond to Type 1 predicates that take a cause-NP triggering agreement on the finite verb. The experiencer-NP in the transitive predicate in (84) has been replaced by the reflexive pronoun *se* in (85.a). The reflexive pronoun is allowed to occur only in preverbal position (finite verb) provided that the reflexive's antecedent (the cause-NP in this specific type of predicates) appears earlier on in the sentence, satisfying usual constraints on binding of reflexives. Sentence (85.a) may also express the meaning that "John enjoyed himself by means of a external cause". To emphasize that John is the cause-NP and also the experiencer-NP, we may find sentences like 85(b) which in addition to the preverbal morphological reflexive pronoun insert an analytical reflexive *a si mismo* 'to himself' agreeing with the logical subject and, therefore agreeing with the previous reflexive as well.

(84) John divirtió   a su familia
      John amused-3sg to his family
      John amused his family

(85) a.   John se   divirtió
           John$_i$ himself$_i$ amused
           'John amused himself'

      b.   John se   divirtió a sí mismo
           John$_i$ himself$_i$ amused to him$_i$ self
           'John amused himself'

(86) A mí me   aburro   yo misma
      To me myself bore-1sg I self
      'I bore myself'

(87) Los payasos se   gustan ellos mismos
      The clowns$_i$ themselves$_i$ like-3pl they$_i$ selves
      'The clowns like themselves'

(88) Yo me   divierto   conmigo misma
      I$_i$ myself$_i$ amuse-1sg with-me$_i$ self
      'I amuse myself'

(89) Jose se   entristeció consigo mismo
      Jose$_i$ himself$_i$ saddened   with-him self
      'Jose saddened himself '

(90) a.   Jose se   teme   a sí mismo
           Jose$_i$ himself fears-3sg to him$_i$ self
           'Jose fears himself'

    b.   Yo me   temo   a mí mismo
           Yo_i myself fear-1sg to me_i self
           'I fear myself'

In all 5 of the predicate types the reflexive coindexed with the cause-NP will always have to occur in preverbal position with its antecedent to its left. In (86) we have a Type 2 sentence with a reflexive pronoun for cause; in (87) a Type 3 sentence with a cause reflexive; in (88) a Type 4 sentence with a first person cause reflexive; in (89) a Type 4 construction with a third person cause reflexive; in (90) Type 5 constructions cause reflexives varying with person. In all of these cases, the result of reflexivizing the constituent which in the basic sentence structure is postverbal, we end up with a preverbal clitic agreeing with the leftmost constituent. Of course, it then becomes impossible to identify which constituent controls agreement on the verb, because of the semantics of reflexivization. Thus, the reflexive forms all look like the same basic sentence structure. An interesting point to notice is that the Type 3 experiencer can bind the reflexive: if reflexives avoid nonsubject antecedents, this is a puzzle for theorists who assume these predicates to be subjectless (e.g Belletti & Rizzi, 1988).[11]

Additionally, for each of the sentence types, the preverbal constituent in the base sentence cannot grammatically be replaced by a reflexive pronoun. Instead, the antecedent has to be fronted, in some sort of topicalization. Examples (91–96) demonstrate this for each of the five types of predicates.

(91) a.   * Se   divirtió a John
           $Himself_i$ amused to $John_i$
           '* Himself amused John'

      b.   John se   divirtió (a sí mismo)
           John himself amused to him self
           'John amused himself'

(92) a.   A sí mismo, se   divirtió John
           To him self, himself amused John
           'To himself, he amused '

      b.   * A mí misma, me   molesté yo
           To my self   myself bothered I
           I bothered myself

(93) a.   * A él mismo gusta John
           To him self likes John
           'John likes himself'

---

[11]It will become clear that we do not find 'reflexives avoid nonsubject antecedents' to be the correct formulation of binding theory for reflexives.

b. A él mismo se   gusta John
   To him self himself likes John
   'John likes himself'

(94) a. * Él mismo se   aburrió   con John
         He$_i$ self   himself got-bored with John$_j$
         'John got bored with himself'

   b. John se   aburrió   consigo mismo
      John$_i$ himself$_i$ got-bored with him$_i$ self
      'John got bored with himself'

(95) Se   temía a John
     Himself$_j$ feared to John$_i$
     'John was feared '

(96) John se   temía
     John$_j$ himself$_j$ feared
     'John was feared '

The example (95) seems to be an exception, but note that its antecedent is not John—it could mean that a group of people feared the presence of John or the possibility that John would come into the scene or place where the people are.

The binding data mitigates findings from earlier tests which illustrate that the dative experiencer does not behave like a syntactic subject. In overview of the facts of binding of reflexives, we observe the following: the grammatical relation is unimportant to the availability of an antecedent to a reflexive; what is important is simply the location of the antecedent, which must be to the left of the reflexive particle. When non-reflexive pronouns are used, their antecedent cannot be a sister within the sentence. When such pronouns are used with sisters as antecedents, they are interpreted as reflexives.

3.2.5 Passivization

Passivization is generally used by linguists in order to find out the degree of transitivity of predicates; it thereby also reveals whether a predicate has an 'ordinary' subject. Through passivization a postverbal NP in object position in the active form gets promoted to preverbal or canonical subject position in the related passive sentence.

Type 1 (as the one in (97)) verbs may **marginally** have their experiencer-NP moved to preverbal position in the related passive sentence while the cause-NP is introduced by the preposition *por* 'by'. Speakers admit that this passive sentence is acceptable, but when they are asked to passivize a Type 1 or Type 2 predicate, they generally produce a Type 4 construction like the one in (98). The question that resultingly arises is whether sentences headed by Type 1 and Type 2 verbs lack passive counterparts because of the semantic or configurational nature of these predicates or because Type 4 predicates (known in the literature as inchoative predicates) are actually their passivized versions.

(97) ? Juan fue   enojado por tu comentario
Juan*ᵢ* was*ᵢ* annoyed by your remark
'Juan was annoyed by your remark'

(98) Juan se   enojó   con/por su comentario
Juan pron annoyed with/by his remark
'Juan got annoyed by his remark'

Type 3 verbs lack a passive counterpart: neither the cause NP (Agreement controller) nor the dative experiencer-NP may be realized as logical subject of a related passive sentence (see the ungrammatical sentences in (99) and (100)).

(99) * Unas vacaciones son apetecidas por Juan
Some holidays   are fancied   by Juan
'A holiday is fancied by Juan'

(100) * Juan es apetecido por unas vacaciones
Juan is fancied   by some holidays
*'Juan is fancied by some holidays'

Grimshaw (1990) and Belletti and Rizzi (1988) claim that these verbs do not admit passivization because they lack an external argument. Following Tsunoda's (1985) remarks on transitivity, a lack of volitionality and agency denoted by these predicates may be the factor that blocks passivization. In type 3 verbs, the experiencer does not express volition to enter a state of liking, fancying, minding, etc., but instead, this individual (the one denoted by the experiencer-NP) is already in such a state. These two features: lack of volitionality and lack of agency are, according to Tsunoda (1985, p. 394) a potential explanation why these predicates tend to adopt a non-transitive case frame DAT-NOM.

Although we cannot still provide a clear account for the reasons, other than those noted above, that Type 4 predications already seems to be in a passive form, we'll just observe that Type 4 verbs do not passivize further.

Finally, the active cause-NP constituent of type 5 verbs is legally promoted to subject of passive related sentences in (101):

(101) Los accidentes de moto   son temidos por Juan
The accidents of motorbike are feared   by Juan
'The motorbike accidents are feared by Juan'

3.2.6   Nominalization

Fernández-Soriano (1999) analyzes a class of sentences in Spanish that do not involve psychological predicates but which she argues to have subjects analogously quirky to that of the psychological predicates. These are impersonal constructions: existential assertions (*there is...*), occurrence assertions (*it happened...*), weather verbs (*it's snowing...*) and

possession verbs (*it lacks...*). We will discuss these constructions in further detail in §3.3.1. Here we examine the nominalization data used by Fernández-Soriano (1999) to argue that locative and dative constituents function as (non-nominative) subjects in the impersonal constructions. However, we apply the arguments to the psychological predicates.

Fernández-Soriano (1999) offers the generalization in Spanish nominalizations that subjects and direct objects from the base sentence are both preceded by the preposition *de* (of), while datives and adjuncts from the base sentence retain the case assigned in the base sentence. For example, she provides the examples (104) and (105) derived from the base sentences (102) and (103), respectively.

(102) América fue descubierta en 1492
      America was discovered   in 1492
      'America was discovered in 1492'

(103) Se   dieron   premios a los ganadores
      Refl-pass-morpheme gave-3rd-pl prizes   to the winners
      'Prizes were given to the winners'

(104) el descumbrimiento de América en 1492
      the discovery   of America in 1492
      'America was discovered in 1492'

(105) la entrega de premios a los ganadores
      the gift   of prizes   to the winners
      'the gift of prizes to the winners'

As claimed, the subject of the original is embedded under the preposition *de* and the adjunct and dative retain their original markings in the nominalizations.

Additionally (106) shows that her claim about structural case for subjects and direct objects holds.

(106) a.   Juan compró un coche
            Juan bought a car
            'Juan bought a car'

      b.   la compra de un coche de Juan
            the buying of a car   of Juan
            'the buying of a car by Juan'

      c.   ? la compra de Juan de un coche
              the buying of Juan of a car
              'the buying by Juan of a car'

Note that the base sentence (106.a) involves ordinary nominative case on the subject and accusative on the direct object. The nominalization (106.b) demonstrates that both

arguments from the base sentence are indeed realized with a preceding *de*.[12] The alternative ordering of the arguments in the nominalization (106.c) is awkward.

However, the generalization does not seem to hold for nominalizations of psychological predicates. In (107.a) we have the base case of a Type 1 predicate. Example (107.b) shows that the nominalized form following the generalization of Fernández-Soriano (1999) is ungrammatical. Rather, (107.c) is the correct nominalization. The experiencer is always introduced by *de* even though it does not count as the subject, nor is it accusative, but dative in the base sentence.[13] It seems that nominalizations of psychological predicates express a state 'owned' by the experiencer, therefore introduced by *de* which in a sense indicates the possesor of the state. This also explains why, in general, the other argument in the nominalization, the cause of the state, is not introduced by a bare *de* but is instead embedded under another preposition.

(107) a. El sermón   aburrió a Juan
          The sermon-Nom$_i$ bored$_i$ Juan-Dat
          'The (dull) sermon bored Juan'

     b. * el aburrimiento a Juan de el sermón
           the boredom   of Juan with/due to the sermon
           'the boredom of Juan due to the (dull) sermon'

     c. el aburrimiento de Juan con/debido al sermón
          the boredom   of Juan with/due to-the sermon
          'the boredom of Juan due to the (dull) sermon'

We consider nominalizations of the other types of predicates. However, nominalizations of Type 2 and Type 4 predicates coincide with Type 1 nominalizations (all are derived from the same lexical stems, but we insist that they form distinct predication classes, as Type 3 predicates, structurally similar to Type 2 predications, lack both Type 3 and Type 4 correlates). This leaves Type 3 and Type 5 nominalizations to address.

For Type 3 verbs, the canonical nominalization pattern is given in (108).

(108) a. A Julia le   gustan los bombones
          To Julia her like$_i$ the chocolates$_i$
          Julia likes the chocolates

     b. El gusto de Julia por los bombones
          The like of Julia for the chocolates
          Julia's like of chocolates

     c. * El gusto de los bombones a Julia
            The like of the chocolates to Julia
            Julia's like of chocolates

---

[12]If the car had been definite then the nominalization would be ambiguous between the provided translation and 'the buying of Juan's car (perhaps by someone other than Juan)'.

[13]Recall though, that for some Type 1-Type 2 predicates, the experiencer may in fact be realized as an inherent accusative rather than as a dative.

Example (108.a) provides the base sentence, and (108.b) shows its nominalization. Observations relevant to the prediction of Fernández-Soriano (1999) are as follows: the nominative case agreement controller from the base sentence is not realized with *de* ('of') but with *por* ('for'); the dative case experiencer from the base sentence is realized with the preposition *de* and without dative marking. Example (108.c) shows that the prediction made by Fernández-Soriano's (1999) generalization results in ungrammaticality—if the NP *los bombones* triggering verb agreement were the subject of the sentence, it would be expected that in the nominalization of that VP, this cause NP would have been introduced by the preposition *de*, though this doesn't hold in this example. Moreover, the experiencer cannot retain its dative case in the nominalization.

The Type 5 predicates (which are more or less canonical with respect to the location of experiencer and agreement controller in the base form as in (109.a)) are the only psychological predicates which follow the generalization, as (109.b) illustrates.

(109) a.   Juan   teme a las inundaciones
           Juan-Nom$_i$ fears$_i$ to the floods
           Juan fears floods

      b.   el temor de Juan a las inundaciones
           the fear of Juan to the floods
           Juan's fear of floods

If one takes the generalization to be correct (and if one believes in the value of 'subject' as a theoretical concept), then the nominalization data for psychologial predicates argue that the experiencer is a subject (or direct object) in each of the types of psychological predicates. Applying the Type 5 results to the other cases would rule out the possibility that the experiencer-NP is a direct objects in the other predicate types.

3.2.7   Other Derived Verbal and Deverbal Forms

So far we have considered passivization and nominalization of psychological predicates to examine how related forms of the same stems behave with respect to their case assignment to arguments and the status of the agreement controller. We found that passivization was possible only for Type 5 predicates, in which the cause-NP is eligible to promote to subject. Nominalization data in the last section showed that for all of the predicate types, the experiencer-NP behaved as one would expect a subject to. In this section we examine a range of other derived forms (e.g. adjectival passives and relative clauses), to determine how the Spanish psychological predicates behave in these contexts relative to standard transitive verbs.

Below we present a range of examples for the psychological predicates paired with an agentive counterpart. In each case we present Type 3 predicates first, followed by Types 1, 2, 4, 5 and the agentive. In cases in which (for example) Types 1, 2 and 4 reduce to the same case, we omit additional examples.

In (110) the NP denotes the existence of two children who are eager to "prepare dinner" in this case; this modifying adjunct expresses the eagerness of a person/animate to start

up an activity. Note that this NP is not derived from the canonical Type 3 form, but the related one in which the cause is expressed as an infinitive (as in example (10) discussed in §3). Because corresponding forms do not exist for agentive predicates outside purposive contexts, we omit a parallel agentive predicate example.

(110) los niños   gustosos de preparar la cena
      the children$_i$ liked$_i$ of preparing the dinner
      'the children eager to prepare dinner'

(111) a.   los bombones   que   les   gustan a los niños
            the chocolates$_i$ that Dat-cl like$_i$ to the children
            'the chocolates that the children like'

      b.   Los profesores que aburrieron al alumno
            The teachers$_i$ that bored$_i$ to-the student
            'The teacher that bored the student'

      c.   las reuniones de departamento   que aburren a un miembro de la facultad
            the meetings$_i$ of the department that bore$_i$ to a member of the faculty
            'the departmental meetings that bore a member of the faculty'

      d.   La entrevista   con la que   un miembro del comité   se   enfadó
            The interview$_j$ with the-one$_j$ that a member$_i$ of-the committee himself$_i$ got annoyed
            'The interview that a committee member got annoyed with'

      e.   los accidentes de moto   a los que   el motorista   teme
            the accidents$_j$ of motorbikes to the that$_j$ the motorcyclist$_i$ fears$_i$
            'Motorbike accidents which a motorcyclist fears'

      f.   las niñas que besan al príncipe
            the girls$_i$ that kiss$_i$ to the prince
            'the girls that kiss the prince'

    The examples in (111) are of relative clauses in which the head noun is the cause-NP from the modifying relative clause. Because of the word order shift in Type 1 and Type 2, and the difficulty in general of referring to subjects with these verbs, we refer to cause relatives and experiencer relatives rather than subject relatives and object relatives. The cause relatives are grammatical in each case. Type 2 cause relatives (111.c), interestingly, behave exactly like Type 1 cause relatives (111.b). Type 3 relatives, in spite of base construction likeness to Type 2, are different in that they require a dative clitic inside the relative clause to maintain grammaticality (111.a). It would be constructive to expand the range of data with respect to legal clitic placements (with dialectical variation accounted for), in comparison with recent work on clitics in relative clauses in Spanish (Suñer, 1998). The fact is that the clitic inside the relative clause respects the constraints on the clitic relative to the predicate in the base sentence, with the dative NP relocated to postverbal position within the relative clause. It might have been expected that dative noun should

remain in its ordinary position inside the relative clause as well. For that reason it would be useful to explore these clitics further to see if they qualify as resumptive in the sense of Suñer (1998); however, we will not pursue this here. A Type 4 relativization is provided in (111.d). In the Type 4 cause relative, the *se* remains adjacent to its NP (this is to be expected since in the Type 4 constructions, the cause is the post-verbal constituent). Case assignments remain as in base sentences, though clearly positioning of the constituents varies.

In (112) we have a corresponding set of experiencer relatives. Here the dative clitic agreeing with the head noun of the noun phrase, positioned to the right of the relativizer, is necessary for Type 3 (112.a) predications, as well as Type 2 (112.c) predications. Structurally, it looks like the Type 1 cause relative for both, except of course that the cause and experiencer are in complementary locations. Thus, Type 2 constructions pattern with Type 1 constructions for cause relatives, and with Type 3 constructions for experiencer relatives. Type 4 experiencer relatives are similar (112.d) except that it's the reflexive pronoun left inside the relative clause. Type 5 experiencer relatives (112.e) are like Type 1 cause relatives in terms of the location of the agreement controller with respect to the relative clause. Type 1 experiencer relatives are exactly like agentive experiencer relatives (112.f).

(112) a.   los niños   a los que   les   gustan los bombones
    the children$_j$ to the-ones$_j$ that Dat-cl$_j$ like$_i$ the chocolates$_i$
    'the children that like the chocolates'

    b.   El alumno   al   que los profesores aburrieron
    The student to-the that the teachers$_i$ bored$_i$
    'The student that the teachers bored'

    c.   Un miembro de la facultad al   que le   aburren las reuniones de departamento
    A member$_i$ of the faculty   to the$_i$ that Dat-Cl$_i$ bore$_j$ the meetings$_j$ of department
    'A member of the faculty that the department meetings bore'

    d.   un miembro del comité   que se   enfadó   con la entrevista
    a member$_i$ of-the committee that himself$_i$ got$_i$-annoyed with the interview
    'a committee member who got annoyed with the interview'

    e.   Un motorista   que teme a los accidentes de moto
    A motorcyclist$_i$ that fears$_i$ to the accidents of motorbike
    'A motorcyclist who fears motorbike accidents'

    f.   El príncipe que las niñas besaron
    The prince who the girls$_i$ kissed$_i$
    'The prince who the girls kissed'

The upshot of the cause and experiencer relative clauses is murky. Clearly Type 3 constructions behave differently to Type 1 constructions, the latter distributing exactly like agentive predicate relatives. Thus, there's no clear explanation in the lack of an agent. Probably the lack of dative clitics in Type 2 cause relatives but presence of the dative clitic

and post-verbal relocation of the dative nominal in the Type 3 clausal relatives is directly tied to the fact that Type 2 verbs have Type 1 counterparts. But then, it's puzzling why the Type 2 and Type 3 predicates pattern together for experiencer relatives. However, this behavior in comparison to the agentive predicates cannot be used to argue that the predicates have (or lack) subjects since with those predicates, where notions of subject and object are clearer, the object relatives do force the need for clitics.

However, neither is experiencer relativization in agentive ditransitives especially illuminating. Example (113) does illustrate that the dative clitic is possible inside the relative clauses in those cases, but also that it isn't necessary.

(113) a. La hermana a quien   la chica le   dio su premio
           The sister$_j$ to who$_j$ that the girl Dat-Cl$_j$ gave her prize
           'The sister that the girl gave her prize to'

      b. La hermana a quien   la chica dio   su premio
           The sister$_j$ to who$_j$ that the girl gave her prize
           'The sister that the girl gave her prize to'

The examples in (114) all involve the present progressive forms of the predicates. Interestingly, some speakers accept (114.a) as grammatical, even though it involves a change in the agreement controller over the base sentence. The rest of the examples present no surprises: the agreement controller in the base form sentence agrees with the auxiliary in the present progressive. Case properties also remain constant.

(114) a. ? Los niños   están gustando la película
            The children$_i$ are$_i$ liking   the movie
            'The children are liking the movie'

      b. A los niños   les   está gustando la película
           To the children Dat-Cl is$_i$ liking   the movie$_i$
           'The children are liking the movie'

      c. Los profesores están aburriendo al alumno
           The teachers$_i$ are$_i$ bore-prog to-the student
           'The teachers are boring the student'

      d. A un miembro de la facultad le   están aburriendo las reuniones de departamento
           A member$_j$ of the faculty   Dat-Cl$_j$ are$_i$ bore-prog the meetings$_i$ of the department
           'The departmental meetings are boring a faculty member'

      e. Un miembro del comité   se   está enfadando en la reunión
           A member$_i$ of the committee himself is$_i$ annoy-prog in the meeting
           'A committee member is getting annoyed in the meeting'

      f. ? El motorista   está temiendo un accidente grave
            The motorcyclist$_i$ is$_i$ fear-prog to an accident grave
            'The motorcyclist is fearing a grave accident'

g.   El niño   está besando a su prima
The child$_i$ is$_i$ kissing   to his cousin
'The child is kissing his cousin'

The examples in (115) are reduced forms of the (114) cases. It's interesting here that the Type 3 sentence (115.a) is grammatical in Spanish, with the cause-NP pro-dropped, when the corresponding English sentence is ungrammatical. On the other hand, the Type 1 construction (115.b) with the experiencer missing is ungrammatical (and here, the corresponding English case isn't so bad). Type 2 predicates follow Type 3 predicates, and Type 4 predicates behave in the reduced present progressives as they do in the nonreduced forms. Type 5 predicates (115.e) are ungrammatical in this form; moreover example (115.f) demonstrates that simply keeping the cause and pro-dropping the experiencer is not grammatical either. A different form (simple past) would be necessary with pro-drop of the experiencer.

(115) a.   A los niños   les   está gustando
To the children$_j$ Dat-cl$_j$ is$_i$ liking   pro$_i$
*'The children are liking'

    b.   * Los profesores están aburriendo
The teachers$_i$ are$_i$ bore-prog
'The teachers are boring'

    c.   A un miembro de la facultad le   están aburriendo pro
A member$_j$ of the faculty   Dat-Cl$_j$ are$_i$ bore-prog   pro$_i$
'A faculty member is getting bored'

    d.   Un miembro del comité   se   estaba enfadando
A member$_i$ of the committee himself was$_i$ annoy-prog
'A committee member was getting annoyed'

    e.   * Un motorista   estaba temiendo
A motorcyclist$_i$ was$_i$ fear-prog
'A motorcyclist was fearing'

    f.   *   estaba temiendo un accidente
pro$_i$ was$_i$ fear-prog an accident
'(A motorcyclist) was fearing an accident'

    g.   las niñas están ayudando
the girls$_i$ are$_i$ helping
'the girls are helping'

The examples in (116) are designed to show the capacity of psychological predicates relative to agentive predicates to become modifiers applied to the experiencer and cause. Like English, Spanish has a few productive morphological means (in addition to relative clause modification) to change verb forms into alternatives that can be used as modifiers:

gerunds (e.g. *helping child*), past participles (e.g. *helped child*), agent/experiencer nominals (e.g. *helper, fearer*). However, in Spanish gerunds, in general cannot function as adjectives. Example (116.a) demonstrates that an experiencer oriented modifier is not derivable from Type 3 predicates, although cause oriented modification is available (116.b). For Type 1 predicates, (116.c) gives an example in which the modifier form of the predicate is ambiguous between experiencer and cause oriented modification, and this entails that the same example applies to Type 2 predicates. Of course, Type 4 verbs also use a form of the same predicate, but the *se* cannot be added to the modifier form (116.d). Type 5 verbs also have both experiencer oriented (116.e) and cause oriented (116.f) derived modifiers, just as agentive predicates do (116.g) and (116.h).

(116) a. * los niños   gustantes
           the children liking
           'the liking children'

     b. los bombones   gustosos
           the chocolates$_i$ liked$_i$
           'the liked chocolates'

     c. Los profesores aburridos
           The teachers$_i$ boring$_i$
           'The boring teachers'

     d. * Un miembro enfadándose del comité
           A member$_i$ annoying$_i$ of the committee
           'An annoying committee member'
           (A committee member getting annoyed)

     e. Un motorista   temeroso
           A motorcyclist$_i$ fearing$_i$
           'A fearing motorcyclist'

     f. Un accidente temido
           An accident$_i$ feared$_i$
           'A feared accident'

     g. los niños   ayudantes
           the children helping
           'the helping children'

     h. el niño   besado
           the child$_i$ kissed$_i$
           'the kissed child'

Next we consider predicate nominals formed from deverbal adjectives. Type 3 verbs are irregular in admitting such forms. For example, *gustar* lacks a noun equivalent to 'liker'. Instead, speakers would recur to expressions formed by an adjective *gustoso/a* followed by

a PP denoting the 'liked' object/activity (recall a). A predicate adjective version of this is given in (117). An object relative clause could be used (118).

(117) Ella estaba gustosa de pasear por la nieve
      She was   liking   of walking on the snow
      'She liked walking on the snow'

(118) A quienes   les   guste   la nieve,
      To who-pl$_i$ Dat-cl$_i$ like-subj$_j$ the snow$_j$,

      por favor síganme
      please   follow-me
      'Those who like snow, please follow me!'

However, an alternative Type 3 verb does have the predicate nominative form. In (119.a), *apetente* is an adjective. Once the adjective has been nominalized (by adding a determiner in front of it), the new form is frequently used in the context of gastronomy. In contrast, (119.b), contains the result of an attempt to derive a X-er agent noun from the verb *apetecer* which is ungrammatical. The adjective *apetecedor* in (119.c) means 'appealing' or 'attractive'.

(119) a.   Juan es el apetente
          Juan is the fancier
          'Juan is the one who fancies' (usually food)

      b.   * Juan es el apetecedor
           Juan is the fancier
           'Juan is the fancier'

      c.   Juan está apetecedor
          Juan is   appealing
          'Juan is appealing'

As with cause vs. experiencer modification with adjectives derived from Type 1, Type 2 and Type 4 constructions, since the base predicates at stake are common to all, one example (120) suffices to demonstrate the acceptability of predicate nominals formed from deverbal adjectives for those predicates.

(120) Él es un aburrido
      He is a bore
      He is a bore/He is always bored

The Type 5 verbs *temer* 'fear' and *admire* 'admirar' have both an adjective derived from the verb stem, as (121.a) and (121.b) show. While the second case is correct and frequently used, the first case case has no attested uses we know of. We emphasize that all these nouns are in principle adjectives (Española, 1992), and the productive nominalization rule makes adding determiner such as *el* 'the' easily turn them into legal nouns.

(121) a.   Juan es el temedor
          Juan is the fearer
          'Juan is the fearer'

      b.   Juan es el/su admirador
          Juan is the/his admirer
          'Juan is the/his admirer'

The agentive verb *ayudar* 'help' has a derived noun that denotes 'person who helps' (122.a), though this form is not so frequent in Spanish, instead the word *ayudante* 'helper' (122.b) is the more common term.

(122) a.   Mi hermano es el ayudador
          My brother is the helper
          My brother is the helper

      b.   Mi hermano es el ayudante
          My brother is the helper
          My brother is the helper

The examples in (123) show how gerunds can be used in Spanish. Of the psychological predicates, only the ones participating in Type 1, Type 2 and Type 4 constructions (123.b) may enter into existential claims about the amount of the predicate happening; Type 3 predicates (123.a) are ungrammatical in that form, although the sentence is grammatical with a sense of *gustar* not translated as 'to like' but with *gusto* understood as 'fine taste'. Type 5 predicates are questionable (123.c) in the base form, but with locative shift the sentence is fine (123.d). The construction works fine for agentive predicates (123.e).

(123) a.   * Hubo   mucho gusto en la ceremonia
          There was a lot   liking in the ceremony
          There was a lot of liking in the ceremony

      b.   Había   mucho aburrimiento en la ceremonia
          There was a lot   boring   in the ceremony
          There was a lot of boring in the ceremony

      c.   ? Hubo   mucho temor en la ceremonia
          There was a lot   fearing in the ceremony
          There was a lot of fearing in the ceremony

      d.   En la ceremonia hubo   mucho temor
          In the ceremony there was a lot   fearing
          In the ceremony was a lot of fearing

      e.   Hubo   mucho beso en la ceremonia
          There was a lot   kiss in the ceremony
          There was a lot of kissing in the ceremony

In this section we have considered a range of examples using morphologically related forms of the psychological predicates, mainly as adjectives but also as nominals, in order to see whether the related forms are sensitive to the experiencer and cause arguments. We have compared these results with the effects in agentive predicates to observe the degree to which the process is sensitive to the lack of an agent.

3.3   Discussion

This section has presented five related categories of psychological predicates in Spanish. Two exhibited ordinary word order, case assignment and agreement control, and were related by a sort of passivization. Two were related by an optionality constraint, one exhibiting unusual case assignment, agreement control and word order. Another was distinct from the rest in presenting the primary examples of the phenomena under discussion here; these were actually parallel to the sort just mentioned, except these lacked an option with ordinary properties. The final category is again normal in many respects, but differs from the very first category in terms of the thematic role assigned to the agreement controller.

With an eye on this data we considered the notion of "subject", and found it difficult to identify a clear subject category in all of the classes of predicates, on the basis of the various tests we examined. The cause-NP is allowed to be the agreement controller of a control verb (subject of control) only for those types in which the cause-NP controlled agreement in the finite version of the sentence type. The same generalization holds for cause-NPs in subject of raising examples. Except when the cause-NP is both agreement controller in a finite form of the embedded sentence and in clause initial position in the finite form, it cannot be the object of a control verb, and similarly for cause-NP object of raising. In nearly complementary distribution, the experiencer-NP cannot be subject of the control verb except for the two predicate types in which experiencer is agreement controller and leftmost in the finite form of the embedded clause. The experiencer-NP cannot be the object of the control verb in any of the predicate types, although it can be the object of raising for the predicate types in which in the finite form of the embedded clause it is both clause initial and the agreement controller. Relative clauses can be formed as either cause relatives or experiencer relatives for each of the predicate types but one, one in which the cause cannot be relativized (in one of the two cases in which it is clause final and agreement controller). Notably, the systematicity here does not hinge on grammatical subject or logical subject. There is a correlation between agreement control and linear order.

Many of these observations have already been made before:

> Although the dative argument of experiencer predicates is a logical subject, there is evidence that it is not a grammatical (or surface) subject. The fact that this argument is marked with dative case, rather than nondative (or nominative), which otherwise characterizes subjects, the failure to trigger subject agreement on the verb, and the failure to be "pro-dropped" with a definitive interpretation make it unlike ordinary subjects. More compelling evidence for

the nonsubject status of this argument is the fact that it cannot be controlled in "equi" type constructions and nonfinite adverbial clauses and cannot undergo raising; in contrast, the nondative (theme) argument does have these properties. Alsina (1996, p. 182)

Indeed, it will be seen from our analysis developed in the next sections that we do not think the notion of grammatical subject explanatory in the case of the psychological predicates, nor in the case of canonical predicates. Rather, we find "subject" to be a second order notion that correlates with clusters of properties without entering into causal explanations of accompanying phenomena (cf. Keenan, 1975).

There are three important things to note at this point. Firstly, the classification of predicates that we have described for the psychological predicates also holds for certain other verbs that would not be considered psychological predicates (see §3.3.1). Secondly, the 5 way classification that we propose is more usefully refined than the tripartite classifications offered by Grimshaw (1990) or Belletti and Rizzi (1988). Grimshaw (1990) classifies psych verbs into two main groups: the *fear* type that are stative verbs and the *frighten* type that she claims to be causative and eventive predicates. Fear type verbs have an external argument; passivization and nominalization provide the proof. On the other hand, Grimshaw argues that *frighten* predicates do not have external arguments, although they do have underlying logical subjects. The absence of an external argument is explained because these predicates don't have an argument that is thematically and aspectually more prominent than the experiencer. Grimshaw comments about a third type of predicates that is related to the other two (Grimshaw, 1990, p. 29): *please* and *concern* in English (the Spanish versions of these are in our Type 3 verbs; Belletti and Rizzi's (1988) *piacere* in Italian). Grimshaw argues that these verbs resemble the *fear* type according to their thematic argument structure and ordering of thematic arguments, although configurationally they are like the *frighten* types (and thus lack an external argument). Grimshaw's analysis is attractive in explaining differences between her two main types through the interaction of an aspectual hierarchy and the hierarchy of theta roles; however, the state-event dichotomy does not coincide neatly with the patterns of syntactic behavior that yield the 5 classes of psychological predicates in Spanish—there are states and events in each of the categories.

Belletti and Rizzi (1988) also split (Italian) psychological verbs into two main groups: *temere* class (*fear* type, our type 5 verbs) and *preoccupare* class (*frighten* verbs in English; our Types 1 and 2 in Spanish). Among these groups, only the *temere* class conforms to the Nom-Accusative verb pattern in which the experiencer argument is realized by the NP triggering verb agreement (a deep subject and external argument according to Belletti and Rizzi (1988)). In contrast, the *preoccupare* and *piacere* classes take "derived subjects" that cannot occupy the external argument position of a VP. The *piacere* class in Italian shows two different word orderings: experiencer verb cause-NP and cause-NP verb experiencer much in the way of our Type 1 and 2 verbs. The necessary conditions that an NP should fulfill in order to be an external argument (in their terms) are: to bear an agreement relationship with the finite verb, to admit an anaphoric clitic (reflexive pronoun), to admit embedding in causative constructions, and to admit passivization. Their analysis sees the

preoccupare (our Type 1 and 2) class as double-object constructions. They argue that the Theme-NP (which we are calling the cause of the psychological state) is realized as a primary object and the experiencer acts as a "sort of second-object (sister of V')" (Belletti & Rizzi, 1988, p. 325). Problems emerge whenever the postverbal experiencer-NP is cliticized, since the cliticized NP is accusative and not nominative. The solution they see is to insert a Case grid in every verb lexical entry specifying an inherent case marking which is assigned at D-structure and is thematically related (as opposed to the structural case assigned at S-structure under government, i.e. the Nom-Acc default cases in an SVO language). Finally, the experiencer-NP takes dative case in the *piacere* predicates (similar to our Type 3 verbs, but classed by them with our Type 1 and Type 2 predicates). It's interesting to note that Belletti and Rizzi (1988) stress that the unmarked word order for this type has the experiencer in the logical subject position and this motivates their decision to name this dative-NP as a "quirky subject". According to them, the fact that these dative-NPs bear inherent case marking rules them out as external arguments. It is not clear if Belletti and Rizzi (1988) identify a relevant difference between Type 2 and Type 3 predicates; the difference that we point out is that Type 3 predicates in Spanish lack type 1 counterparts. Our Type 4 verbs are left out by both Grimshaw (1990) and Belletti and Rizzi (1988), since they are said to be inchoative verbs, and are not relevant to their discussions.

Finally, the observations we have made about Spanish, apply cross-linguistically to a number of languages with the same phenomena. Also note that similar agreement patterns to Type 3 predicates exist with other verbs in Spanish. In presenting our HPSG analysis of the data we will also offer illustrations in terms of related phenomena that appear in English.

3.3.1 Non-psychological Type 3 predicates in Spanish

There are other verbs that show the same syntactic pattern as the psychological verbs in Type 3.

Several examples in this section are taken from Fernández-Soriano (1999) or based on the data provided in this work in which the author argues for the existence of locative (and temporal) PPs as logical subjects (but not syntactic subjects) of impersonal sentences. Fernández-Soriano (1999) divides the impersonal verbs with 'quirky subjects' into two groups : (i) stative verbs: *constar* 'to be known, to state', *bastar* 'to be enough', *faltar* 'to miss, to lack', *sobrar* 'to have extra' and existential *haber* 'there is/are'; and (ii) eventive verbs: *suceder, ocurrir* 'to happen', weather verbs *llover* 'to rain', *nevar* 'to snow', among others and, we also add a use of the lexical verb *dar* 'to give' in the context of physical feelings 'to have a cramp, to have the shivers, to undergo a pain'.

Here, we will continue to use the same terms to refer to the verb arguments; thus, experiencer-NP denotes the preverbal NP or locative PP[14] and cause-NP refers to the

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[14] There is no semantic relation between the terms of 'experiencer' and 'cause' adopted to describe the semantic argument structure and the valency structure of these impersonal verbs and the denotation of such terms that was semantically accurate when dealing with psychological predicates. Here, it's mere

postverbal NP.

Consider the sentences in (124) and (125); every predicate in these groups with the exception of *haber* 'existential there' and the weather verbs (125.c), admits either a locative PP (see (124.a), (124.d) and (125.a)), or a dative NP and a dative pronoun (as in (124.b), (124.c), (124.e), (125.b) and (125).d)) in initial position; the postverbal NP is in nominative case and triggers agreement control on the finite verb.[15] The admissibility of a dative NP (as logical subject) and the agreement controller in postverbal position of these predicates motivated the analogy between these predicates and the psychological Type 3 verbs described in §3.

(124) a.　En el catálogo　constan　　　sus nombres
　　　　　In the catalogue are$_i$ on record their names$_i$
　　　　　'Their name are on record'

　　　b.　Me　　constan　　sus nombres
　　　　　Dat-cl are on record their names
　　　　　'Their names are known to me'

　　　c.　Me　　basta　　esa cantidad
　　　　　Dat-cl is$_i$ enough that quantity$_i$
　　　　　'That quantity is enough for me'

　　　d.　A este libro　le　　faltan dos páginas
　　　　　to this book Dat-cl miss$_i$　two pages$_i$
　　　　　'Two pages are missing in this book'

　　　e.　Me　　faltan dos alumnos
　　　　　Dat-cl miss$_i$　two students$_i$
　　　　　'Two students are missing (in my record)'

　　　f.　En este bar hay　　　tapas
　　　　　In this bar　there-are$_i$ tapas$_i$
　　　　　'There are snacks in this bar'

(125) a.　En Barcelona ha　ocurrido / sucedido un accidente
　　　　　In Barcelona　has happened　　　　an accident
　　　　　'An accident has happened in Barcelona'

　　　b.　Le　　ha　ocurrido / sucedido un accidente
　　　　　Dat-cl has happened　　　　an accident
　　　　　'An accident has happened to him'

　　　c.　En Madrid llueve / nieva / amanece
　　　　　In Madrid　rains / snows / dawns
　　　　　'It rains / snows / dawns in Madrid'

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convenience and easiness for the description.

[15]With the exception of existential *haber*. With this verb, the postverbal NP bears accusative case marking as the pronominalization of this NP proves.

    d.   Me   dan (unos) escalofríos
         Dat-cl give$_i$ (some) shivers$_i$
         'I have the shivers'

    e.   A Juan le   dio   un retorcijón
         To Juan Dat-cl gave$_i$ a cramp$_i$
         'Juan had a cramp'

    f.   A Juan le   dio   un dolor muy fuerte en el corazón
         To Juan Dat-cl gave$_i$ a pain$_i$ very strong in the heart
         'Juan suffered a very strong pain in his heart'

Fernández-Soriano (1999) explores the behavior of these verbs with respect to nominalizations, raising, position of the locative PPs in interrogative constructions, admission of subject-oriented secondary predicates, embedding under causatives, among other phenomena that use related forms of the predicates. Here, we will address control, raising, passivization and nominalization.

Control   Equi constructions are not discussed by Fernández-Soriano (1999), possibly because these verbs cannot be embedded under control verbs such as *querer* 'to want', *prometer* 'to promise', etc. Neither the preverbal-NP in the base sentences nor the postverbal-NP can realize the logical subject (see (126)) nor object (127) of equi control predicates.

(126) a.   * (En) el catálogo   quiere constar   sus nombres
            (In) the catalogue$_i$ wants$_i$ to be on record their names
            '*The catalogue wants to state their names'

     b.   * Yo quiero constar   sus nombres
            I   want to be on record their names
            '*To me want their names to be on record'

     c.   * Yo quiero bastar   esa cantidad
            I   want to be enough that quantity$_i$
            'To me want to be enough that quantity'

     d.   * (*A) este libro quiere faltar   dos páginas
            (*)to this book$_i$ wants$_i$ to miss two pages$_i$
            'This book wants to miss two pages'

     e.   * Yo quiero faltar   dos alumnos
            I$_i$ want$_i$ to miss two students
            'To me want to miss two students (in my record)'

     f.   * Ahí   quiere no caber esos libros
            There$_i$ wants$_i$ not fit$_i$ those books$_i$
            'There wants not to be enough space for those books'

g. * Yo quiero caber esos libros
    I$_i$ want$_i$ to fit those books$_i$
    'I can fit those books'

h. * Yo quiero dar   escalofríos
    I$_i$ want$_i$ to give shivers$_i$
    'I want to have the shivers'

i. * Yo quiero dar   unos escalofríos
    I   want$_i$ to give some shivers$_i$
    'I want to have the hivers'

j. * (*A) Juan   quiere dar   un retorcijón
    (*To) Juan$_i$ wants$_i$ to give a cramp$_i$
    'Juan wants to have a cramp'

k. * En Madrid quiere nevar
    In Madrid wants to snow
    '*In Madrid, it wants to snow'

(127) a. * Sus nombres quieren constarme
          Their names want   to be on record-Dat-cl
          '*Their names want to be on record to me'

b. * Esos libros   quieren caber ahí
    Those books$_i$ want$_i$ to fit there
    'There wants not to be enough space for those books'

Raising Fernández-Soriano considers raising with these impersonal verbs to be a syntactic phenomenon that accepts a locative PP (the experiencer-NP) as raiser but, it would not accept the theme (our cause-NP) as raiser unless this NP were topicalized or focused. The data provided partially supports this claim because Fernández-Soriano (1999) does not indicate the relation between the postverbal NP and the raising verb *parecer* 'to seem'. It is the postverbal NP that triggers agreement on the raising verb, thus if we have a plural cause-NP as in (128.a), how can we defend that the locative PP is a true raiser in a subject raising sentence and there is still an agreement relation between the downstairs NP and the raising verb? The data suggests the solution we formalize in HPSG: raising shares an argument position of the finite verb (but not to a semantic argument of the finite verb) with an embedded nonfinite predicate, and moreover, the raising predicate has the same agreeement controller as the embedded predicate. If we vary the number of the downstairs cause-NP the raising verb also varies; this is indicated by the indices in (128.a–128.e). In sentence (128.f), the embedded verb lacks a postverbal NP, thus the locative PP is allowed as the subject raiser position.

(128) a. En el catálogo   parecen constar   sus nombres
          In the catalogue want$_i$ to be on record their names$_i$
          'In the catalogue, their names seem to be stated'

    b.   ? Me parece constar   sus nombres
            Me$_i$ seem$_i$ to be on record their names
            '*To me seems their names to be on record'

    c.   * Me   parece bastar   esa cantidad
            Dat-cl seems$_i$ to be enough that quantity$_i$
            'To me that quantity seems enough'

    d.   A este libro   parecen faltarle   dos páginas
            To this book$_i$ seem$_j$ to miss-Dat-cl$_i$ two pages$_j$
            'This book seems to have to pages missing'

    e.   Ahí   no parecen caber esos libros
            There not seem$_i$ to fit those books$_i$
            'There those books seem not to fit'

    f.   En Madrid parece nevar
            In Madrid seems to snow
            'In Madrid, it seems to snow'

Passivization   None of the verbs admit passivization as the examples in (129) and (130) illustrate. We omit the full litany of ungrammatical passive forms for these predicates.

(129) * Sus nombres son constados   por mí
       Their names are been on record by me
       'Their names to be known by me'

(130) * Esa cantidad   es bastada   por mí
       That quantity$_i$ is$_i$ thought enough by me
       'That quantity is thought to be enough for me'

Nominalizations   Fernández-Soriano (1999, p. 111) argues that the nominalizations of the subjects and direct objects are preceded by the genitive preposition *de* 'of' and datives and obliques are preceded by the same preposition *a/en/para* 'to, on, in, for' as in tensed verbal constructions. If this is always the case, the preverbal NP in tensed constructions should be introduced by the preposition *de* in their related nominalizations in (131).[16] This argument doesn't seem valid for verbs such as *constar* and *faltar*. In the nominalizations in (131.a) and (131.b), the postverbal NP in the related finite sentence is introduced by the preposition *de* 'of', whereas the preverbal-NP keeps the dative preposition case marker (*a* 'to'). In contrast, the nominalization of the *dar + escalofríos / un dolor / un retorcijón* predicates shows evidence that the dative NP is the syntactic subject; the dative NP admits the genitive case (as an example see (131.e)).

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[16]Examples (131.f) and (131.g) are taken from Fernández-Soriano (1999, p.111).

(131) a.   la constancia de sus nombres *de / a Juan
            the statement of their names of / a Juan
            'the statement of their names'

     b.   la falta de dos páginas *del / al libro
            the lack of two pages   *of-the / to-the book
            '*the lack to the book of two pages'

     c.   * los escalofríos de / a mí
              the shivers   of me
               '*the shivers of me'

     d.   los escalofríos míos
            the shivers   mine
            'my shivers'

     e.   mis escalofríos
            my shivers
            'my shivers'

     f.   la nevada   *en / de Madrid
            the snowing of Madrid
            'the snow of Madrid'

     g.   el suceso de Barcelona
            the event of Barcelona
            'the event in Barcelona'

The data presented here illustrates that the valency properties of the psychological predicates in Spanish is not unique to emotion verbs. Some verbs like *dar escalofríos* ('to shiver'), are between emotive states and physical activities. Other verbs here are not connect to psychological states at all. Nonetheless, the same properties of agreement controller placement and odd case assignments obtain. We will not explore the dichotomy Fernández-Soriano (1999) forms between the stative and eventive predicates because the predicates do not seem clearly distributed between them.

3.3.2   Odd Case and Agreement in English

While the English correlates of Type 3 predicates behave as ordinary (SVO) predicates with respect to agreement and case assignment (see 132), certain constructions in English behave differently. First consider the data in (133-144). Examples (133-136) demonstrate that the agreement controller in these constructions is the non-expletive NP following the verb. The ungrammaticality of (137) and (142) cannot be used to assert that the post-verb NP is unmarked for nominative or accusative case, but are ruled out semantically as definites (Barwise & Cooper, 1981); any effort to provide a nonreferential reading for

the pronoun induces a list-reading for the existential (138-141), yet in those cases, the agreement controller remains post-verbal and nominative case is preferred.[17]

(132) Pizzas$_j$ please$_j$ Leslie

(133) There is a book on the table

(134) There are three books on the table

(135) *There is three books on the table

(136) *There are a book on the table

(137) *There is she

(138) Who laughs loudly?

There is she who laughs last

(139) Who laughs loudly?

*There is her who laughs last

(140) Who eats junk food?

There is she who McDonald's targets successfully

(141) Who eats junk food?

*There is her who McDonald's targets successfully

(142) *There is her

(143) *There her is

(144) There she is

Interestingly, the existential sentences in English have properties similar to the Type 3 predicates in Spanish. They lack Type 1 counterparts: inverting the arguments yields a strictly demonstrative reading for *there*. Consider raising, using (133) as a base sentence for reference, and (145) as its raised counterpart. Example (147) is also grammatical, but does not form a minimal pair as it is a raised form of a different base sentence. While example (144) is grammatical it involves not the existential construction but a demonstrative. Example (148) is ungrammatical, but (149) is ok, and does not carry full demonstrative force for *there*.[18] Note the analogy between the post embedded verb

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[17]Both subject and object relatives are used to demonstrate that the case does not arise from the relative clause.

[18]The *there* in (144) cannot be anaphoric, only demonstrative. Past tense, 'there she was' breaks the demonstrative link and makes the *there* a locative anaphor. In (149) the *there* is also a locative anaphor. It seems that in the existential assertion cases, *there* also functions as a locative pronoun, but in a collocation that is shared with quantification idiom.

placement of *there* in (149) and the post embedded verb placement of the dative in (41.b), repeated in (150).

(145) There seems to be a book on the table

(146) There seem to be three books on the table

(147) A book seems to be on the table

(148) *A book seems there to be on the table

(149) A book seems to be there on the table

(150) Las pizzas   parecen gustarle   a Juan
      The pizzas$_i$ seem$_i$ to like-to him to Juan
      'Juan seems to like pizzas'

    In any case, examples (145) and (146) demonstrate that in English it is not necessary for an NP to be agreement controller to be able to raise to subject. We will not consider reflexivization in connection with these sentences as no NP in the existential sentences can bind a non-emphatic reflexive.

    Locative inversion is another instance in the literature discussed as providing examples in English in which subjects are assigned quirky case (e.g. see den Dikken & Næss, 1993). The argument in den Dikken and Næss (1993, p. 304) is based on examples such as (152) which have related examples such as (153) that suggest topicalization is at stake, but also examples like (154) and (155) which are constrained in extraction potential when a complementizer is present just like cases in which there is a less contentious subject extracted (156–157).

(151) The baby carriage rolled down the hill

(152) Down the hill rolled the baby carriage

(153) Down the hill the baby carriage rolled

(154) It's [in these villages]$_i$ that we all believe t_i can be found such treasures.

(155) *It's [in these villages]$_i$ that we all believe that t_i can be found such treasures.

(156) It's [Val]$_i$ that we all believe t_i can find the treasures.

(157) *It's [Val]$_i$ that we all believe that t_i can find the treasures.

A difference to the other data we consider is that in these cases the locative is not the logical subject (nor does it raise, nor function as agreement controller).

    Dative NP shift provides another set of data in English in which it is possible in a passive form to have a non-nominative apparent subject. Examples (158–163) are again from den

Dikken and Næss (1993, pp. 318-9), with the exception of (163) which demonstrates that the particle needn't be attached to the verb. Example (161) is added to emphasize that the postverbal NP is the agreement controller.

(158) John sent a schedule out to the stockholders

(159) John sent the stockholders out a schedule

(160) To the stockholders was sent out a schedule.

(161) *To the stockholders were sent out a schedule.

(162) *To the stockholders was sent a schedule out.

(163) Out to the stockholders were sent schedules.

Note that raising of the shifted dative is not possible:

(164) John seems to have sent a schedule out to the stockholders

(165) *To the stockholders seem to have been sent out a schedule.

(166) *To the stockholders seems has been sent out a schedule.

(167) ?To the stockholders seem to have been sent out schedules.

Additionally, the shifted dative cannot bind a reflexive.

3.3.3   Summary

Our analysis of the phenomena presented here will therefore be sensitive precisely to agreement control and linearization, but not to grammatical subject. This contrasts with the conclusions reached by Zaenen, Maling, and Thráinsson (1985) in the case of quirky case in Icelandic. Considering a range of data like that in §3.2, Zaenen et al. (1985) conclude that certain predicates (including *fear*) in Icelandic have dative subjects, while related structures with dative marking in German do not count as subjects. It is worth pointing out that the dative subjects in Icelandic, while they undergo raising and the rest, do not function as active agreement controllers:

> Note that regardless of the person or number of the initial NP, the verb is always in the third person singular. Verbs agree in person and number with a nominative argument; if there is no nominative NP, then the verb occurs in the third person (neuter) singular, which we take to be the unmarked form. (Zaenen et al., 1985, p. 107).

It was also clear in the relevant Spanish cases (Type 3) that the logical subject was marked dative and did not control agreement. The contrasting conclusion here is that the important entity is not discriminated as subject, but that jointly the most important entities are the least oblique complement (with no grammatical function discriminated) and the agreement controller. In ordinary predicates they coincide, and in quirky predicates they do not.

4 Background Debate in HPSG

Head-driven Phrase Structure Grammar (Pollard & Sag, 1987, 1994; Balari & Dini, 1998) is an approach to linguistic theory motivated in part by the aesthetic of effective computability of the recognition problem, influenced by work on GPSG and LFG in that regard. The framework integrates syntactic and semantic information into its analyses without any division of labor within the theory in terms of stages of processing for an utterance. The framework is highly lexicalized, with only a handful of phrase structural schema and a few universal principles. Yet the theory isn't reduced to claiming lexical arbitrariness—the lexicon decomposes into several cross-cutting classifications that account for much of the systematicity of language. The framework also borrows useful ideas from other linguistic frameworks, such as X-bar theory (minus functional categories), and categorial grammar.

Here we describe the way analyses are licensed within HPSG attending to the main issues of interest within this paper. This means we will focus on the first three schema (we will ignore adjuncts and unbounded dependencies), and only the head feature principle and subcategorization principle. In §2 we gave the example in (3) to demonstrate how information is partitioned in the structure of an ordinary verb. This is only part of the information associated with the lexical entry for a verb. In general an object of the sort *sign* has other information as well: phonology, quantification information, and constituent structure. Phrasal signs differ from lexical signs on precisely whether they have constituent structure at all. The structure in (168) shows how the phonology for a verb might be stipulated as depending on its subject: the phonological value of "love" will be some function of the semantic index of its NP subject, achieving subject verb agreement.

$$
(168) \quad
\begin{bmatrix}
\text{PHON:} & \text{morph(love, } \boxed{1} \text{)} \\[2pt]
\text{SYNSEM:} &
\begin{bmatrix}
\text{LOCAL:} &
\begin{bmatrix}
\text{CAT:} &
\begin{bmatrix}
\text{HEAD: } verb \\
\text{SUBJ: } \langle \boxed{3}\,\text{NP: } \boxed{1} \rangle \\
\text{COMPS: } \langle \boxed{4}\,\text{NP: } \boxed{2} \rangle
\end{bmatrix} \\[6pt]
\text{CONTENT:} &
\begin{bmatrix}
\text{RELN: } verb \\
\text{X-ER: } \boxed{1} \\
\text{X-ED: } \boxed{2}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

The sorts of objects that can appear on the valency lists, SUBJ and COMPS are synsem objects, not entire signs. As entire signs contain constituency information, but synsem objects do not, this means that argument selection is entirely local. A head cannot select an argument on the basis of its constituent structure. Similarly, a head cannot select an argument on the basis of its phonology.

The structure in (169) is identical to (168) except for the structure of the valency lists. In (169) the subject list is appended to the subcat list, and is listed in order of increasing obliqueness. This is the same structure as the original proposal by Pollard and Sag (1987), but with the reverse ordering.

$$(169) \begin{bmatrix} \text{PHON: morph(love, } \boxed{1}) \\ \text{SYNSEM:} \begin{bmatrix} \text{LOCAL:} \begin{bmatrix} \text{CAT:} \begin{bmatrix} \text{HEAD: } verb \\ \text{SUBCAT: } \langle \boxed{3}\text{NP: } \boxed{1} \quad \boxed{4}\text{NP: } \boxed{2} \rangle \end{bmatrix} \\ \text{CONTENT:} \begin{bmatrix} \text{RELN: } verb \\ \text{X-ER: } \boxed{1} \\ \text{X-ED: } \boxed{2} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

We will use this ordering in the paper because one of the points of the paper is to argue that the shift to the SUBJ/COMPS partition of the SUBCAT list is unnecessary.

Two universal principles are important to constructing phrases out of lexical signs like that in (168). The head-feature principle is familiar from X-bar syntax—the values of head features on a phrase and its head daughter are identical (in (170), they are represented as sharing the index $\boxed{5}$). The subcategorization principle projects valency information from the lexicon, and effects argument cancellation as they are realized—the SUBCAT value on a phrasal sign is identical to the value of that feature on the head daughter, minus those synsem objects on the head-daughter's SUBCAT list that are realized in signs on the COMP-DTRS list (in (170), the synsem object indexed by $\boxed{4}$ on the subcat list of the head-daughter is realized by the complement "Leslie", and the phrase as a whole no longer subcategorizes for the second NP, only the first NP which will serve as the subject).

$$(170) \begin{bmatrix} \text{PHON: morph(love, } \boxed{1}) \text{ Leslie} \\ \text{SYNSEM:} \begin{bmatrix} \text{LOCAL:} \begin{bmatrix} \text{CAT:} \begin{bmatrix} \text{HEAD: } verb \ \boxed{5} \\ \text{SUBCAT: } \langle \boxed{3}\text{NP: } \boxed{1} \rangle \end{bmatrix} \\ \text{CONTENT:} \begin{bmatrix} \text{RELN: } verb \\ \text{X-ER: } \boxed{1} \\ \text{X-ED: } \boxed{2} \end{bmatrix} \end{bmatrix} \end{bmatrix} \\ \text{DTRS:} \begin{bmatrix} \text{HEAD-DTR:} \begin{bmatrix} \text{PHON: love} \\ \text{SYNSEM:} \begin{bmatrix} \text{LOCAL:} \begin{bmatrix} \text{CAT:} \begin{bmatrix} \text{HEAD: } verb \ \boxed{5} \\ \text{SUBCAT: } \langle \boxed{3}\text{NP: } \boxed{1} \quad \boxed{4}\text{NP: } \boxed{2} \rangle \end{bmatrix} \\ \text{CONTENT:} \begin{bmatrix} \text{RELN: } verb \\ \text{X-ER: } \boxed{1} \\ \text{X-ED: } \boxed{2} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix} \\ \text{COMP-DTRS: } \langle \begin{bmatrix} \text{PHON: Leslie} \\ \text{SYNSEM: } \boxed{4} \end{bmatrix} \rangle \end{bmatrix} \end{bmatrix}$$

Pollard and Sag (1987, 1994) proposed a handful of phrase structure rules that cover a large range of constructions. The three of these schema relevant to this paper are summarized in (171).

(171) a.   A saturated phrasal sign (one that has an empty SUBCAT list) can have a non-lexical head daughter and complement.

      b.   A phrasal sign subcategorizing for a single synsem object can have a lexical head and any number of complements.

    c.   A saturated phrasal sign can have a lexical head daughter marked inverted (INV+).

These can be expressed in familiar ID notation as follows:

(172) a.   H $\begin{bmatrix} \text{LEX: -} \\ \text{SUBCAT: } \langle \rangle \end{bmatrix}$ → H $\begin{bmatrix} \text{LEX: -} \end{bmatrix}$ C

     b.   H $\begin{bmatrix} \text{LEX: -} \\ \text{SUBCAT: } \langle \_ \rangle \end{bmatrix}$ → H $\begin{bmatrix} \text{LEX: +} \end{bmatrix}$ C*

     c.   H $\begin{bmatrix} \text{LEX: -} \\ \text{SUBCAT: } \langle \rangle \end{bmatrix}$ → H $\begin{bmatrix} \text{LEX: +} \\ \text{INV: +} \end{bmatrix}$ C*

The first rule covers, among other things, the standard S → NP VP—a phrasal head combines with its final complement. The second rule constructs phrasal heads still requiring their final complement, and the third rule covers inverted structures in English such as *Did Sandy buy a car?* It provides them with a relatively flat analysis. These are just immediate dominance (ID) rules which say nothing about the relative ordering of the constituents. Thus, the following linear precedence (LP) rules are provided to account for order.

(173) a.   H LEX+ < C

     b.   H LEX- > C

     c. $C^1 \leq C^2$

The first says that a lexical head precedes its complement (e.g. "loves Leslie"), and the second says that a nonlexical head follows its complement (e.g. "Sandy loves Leslie"). The final rule stipulates that complements appear in their obliqueness ordering.

Pollard and Sag (1994, Chr. 9) accept arguments from Borsley that there is a problem with this structuring of information as formulated, and this inspired the partitioning of SUBCAT into SUBJ and COMPS. In English, case marking PPs are sufficient to provide an example of the problem. Essentially, such a preposition subcategorizes for one argument, but that argument is an oblique argument, not a subject. The preposition is a lexical head expecting its sole argument to occur to its right; this is what the LP constraint dictates, but the ID schema don't allow lexical heads to combine with *all* of their complements unless they are inverted (the second rule demands that combination happen with all but one complement). Under the revision suggested by Borsley, valency features on such heads specify the SUBJ list to be empty, and the COMPS list to contain one element. The ID schema and valency reduction principle are adjusted accordingly.

A simple solution for the problem would be to mark nonpredicative prepositions as [INV+]. However, a number of other aesthetic reasons are provided by Pollard and Sag (1994, Chr. 9) to further motivate the change. Many of these can be seen as boiling down to the convenience of being able to refer to 'subject' rather than 'least oblique element of the subcat list'. Obviously, a net increase in linguistic ontology ensues when the notion is used

to refer to heads as 'subjectless'—that is, possessing least oblique complements that do not count as subjects. However, our view, as apparent from discussion in the preceding sections, is that the constructions typically thought of as subjectless have enough subject properties to make the assertion contentious (if one accepts 'subject' as a contentful syntactic notion in the first place). Our solution is to drop the notion of syntactic subject from linguistic ontology, reverting to a position in which it can be defined from less disputable properties of linguistic objects.

In this paper we initiate exploration of the consequences of a different solution to this problem. We propose the alternative ID and LP constraints in (174) and (175). However, this change is somewhat orthogonal to our other proposal connected to agreement control. That proposal, discussed in the next section of this paper, could be implemented under the Pollard and Sag (1994, Chr. 9) version of HPSG as well as in the one we offer here. Nonetheless we propose this first change here because it is consistent with our view that 'grammatical subject' isn't as productive a notion as 'logical subject'.

The alternative solution does not use the feature INV which prejudices certain heads as having a canonical position, and others as inverted. Instead we suggest a feature called POS associated with lexical heads. It is reasonable to think of the subcategorization frame of a verb as a local domain in which the head occurs, and that a head declares its position within that domain as at the start, the end, or somewhere in the middle (cf. Reape, 1990, 1994). Thus, we posit POS as a feature of lexical heads which can take one of three values: b, m or e (for beginning, middle and end). We omit detail of the relation between this and other proposals that suggest positional features (e.g. Nerbonne & Mullen, 1999). We suppose that the feature is appropriate only to lexical signs (just as DTRS is appropriate only to phrasal signs), because we cannot at present think of a good reason to think that a phrase will position itself in a larger domain in the same way that a lexical item will position itself among its complements. In fact, we think there is good reason that phrases are positioned in larger units differently than the heads of phrases are within their units. For example, in English a transitive verb declares that it occurs in the middle of its complements, but a verb phrase with the transitive verb as its head occurs after its complement. It is irrelevant that we take the feature as appropriate to only heads—the feature could be specified on nonheads as well, but our theory will only interpret the feature as specified on nonvacuously subcategorizing elements.

(174) a. A saturated phrasal sign can have a head that doesn't appear in the middle of its complements and which takes all its subcategorized complements.

b. A phrasal sign subcategorizing for a single synsem object can have a lexical head that appears in the middle of its complements and at least one complement.

(175) a. H LEX- > C

b. H $\begin{bmatrix} \text{lex: } + \\ \text{pos: } \neg \text{ e} \end{bmatrix}$ < C

c. H $\begin{bmatrix} \text{lex: } + \\ \text{pos: e} \end{bmatrix}$ > C

    d. $C^1 \leq C^2$

Here we have reduced the number of ID rules and increased the LP rules.

    The ID schema can be expressed in alternative notation as:

(176) a.   H $\begin{bmatrix} \text{LEX: -} \\ \text{SUBCAT: } \langle \rangle \end{bmatrix} \rightarrow$ H $\neg\begin{bmatrix} \text{POS: m} \end{bmatrix}$ C*

     b.   H $\begin{bmatrix} \text{LEX: -} \\ \text{SUBCAT: } \langle \underline{} \rangle \end{bmatrix} \rightarrow$ H $\begin{bmatrix} \text{POS: m} \end{bmatrix}$ C$^+$

    As the POS feature is appropriate only to lexical signs, it is obviously not a head feature, nor is it shared between mother and head daughter by other means. The new ID rules differ from the originals in the following ways: they do not stipulate whether the head daughter is lexical or not; realizing no complements is an option only when the SUBCAT list on the head daughter is empty (no unary branches);[19] however both ID rules are mutually exclusive due to their specification of POS. The first ID rule can be further restricted to C^+ rather than C^* to prevent nonterminating chains of vacuous unary branches on the head; as it's stated, it only prevents unary branches from lexical heads to phrasal heads. The negation in the ID rules is just a value negation, but the negation in (176) can be satisfied by a head lacking the POS feature as well as one that is either [POS b] or [POS e].

    The following table indicates how standard phrase structure rules for English, and corresponding examples, correspond to applications of these ID and LP constraints.

Structure	Example	Schema	LP
DP $\longrightarrow$ D N	my car	1	2
PP $\longrightarrow$ P NP	to Leslie	1	2
PP $\longrightarrow$ P NP	on the highway	2	2
VP $\longrightarrow$ V NP	drove my car	2	2
S $\longrightarrow$ NP VP	Val drove my car	1	1
S $\longrightarrow$ V NP VP	Did Val drive my car	1	2, 4
S $\longrightarrow$ NP V	Leslie slept	1	3

The two prepositional phrases illustrate the difference between predicative and nonpredicative PPs—they each depend on different rule schema. Inverted clauses and clauses with intransitive verbs fall under the same rule schema. In fact, it is the same schema that puts a subject together with a transitive VP and which builds a nonpredicative PP. Note that there are no instances of vacuous applications of rules (using unary branching structures) such as would otherwise be necessary in order to build a predication using an intransitive verb.

    Again, we emphasize that the account of the Spanish psychological predicates in their various contexts that we are about to provide does not hinge on reverting to a unified

---

[19]This isn't stipulated by the rule, but is a consequence of it, in conjunction with the subcategorization feature principle.

SUBCAT list. Nonetheless, we revert to that theoretical position because we do not feel that sufficient evidence yet argues against it. At any rate, analysis of these predicates has demonstrated that deciding which argument qualifies as subject is a troubled issue. Deciding which is leftmost and which controls agreement is not (nor is that decision a wholly idiosyncratic property of lexical items (cf. Chr 7, Pollard & Sag, 1994)). Thus the theory we are about to offer sits happily with our thoughts on valence structure in general, but is also compatible with received wisdom in the theory of HPSG in which subjects are distinguished as special grammatical functions.

5 An HPSG Account of Spanish Psychological Predicates

5.1 Lexical level

First, we present the HPSG treatment of a verb taking a canonical nominative subject in order to show the contrast with those psychological verbs subcategorizing for a noncanonical subject.

A primary aim is to determine how valency argument structure maps into the semantic argument structure. We take as an example the verb *temer* 'to fear' in a previous example, a Type 5 predicate, which is repeated in (177):

(177) Oliva teme   a los terroristas
      Oliva fears-3rd-sg to the terrorists
      'Oliva fears the terrorists'

The LOCAL value for the lexical entry of the verb *teme* "fears-3rd-sg" is described in (178):

$$(178) \begin{bmatrix} \text{CAT:} & \begin{bmatrix} \text{HEAD:} & {}_{verb}\begin{bmatrix}\text{VFORM: } fin\end{bmatrix} \\ \text{SUBCAT:} & \left\langle \text{NP}[nom]\!: \boxed{1}[3rd, sg], \text{PP}[a]\,\boxed{2} \right\rangle \end{bmatrix} \\ \text{CONTENT:} & \begin{bmatrix} \text{RELN: } temer \\ \text{FEARER: } \boxed{1} \\ \text{FEARED: } \boxed{2} \end{bmatrix} \end{bmatrix}$$

As part of the syntactic constraints, the feature value CAT determines how the subject and complements are selected by verbs via the valency principle. By the same principle, the NP *Oliva* is assigned nominative case and accusative case will be the case value of the prepositional object *los terroristas*. Note the excerpt of local information from the lexical entry for the head noun of NP:$\boxed{1}$ given in (179):

$$(179) \begin{bmatrix} \text{CAT:} & \begin{bmatrix}\text{HEAD: noun}\end{bmatrix} \\ \text{CONTENT:} & \begin{bmatrix} \text{INDEX:} & \boxed{1}\begin{bmatrix}\text{PER: 3rd} \\ \text{NUM: sing}\end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Concerning the verb semantics, in (178) the feature CONTENT specifies that *teme* is a semantic relation of type *temer* 'to-fear' and this relation involves two arguments: FEARER and FEARED whose values are two indices: [1] pointing at the referential index of the subject, and [2] directly anchored to the referential index of the object.[20] Indices determine the agreement features: PER(person), NUM (number) and GEN (gender) which are internal to them, although, in this particular nominal head GEN is not relevant and consequently omitted. Recall that those elements sharing the same index are token-identical and will therefore have the same agreement features and values.

The HPSG's account for role assignment is based on structure sharing of the SUBCAT indices with the value of some semantic argument of the verb's CONTENT value. This is the key to the specification of valency arguments and how the assignment of their cases and semantic arguments are captured within the lexicon.

The main difficulty in the analysis of psychological predicates arises when an account of a noncanonical subject and a nominative primary object must be formulated. Moure (1995, p. 101) argues that the subject of the verb *gustan* is the NP in postverbal position (bearing nominative case) and the initial constituent is an indirect object marked for the dative case *me*. Belletti and Rizzi (1988) claim that the constructions involve two nonsubject arguments. Current theories allow competing views and try to propose a syntax-semantics account of these verbs with the nominative NP, the syntactic object (non-subject), agreeing with the verb rather than the (dative) syntactic subject (without necessitating that the notion of subject participate in the explanation).[21] Recall the example:

(180)
Me	gustan	las zanahorias
Dat-1sg	like$_i$	the carrots$_i$

'I like carrots'

HPSG assumes that subjects as well as complements are selected by verbs. Under the assumptions we adopt, if one must identify an argument as subject (distinct from leftmost argument or agreement controller), then it might as well be just the leftmost element of the SUBCAT list, as it is the least oblique element. Let consider example (181), a preliminary sketch of the lexical entry for the verb *gustan* as used in (180).

$$
(181) \begin{bmatrix} \text{CAT:} & \begin{bmatrix} \text{HEAD:} & _{verb}\begin{bmatrix}\text{VFORM: fin}\end{bmatrix} \\ \text{SUBCAT:} & \langle \text{NP}[dat]:\boxed{1}, \text{NP}[nom]:\boxed{2}\rangle \end{bmatrix} \\ \text{CONTENT:} & \begin{bmatrix} \text{RELN: } gustar \\ \text{LIKER: } \boxed{1} \\ \text{LIKED: } \boxed{2} \end{bmatrix} \end{bmatrix}
$$

Firstly, the syntactic constraints inside the feature CAT require that the subject of the verb *gustan* be an NP bearing dative case; no constraints are imposed on the INDEX of that NP thus PER, NUM and GEN are unspecified. Secondly, this verb subcategorizes for primary

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[20] Nominal heads are assigned referential indices, as opposed to expletive pronouns (*it* and *there*).

[21] This preserves S V O word order in syntax.

objects bearing nominative case. One can easily prove this (for oblique case assignments) by replacing the NP in question by a tonic pronoun as in (182):

(182) Me   gustan   ellas
      DAT-Cl like-3rd-pl they(feminine)
      'I like them'

Finally, related to the meaning of this predicate, the CONTENT value explains that a relation of type *gustar* exists and that relation necessitates two arguments: the LIKER role whose value is an index attached to the referential index of the subject, and the LIKED role with a value attached to the referential index of the primary object. Thus, at the lexical level, the syntactic arguments required by the verb are mapped into their semantic values.

To summarize this analysis so far, HPSG proves to be an adequate formalism to define this mismatch between valency argument structure and semantic arguments as it was shown in the specific case of the Spanish psychological verbs. The mismatch is not idiosyncratic to individual lexical entries, but to classes of psychological predicates, much like the case of classes of valency expectations in the case of complement control (see Chr. 7, Pollard & Sag, 1994).

5.2 Agreement Control

Frequently so far in this paper we have referred to the controller of agreement properties on the verb. Other constructions also have agreement controllers as is evident from the following examples.

(183) *a books / a book

(184) the books$_i$ I hated were the ones Val quoted from$_i$

vs.

*the books$_i$ I hated was the ones Val quoted from$_i$

(185) She gave help both to Val and Sal

vs.

*She gave help both to Val

It is actually misleading to use a term that suggests an asymmetric relation in the way that "control" does, for the concept which is ultimately analyzed in quite symmetric structure sharing. However, the term is nonetheless useful and harmless enough.

We propose an additional head feature on signs, within the SYNSEM | LOCAL | HEAD information chunk. The feature is AGRC, for agreement controller. We presume this to be a SYNSEM valued feature (thus risking no violation of locality constraints).[22] As we

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[22]It would be worth exploring whether the value could be set as just the index of the SYNSEM and not the entire SYNSEM: depending on how case is specified on finite and nonfinite verbs, the proposal using the entire SYNSEM could lead to inconsistency in, for example, control constructions.

posit the feature as a head feature, the head feature principle insures that the value for this feature is token identical between head daughter and root sign. We assume it to be a lexical property of unsaturated heads that its AGRC is coindexed with one of its SUBCAT elements. However, whether phonological/morphological consequences follow depends on further structure sharing of that feature with, for example, PHON values. For the present we are not concerned with the AGRC value on saturated lexical signs—for those there are two immediate possibilities: the value can be unspecified, possibly instantiated in the context of an utterance; the value can refer to its own synsem, creating a cyclic feature structure (which is already present in HPSG analyses of NPs, via mutual selection of determiner and noun). To express a definite opinion, we opt for the latter. However, nothing at all here hinges on the value of the AGRC feature on saturated lexical signs.

First we revise our lexical entry for *gustar* (to like) from (181) with the entry in (186) which incorporates our agreement control theory in HPSG. By way of comparison, we offer a lexical entry for *molestar* (to bother) as well, a Type 1 predicate. As mentioned above, the advantage of this theory is that it entails no necessary connection between AGRC and the leftmost element of SUBCAT.

(186)
$$
\begin{bmatrix}
\text{PHON: } f(\textit{gustar}, \boxed{2}, \boxed{4}) \\
\text{CAT: } \begin{bmatrix}
\text{HEAD: } {}_{\text{verb}} \begin{bmatrix} \text{VFORM: } \boxed{4}\,\text{fin} \\ \text{AGRC: } \boxed{3}:\boxed{2} \end{bmatrix} \\
\text{SUBCAT: } \langle \text{NP}[\textit{dat}]:\boxed{1}, \boxed{3}\text{NP}[\textit{nom}]:\boxed{2}\rangle
\end{bmatrix} \\
\text{CONTENT: } \begin{bmatrix} \text{RELN: } \textit{gustar} \\ \text{LIKER: } \boxed{1} \\ \text{LIKED: } \boxed{2} \end{bmatrix}
\end{bmatrix}
$$

(187)
$$
\begin{bmatrix}
\text{PHON: } f(\textit{molestar}, \boxed{2}, \boxed{5}) \\
\text{CAT: } \begin{bmatrix}
\text{HEAD: } {}_{\text{verb}} \begin{bmatrix} \text{VFORM: } \boxed{5}\,\text{fin} \\ \text{AGRC: } \boxed{3} \end{bmatrix} \\
\text{SUBCAT: } \langle \boxed{3}\text{NP}[\textit{nom}]:\boxed{2}, \boxed{4}\text{NP}[\textit{dat}]:\boxed{1},\rangle
\end{bmatrix} \\
\text{CONTENT: } \begin{bmatrix} \text{RELN: } \textit{molestar} \\ \text{BOTHERER: } \boxed{2} \\ \text{BOTHERED: } \boxed{1} \end{bmatrix}
\end{bmatrix}
$$

The PHON value is a function (f) of the semantic index of the agreement controller, the base form of the verb and the verb form (cf. Kathol, 1994).

In any case, certain consequences of this proposal are immediately obvious. The AGRC feature, as a head feature, and unlike the SUBJ feature, is not a valency feature and thus does not get reduced between levels of constituency in phrase structure. Yet, AGRC has systematic relations to the Borsley-Pollard-Sag SUBJ feature. Take English as an example language. The agreement controller in English is, even for nonpredicative PPs, the leftmost element of SUBCAT (see (185)). However, the data in §3.3.2 demonstrated that this is not universally the case within English. For most constructions in English, the leftmost SUBCAT element and AGRC element coincide with the usual notion of subject. The problem

we have been pointing to in Spanish is a divergence of SUBCAT elements from the usual position for the AGRC in the case of psychological predicates. That is, neither in Spanish is it universally the case that the leftmost SUBCAT element is the agreement controller.[23] Nonetheless, verbs which diverge from the English SVO pattern do so in a systematic way which abets generalization across lexical entries. Therefore, it is advantageous to discriminate the two notions.

5.3 Embedded Contexts

In embedded contexts in English, because of the (parochial) near universality of leftmost SUBCAT element being the AGRC element, there is a systematic relationship which is that the 'subject' may raise to subject and may be a subject controller, and also may raise to object and be object of a control verb.[24] For English, we specify representative examples of the three sorts of control predicates as follows:[25]

$$(188)\quad \begin{bmatrix} \text{PHON:} & \text{morph(permit,}\boxed{1}) \\ \text{SS:} & \begin{bmatrix} \text{LOC:} & \begin{bmatrix} \text{CAT:} & \begin{bmatrix} \text{HEAD:} \begin{bmatrix} \text{verb: X} \\ \text{AGRC: } \boxed{3} \end{bmatrix} \\ \text{SUBCAT: } \langle \boxed{3}\text{NP:}\boxed{1},\ \boxed{4}\text{NP:}\boxed{2},\ \boxed{5}\ \text{VP-Y:}\boxed{6}\begin{bmatrix} \text{FIN: -} \\ \text{AGRC: }\boxed{4} \\ \text{SUBCAT: }\langle\boxed{4}NP:\boxed{2}\rangle \end{bmatrix}\rangle \end{bmatrix} \\ \text{CONTENT:} \begin{bmatrix} \text{RELN: } \textit{permit} \\ \text{X-ER: }\boxed{1} \\ \text{X-ED: }\boxed{2} \\ \text{TO-Y: }\boxed{6} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Leslie permitted Val to enter.

$$(189)\quad \begin{bmatrix} \text{PHON:} & \text{morph(promise,}\boxed{1}) \\ \text{SS:} & \begin{bmatrix} \text{LOC:} & \begin{bmatrix} \text{CAT:} & \begin{bmatrix} \text{HEAD:} \begin{bmatrix} \text{verb: X} \\ \text{AGRC: } \boxed{3} \end{bmatrix} \\ \text{SUBCAT: } \langle \boxed{3}\text{NP:}\boxed{1},\ \boxed{4}\text{NP:}\boxed{2},\ \boxed{5}\ \text{VP-Y:}\boxed{6}\begin{bmatrix} \text{FIN: -} \\ \text{AGRC: }\boxed{3} \\ \text{SUBCAT: }\langle\boxed{3}NP:\boxed{1}\rangle \end{bmatrix}\rangle \end{bmatrix} \\ \text{CONTENT:} \begin{bmatrix} \text{RELN: } \textit{promise} \\ \text{X-ER: }\boxed{1} \\ \text{X-ED: }\boxed{2} \\ \text{TO-Y: }\boxed{6} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Leslie promised Val to enter.

---

[23]In an analysis along these lines that keeps a SUBJ/COMPS distinction, the AGRC can be among the COMPS; however, such an analysis must defend why SUBJ is discriminated.

[24]Of course, connotations of movement here are intended to be strictly metaphorical. We toe the party line on structure sharing accounts over movement accounts.

[25]The abbreviation SS is used for SYNSEM.

$$(190) \quad \begin{bmatrix} \text{PHON:} & \text{morph(want, [1])} \\ \text{SS:} & \begin{bmatrix} \text{LOC:} & \begin{bmatrix} \text{CAT:} & \begin{bmatrix} \text{HEAD:} & \begin{bmatrix} \text{verb: X} \\ \text{AGRC: [3]} \end{bmatrix} \\ \text{SUBCAT:} & \langle [3]\text{NP:}[1], \ [4] \ \text{VP-Y:}[5] \begin{bmatrix} \text{FIN: -} \\ \text{AGRC: [3]} \\ \text{SUBCAT:} \ \langle [3]NP:[1] \rangle \end{bmatrix} \rangle \end{bmatrix} \\ \text{CONTENT:} & \begin{bmatrix} \text{R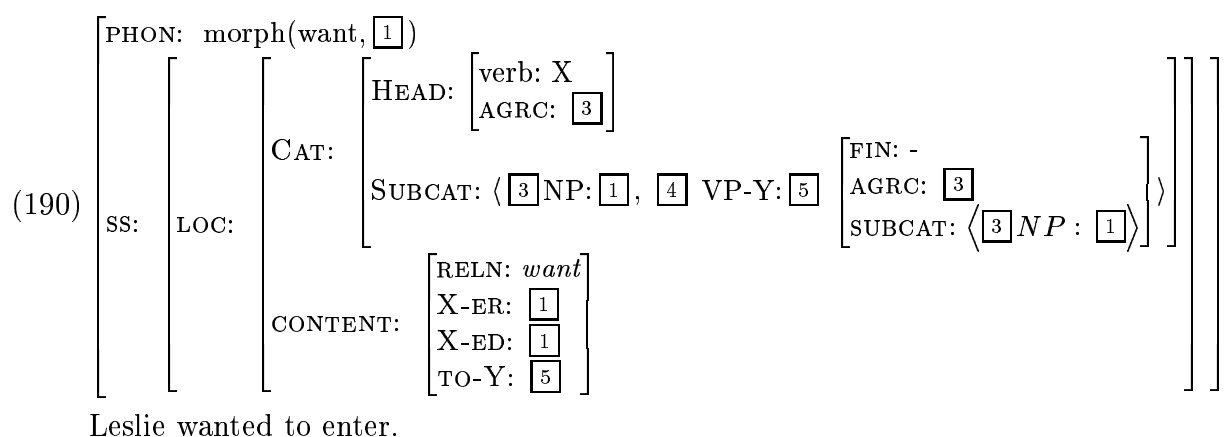ELN: } want \\ \text{X-ER: [1]} \\ \text{X-ED: [1]} \\ \text{TO-Y: [5]} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$
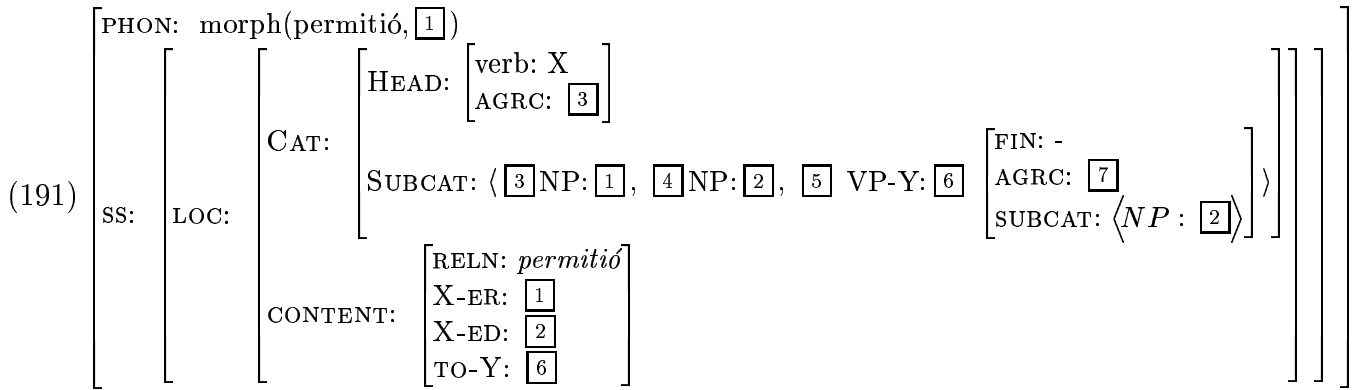
Leslie wanted to enter.

In each of (188–190), the agreement controller of the control verb is the leftmost element of the control verb's SUBCAT list. This coincides with the agreement controller of the embedded nonfinite VP precisely for subject control verbs. However, on the VP, whether agreement control has any consequence depends on whether it is finite or nonfinite. Thus, the surface form of finite verbs (possibly) depends on the agreement controller, and likewise phonology of the nonfinite verb does not depend at all on its agreement controller. With respect to binding theory, nothing is particularly special about subjects *per se* there, either: a reflexive pronoun must have an antecedent among its less oblique sisters and aunts.[26] In §5.3 we demonstrate how the information partition we suggest fits in with important embedding contexts in Spanish, and in §5.5 we show how things integrate with binding theory.

In §3 a range of data was presented that demonstrated how difficult it is to identify a subject in psychological predicates using basic intuitions about logical subjects and the family of properties associated with grammatical subjects (Keenan, 1975). On the other hand, two salient properties emerged as indicative of potential binders of reflexive pronouns, and shared arguments in control and raising constructions. In this section we encapsulate the embedding data with reference to Spanish. For consistency of argument we rely on the SUBCAT-only version of HPSG that we developed in §4, with the AGRC analysis described in the preceding section.

In Spanish, the correlates of (188–190) are, with *gustar* (191–196).

---

[26]Properly, tree-configurational terms for HPSG binding theory are unnecessary. However, those terms do make communication with the community at large somewhat easier, occasionally.

(191)

$$
\begin{bmatrix}
\text{PHON: } \text{morph}(\text{permitió}, \boxed{1}) \\
\text{SS: } \begin{bmatrix}
\text{LOC: } \begin{bmatrix}
\text{CAT: } \begin{bmatrix}
\text{HEAD: } \begin{bmatrix} \text{verb: X} \\ \text{AGRC: } \boxed{3} \end{bmatrix} \\
\text{SUBCAT: } \langle \boxed{3}\text{NP:}\boxed{1},\ \boxed{4}\text{NP:}\boxed{2},\ \boxed{5}\ \text{VP-Y:}\boxed{6} \begin{bmatrix} \text{FIN: -} \\ \text{AGRC: } \boxed{7} \\ \text{SUBCAT: } \langle NP : \boxed{2} \rangle \end{bmatrix} \rangle
\end{bmatrix} \\
\text{CONTENT: } \begin{bmatrix} \text{RELN: } \textit{permitió} \\ \text{X-ER: } \boxed{1} \\ \text{X-ED: } \boxed{2} \\ \text{TO-Y: } \boxed{6} \end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

* Leslie le   permitió   a Val gustar los músicos diabólicos
Leslie Dat-Cl permitted Val   to like the musicians evil
'Leslie permitted Val to like the evil musicians'

(192)

$$
\begin{bmatrix}
\text{PHON: } \text{morph}(\text{permitió}, \boxed{1}) \\
\text{SS: } \begin{bmatrix}
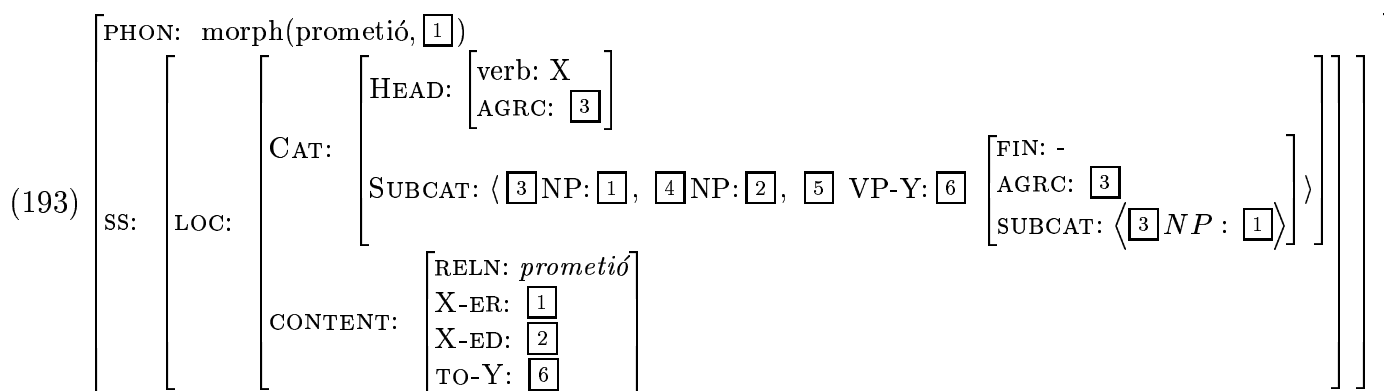\text{LOC: } \begin{bmatrix}
\text{CAT: } \begin{bmatrix}
\text{HEAD: } \begin{bmatrix} \text{verb: X} \\ \text{AGRC: } \boxed{3} \end{bmatrix} \\
\text{SUBCAT: } \langle \boxed{3}\text{NP:}\boxed{1},\ \boxed{4}\text{NP:}\boxed{2},\ \boxed{5}\ \text{VP-Y:}\boxed{6} \begin{bmatrix} \text{FIN: -} \\ \text{AGRC: } \boxed{4} \\ \text{SUBCAT: } \langle \boxed{4}NP : \boxed{2} \rangle \end{bmatrix} \rangle
\end{bmatrix} \\
\text{CONTENT: } \begin{bmatrix} \text{RELN: } \textit{permitió} \\ \text{X-ER: } \boxed{1} \\ \text{X-ED: } \boxed{2} \\ \text{TO-Y: } \boxed{6} \end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$
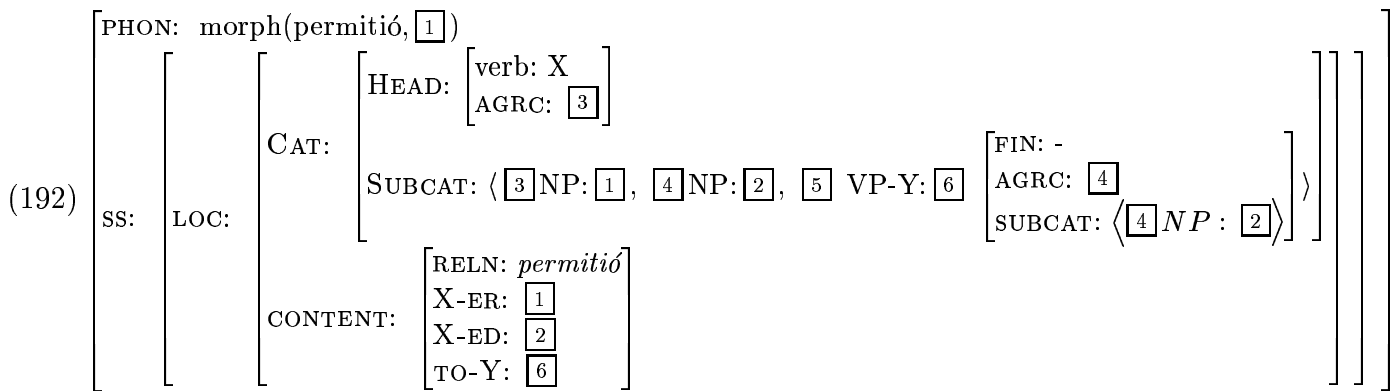
Leslie permitió   a Val molestar a los músicos diabólicos
Leslie permitted Val   to bother the musicians evil
'Leslie permitted Val to bother the evil musicians'

Comparing (191) and (192), the first of which is ungrammatical and the second of which is fine, it is evident that a reasonable generalization of the control principle may be that the agreement controller of the embedded VP must be a sister to the embedded VP, or more generally, that it must be in the same SUBCAT list. In object control, this amounts to a constraint that the agreement controller of the embedded VP be coindexed with a less oblique sister NP, and in subject control, the configuration of sister isn't realized, but co-presence on the same SUBCAT list is.

$$
(193) \quad
\begin{bmatrix}
\text{PHON:} & \text{morph(prometió, } \boxed{1}) \\
\text{SS:} & \begin{bmatrix}
\text{LOC:} & \begin{bmatrix}
\text{CAT:} & \begin{bmatrix}
\text{HEAD:} & \begin{bmatrix} \text{verb: X} \\ \text{AGRC: } \boxed{3} \end{bmatrix} \\
\text{SUBCAT:} & \left\langle \boxed{3}\text{NP: }\boxed{1},\ \boxed{4}\text{NP: }\boxed{2},\ \boxed{5}\ \text{VP-Y: }\boxed{6} \begin{bmatrix} \text{FIN: -} \\ \text{AGRC: } \boxed{3} \\ \text{SUBCAT: } \langle \boxed{3} NP: \boxed{1} \rangle \end{bmatrix} \right\rangle
\end{bmatrix} \\
\text{CONTENT:} & \begin{bmatrix} \text{RELN: } \textit{prometió} \\ \text{X-ER: } \boxed{1} \\ \text{X-ED: } \boxed{2} \\ \text{TO-Y: } \boxed{6} \end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$
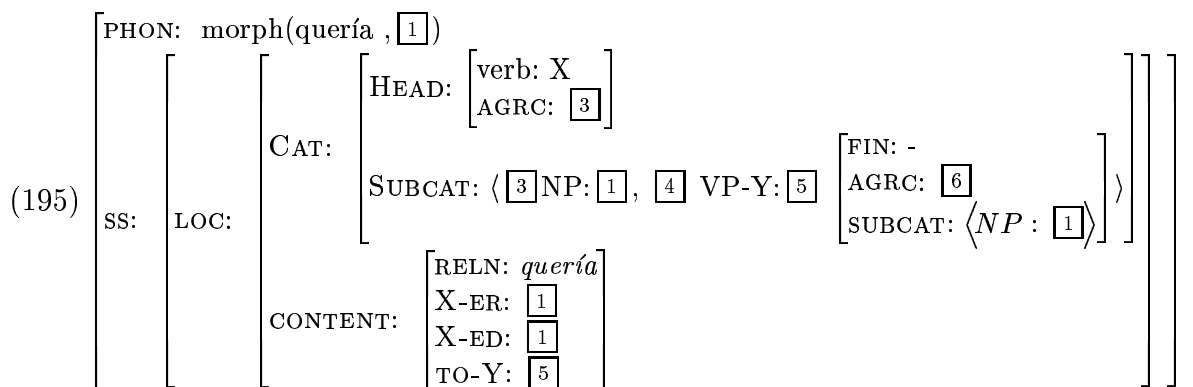
Leslie le   prometió a Val molestar   a sus padres
Leslie Dat-Cl promised Val   to bother to his parents
'Leslie promised Val to bother his parents'

$$
(194) \quad
\begin{bmatrix}
\text{PHON:} & \text{morph(prometió, } \boxed{1}) \\
\text{SS:} & \begin{bmatrix}
\text{LOC:} & \begin{bmatrix}
\text{CAT:} & \begin{bmatrix}
\text{HEAD:} & \begin{bmatrix} \text{verb: X} \\ \text{AGRC: } \boxed{3} \end{bmatrix} \\
\text{SUBCAT:} & \left\langle \boxed{3}\text{NP: }\boxed{1},\ \boxed{4}\text{NP: }\boxed{2},\ \boxed{5}\ \text{VP-Y: }\boxed{6} \begin{bmatrix} \text{FIN: -} \\ \text{AGRC: } \boxed{7} \\ \text{SUBCAT: } \langle NP: \boxed{1} \rangle \end{bmatrix} \right\rangle
\end{bmatrix} \\
\text{CONTENT:} & \begin{bmatrix} \text{RELN: } \textit{prometió} \\ \text{X-ER: } \boxed{1} \\ \text{X-ED: } \boxed{2} \\ \text{TO-Y: } \boxed{6} \end{bmatrix}
\end{bmatrix}
\end{bmatrix}
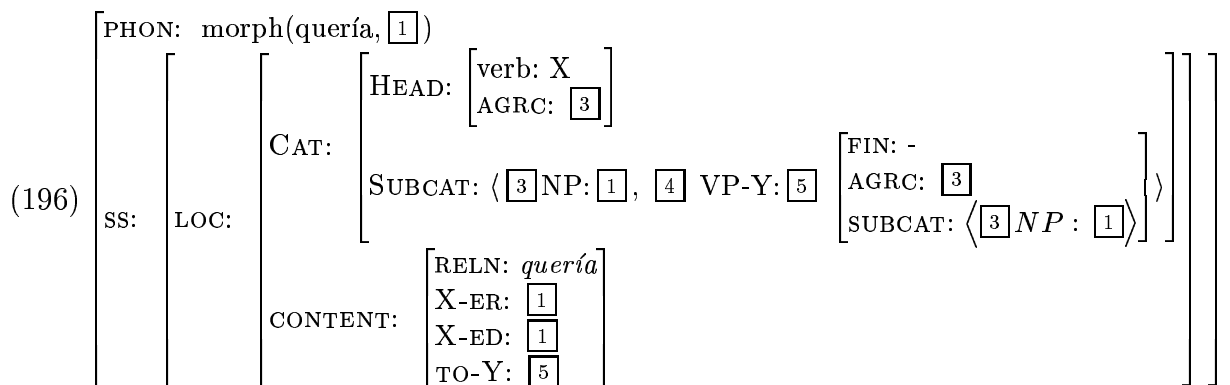\end{bmatrix}
$$
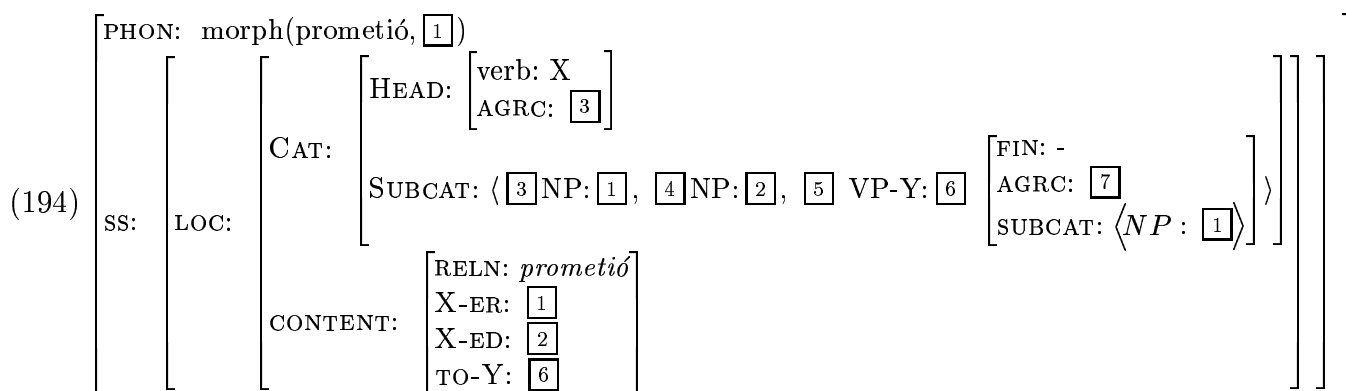
* Leslie prometió a Val gustar las uvas
   Leslie promised Val   to like the grapes
   'Leslie promised Val to like the grapes'

Thus, subject control data so far (193–194) conforms to our general principle for object control predicates, as well: the agreement controller of the embedded VP must be coindexed with a less oblique NP on the SUBCAT list of the control verb. Finally we consider syntactically two place control relations.

$$
(195) \quad
\begin{bmatrix}
\text{PHON:} & \text{morph(quería, } \boxed{1}) \\
\text{SS:} & \begin{bmatrix}
\text{LOC:} & \begin{bmatrix}
\text{CAT:} & \begin{bmatrix}
\text{HEAD:} & \begin{bmatrix} \text{verb: X} \\ \text{AGRC: } \boxed{3} \end{bmatrix} \\
\text{SUBCAT:} & \left\langle \boxed{3}\text{NP: }\boxed{1},\ \boxed{4}\ \text{VP-Y: }\boxed{5} \begin{bmatrix} \text{FIN: -} \\ \text{AGRC: } \boxed{6} \\ \text{SUBCAT: } \langle NP: \boxed{1} \rangle \end{bmatrix} \right\rangle
\end{bmatrix} \\
\text{CONTENT:} & \begin{bmatrix} \text{RELN: } \textit{quería} \\ \text{X-ER: } \boxed{1} \\ \text{X-ED: } \boxed{1} \\ \text{TO-Y: } \boxed{5} \end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

* (A) Leslie (le)   quería gustar su abogado
Leslie   (Dat-Cl) wanted to like his lawyer
'Leslie wanted to like his lawyer'

$$
(196) \quad
\begin{bmatrix}
\text{PHON:} & \text{morph(quería, }\boxed{1}) \\
\text{SS:} &
\begin{bmatrix}
\text{LOC:} &
\begin{bmatrix}
\text{CAT:} &
\begin{bmatrix}
\text{HEAD:} & \begin{bmatrix} \text{verb: X} \\ \text{AGRC:} & \boxed{3} \end{bmatrix} \\
\text{SUBCAT:} & \langle \boxed{3}\text{NP:}\boxed{1}, \boxed{4}\ \text{VP-Y:}\boxed{5}\ \begin{bmatrix} \text{FIN: -} \\ \text{AGRC:} & \boxed{3} \\ \text{SUBCAT:} & \langle \boxed{3}NP:\boxed{1}\rangle \end{bmatrix} \rangle
\end{bmatrix} \\
\text{CONTENT:} &
\begin{bmatrix}
\text{RELN:} & \textit{quería} \\
\text{X-ER:} & \boxed{1} \\
\text{X-ED:} & \boxed{1} \\
\text{TO-Y:} & \boxed{5}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

Leslie quería molestar a su abogado
Leslie wanted to bother his lawyer
'Leslie wanted to bother his lawyer'

Examples (195–196) illustrate that the same principle holds true of two place subject control verbs as for object control and three place subject control verbs: the agreement controller of the embedded VP must be co-indexed with a less oblique argument on the same SUBCAT frame. This generalizes the control theory of Pollard and Sag (1994) which presumes coindexing between the subject of the embedded nonfinite VP and another argument. One of our points here is that 'subject' is simply too restrictive a notion. For control and raising with psychological predicates agreement control is sufficient and explanatory in a way that 'subject' is not. Yet, agreement control also accounts for the other predicates as well.
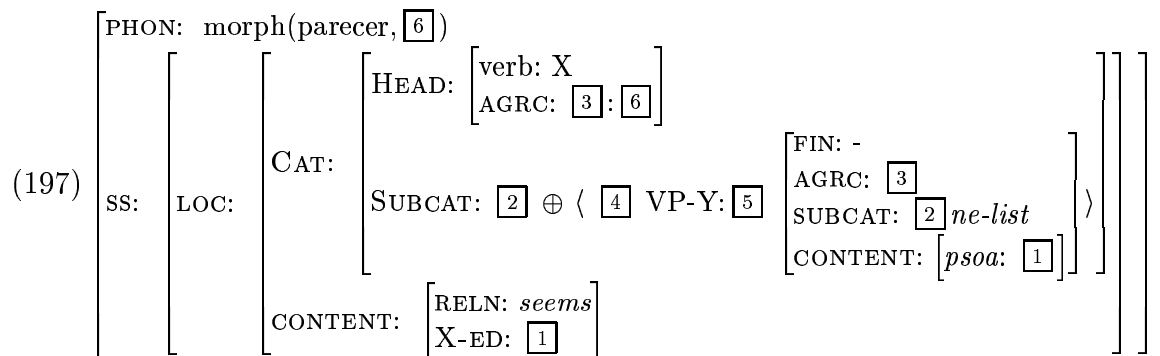
PRINCIPLE **1** PRINCIPLE OF COMPLEMENT CONTROL

1. *The agreement control value of a nonfinite VP embedded as a complement in a control predicate will be coindexed with a less oblique constituent on the same subcat list as the embedded VP.*

2. *The agreement control value on a V[LEX +] will be coindexed with one of its SUBCAT elements.*

PRINCIPLE **2** PRINCIPLE OF COMPLEMENT CONTROL (FORMAL VERSION)
If a lexical entry E subcategorizes for a structure X whose index has a role in the semantic content of E and also a structure Y that subcategorizes for a structure Z coindexed with X.

1. *Then the AGRC value of Y will be coindexed with X.*

2. *The AGRC value on a V[LEX +] will be coindexed with one of its SUBCAT elements.*

The raising data is also easily accommodated. First we provide a lexical entry for *parecer* (197).
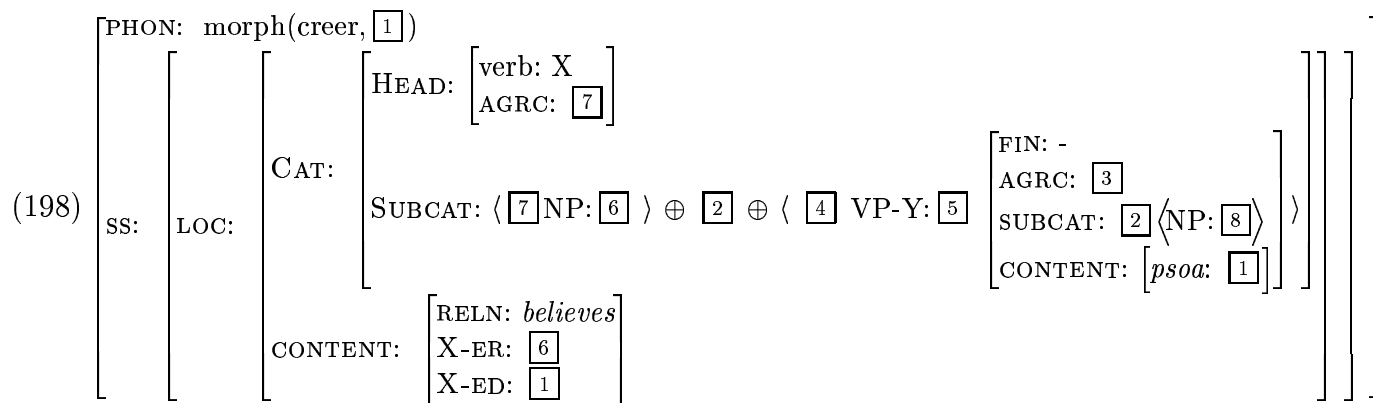
$$
(197) \quad
\begin{bmatrix}
\text{PHON: } \text{morph(parecer, } \boxed{6} \text{)} \\
\text{SS: } \begin{bmatrix} \text{LOC: } \begin{bmatrix} \text{CAT: } \begin{bmatrix} \text{HEAD: } \begin{bmatrix} \text{verb: X} \\ \text{AGRC: } \boxed{3} : \boxed{6} \end{bmatrix} \\[2em] \text{SUBCAT: } \boxed{2} \oplus \langle\; \boxed{4}\; \text{VP-Y: } \boxed{5} \begin{bmatrix} \text{FIN: -} \\ \text{AGRC: } \boxed{3} \\ \text{SUBCAT: } \boxed{2}\; \textit{ne-list} \\ \text{CONTENT: } [\textit{psoa: } \boxed{1}] \end{bmatrix} \;\rangle \end{bmatrix} \\[3em] \text{CONTENT: } \begin{bmatrix} \text{RELN: } \textit{seems} \\ \text{X-ED: } \boxed{1} \end{bmatrix} \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

The raised SUBCAT list is constrained to be nonempty: *parecer*, in combination with weather predicates that do not subcategorize, require the embedded predicate to be in finite form under a complementizer; thus the complement of *parecer* in that case is saturated. The data, and the proposed lexical entry in (197) suggest adding an additional clause to the raising principle which constrains lexical entries as given by Pollard and Sag (1994, p. 140).

PRINCIPLE **3** RAISING PRINCIPLE

If E is a lexical entry whose SUBCAT *list L contains an element X not specified as expletive.*

1. *Then X is lexically assigned no semantic role in the content of E if and only if L also contains a (nonsubject) Y*[SUBCAT$\langle X \rangle$]

2. *The agreement controller on E is identical to the agreement controller on Y.*

This principle rules out lexical entries like (198) which involve semantically two-place object raising verbs (recall that the grammatical cases of object raising in §3.2.2 all involved three place embedding predicates (e.g. oblige)). The entry is ruled out because although the first condition of the Raising Principle is met—the verb subcategorizes for an NP whose index isn't an argument to the finite verb semantics, as well as for a nonfinite VP subcategorizing for the NP—but the second condition is not: the agreement controller of the embedded predicate is not agreement controller of the raising verb. On the other hand, if the agreement controller of *creer* were $\boxed{3}$ instead of $\boxed{7}$, then ungrammaticality would result because it would agree with the wrong NP. Thus, the principle correctly predicts which examples are correct for subject raising as well as why *creer* does not function as an object raising verb in Spanish (obviously, the constraint does not apply to English lexical elements, but as a lexical principle, its parochial restriction is easy to fathom).
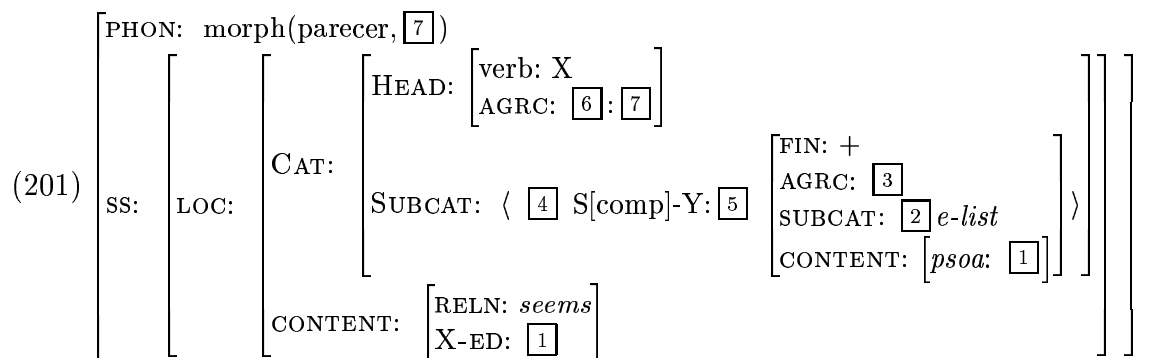
$$
(198) \begin{bmatrix} \text{PHON: morph(creer, \boxed{1})} \\ \text{SS:} \begin{bmatrix} \text{LOC:} \begin{bmatrix} \text{CAT:} \begin{bmatrix} \text{HEAD:} \begin{bmatrix} \text{verb: X} \\ \text{AGRC: \boxed{7}} \end{bmatrix} \\ \\ \text{SUBCAT: } \langle \boxed{7}\text{NP:}\boxed{6} \rangle \oplus \boxed{2} \oplus \langle \boxed{4} \text{ VP-Y:}\boxed{5} \begin{bmatrix} \text{FIN: -} \\ \text{AGRC: \boxed{3}} \\ \text{SUBCAT: \boxed{2}}\langle\text{NP:}\boxed{8}\rangle \\ \text{CONTENT: } [psoa: \boxed{1}] \end{bmatrix} \rangle \end{bmatrix} \\ \text{CONTENT:} \begin{bmatrix} \text{RELN: } believes \\ \text{X-ER: \boxed{6}} \\ \text{X-ED: \boxed{1}} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}
$$

(199) * Jose cree   Kim divertir   a los niños
       Jose$_i$ believes$_i$ Kim to amuse to the children
       Jose believes Kim amuses the children

Consider an additional example (200). With predicates in Spanish that do not expect any arguments, raising is obviously not possible. In this case *parece* will embed a that clause containing a finite sentence.

(200) Parece que llovió
      Seems that rained
      'It seems that it rained'

A lexical entry, related via lexical rule to (197) is given in (201). In this entry, the embedded clause is finite and possesses a complementizer. Note that this clause is saturated. Thus, here, the agreement controller for the verb is not one of the elements on its subcategorization list. It happens that the agreement controller for each predicate bears a singular index. We return to this point in a moment. The lexical entry satisfies the Raising Principle, vacuously: this lexical entry for *parece* does not have an element on its subcat list which does not participate in its semantics. Thus, it is irrelevant that the matrix and embedded verb do not share an agreement controller. This entry could have been presented equivalently as (202), and its congruity with (197) might be more evident.
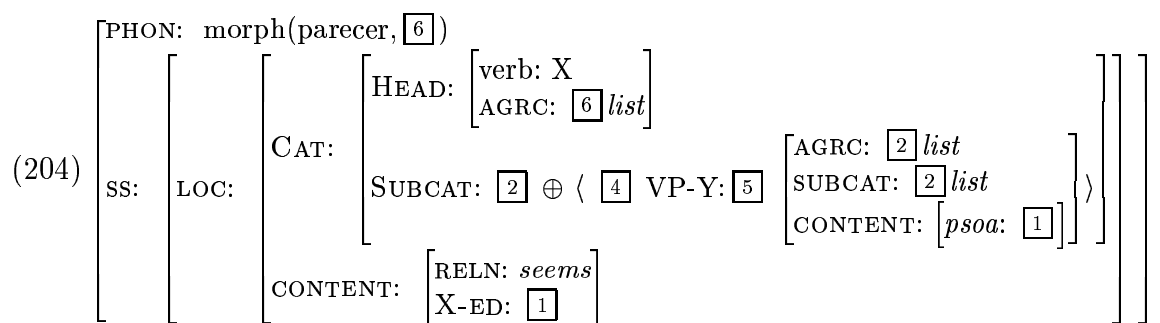
$$
(201) \begin{bmatrix} \text{PHON: morph(parecer, \boxed{7})} \\ \text{SS:} \begin{bmatrix} \text{LOC:} \begin{bmatrix} \text{CAT:} \begin{bmatrix} \text{HEAD:} \begin{bmatrix} \text{verb: X} \\ \text{AGRC: \boxed{6}:\boxed{7}} \end{bmatrix} \\ \\ \text{SUBCAT: } \langle \boxed{4} \text{ S[comp]-Y:}\boxed{5} \begin{bmatrix} \text{FIN: +} \\ \text{AGRC: \boxed{3}} \\ \text{SUBCAT: \boxed{2}} \textit{e-list} \\ \text{CONTENT: } [psoa: \boxed{1}] \end{bmatrix} \rangle \end{bmatrix} \\ \text{CONTENT:} \begin{bmatrix} \text{RELN: } seems \\ \text{X-ED: \boxed{1}} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}
$$

$$
(202) \quad
\begin{bmatrix}
\text{PHON:} & \text{morph(parecer, } \boxed{7} \text{)} \\
\text{SS:} & \begin{bmatrix}
\text{LOC:} & \begin{bmatrix}
\text{CAT:} & \begin{bmatrix}
\text{HEAD:} & \begin{bmatrix} \text{verb: X} \\ \text{AGRC:} \boxed{6} : \boxed{7} \end{bmatrix} \\
\text{SUBCAT:} & \boxed{2} \oplus \langle\ \boxed{4}\ \text{S[comp]-Y:} \boxed{5} \begin{bmatrix} \text{FIN: } + \\ \text{AGRC:} \boxed{3} \\ \text{SUBCAT:} \boxed{2} \textit{e-list} \\ \text{CONTENT:} [\textit{psoa:}\ \boxed{1}] \end{bmatrix} \rangle
\end{bmatrix} \\
\text{CONTENT:} & \begin{bmatrix} \text{RELN: } \textit{seems} \\ \text{X-ED:} \boxed{1} \end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

This suggests an alternative to supposing that AGRC is SYNSEM valued (or index valued, as discussed earlier), but to take its value as a list of SYNSEM objects that can be either empty or contain one element. This would mean that saturated objects would have an AGRC value of the empty list. Thus, instead of stipulating that the AGRC value of a head is structure shared with one of its SUBCAT elements, we would say that it is a sublist of its SUBCAT list containing zero or one element. This move would make much sense if the morphological realization function that depends on the agreement controller induced the same value, say singular, for all saturated objects, although as a function it could also depend on the predicate at stake. This would suggest a revised entry as in (203) in which the value of the two agreement controllers is still independent.

$$
(203) \quad
\begin{bmatrix}
\text{PHON:} & \text{morph(parecer, } \boxed{6} \text{)} \\
\text{SS:} & \begin{bmatrix}
\text{LOC:} & \begin{bmatrix}
\text{CAT:} & \begin{bmatrix}
\text{HEAD:} & \begin{bmatrix} \text{verb: X} \\ \text{AGRC:} \boxed{6} \textit{e-list} \end{bmatrix} \\
\text{SUBCAT:} & \boxed{2} \oplus \langle\ \boxed{4}\ \text{S[comp]-Y:} \boxed{5} \begin{bmatrix} \text{FIN: } + \\ \text{AGRC:} \boxed{2} \textit{e-list} \\ \text{SUBCAT:} \boxed{2} \textit{e-list} \\ \text{CONTENT:} [\textit{psoa:}\ \boxed{1}] \end{bmatrix} \rangle
\end{bmatrix} \\
\text{CONTENT:} & \begin{bmatrix} \text{RELN: } \textit{seems} \\ \text{X-ED:} \boxed{1} \end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

This move suggests one further. An S[comp] is constructed using the head-marker schema (which we have not discussed yet), whose details are not relevant beyond pointing out that the head is a saturated VP, and that it combines with the complementizer through the selection properties on the complementizer (see p. 46, Pollard & Sag, 1994). This means that an S[comp] is a saturated VP with additional properties. Therefore, instead of (197) and (203) with a lexical relation between them, we could just have one entry as in (204).

$$(204)\ \begin{bmatrix} \text{PHON:} & \text{morph(parecer, } \boxed{6}) \\ \text{SS:} & \begin{bmatrix} \text{LOC:} & \begin{bmatrix} \text{CAT:} & \begin{bmatrix} \text{HEAD:} & \begin{bmatrix} \text{verb: X} \\ \text{AGRC: } \boxed{6}\ list \end{bmatrix} \\ \text{SUBCAT:} & \boxed{2} \oplus \langle\ \boxed{4}\ \text{VP-Y:}\boxed{5}\ \begin{bmatrix} \text{AGRC: } \boxed{2}\ list \\ \text{SUBCAT: } \boxed{2}\ list \\ \text{CONTENT: } [psoa:\ \boxed{1}] \end{bmatrix} \rangle \end{bmatrix} \\ \text{CONTENT:} & \begin{bmatrix} \text{RELN: } seems \\ \text{X-ED: } \boxed{1} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

The list indexed by $\boxed{6}$ would be constrained to be a sublist of the one marked $\boxed{2}$. The idea would be to let the Raising Principle determine when the AGRC values have to be shared, based on whether the embedded predicate is saturated or not. This is distinct from sharing a SUBJ value, since the AGRC may be among the COMPS. The value of FIN needn't be specified. However, this would overgenerate: the finite raising verb may not embed an arbitrary finite VP, only one embedded under the complementizer. The acceptable values of FIN on the embedded predicate correlates with its saturation (and its MARKING value), but that relationship requires a lexical rule. There simply needs to be a separate entry for the embedded complementizer case from the embedded nonfinite VP case, both related via lexical rule.

We believe the solution of adding an agreement controller to the head features on signs is a good one. It enables the selection from among a list of arguments to a predicate exactly which one the predicate's agreement values co-vary with. In particular, the agreement controller need not be the subject. We have not opted to take the AGRC as having a value which is a singleton list of synsem objects, which is a reasonable alternative. Instead, we suppose it is a synsem valued feature. This allows us a uniform way to deal with agreement in pro-drop constructions in which the antecedent is understood from context as well as the constructions which are completely argumentless but which have a default setting of AGRC to some SYNSEM bearing a singular index. Nonetheless we are still debating whether the list valued feature would be more appropriate for those signs which have empty subcategorization lists, such as the weather verbs in Spanish.

It remains to examine the data on clitics and binding.

5.4   Clitics

It is evident that our lexical entries for Spanish neglect clitics. Miller and Sag (1997) assume that clitics in French are part of ARG-STR (a list appropriate only to words and which is the basis of the 'Chapter 9' binding theory (Pollard & Sag, 1994)), but do not participate in valency lists (i.e., do not appear on SUBCAT). Instead, clitics are analyzed as affixes with no place in constituent structure. Monachesi (1998) demonstrates that in Italian some clitics do have a place in constituent structure and interact with LP rules as a result. We do not intend to build a theory of clitics; we are influenced by the approach of Monachesi (1998), except that the particular clitic we are mainly interested in, the dative clitic on the experiencer is one which is not in complementary distribution with the full

dative NP—the two occur simultaneously. Thus, we do not require a lexical rule that swaps a full NP for a clitic (though something such is required for the Type 4 constructions that introduce *se*). We revise our lexical entry for *gustar* ('to like') from (186) to (205).

$$
(205) \quad
\begin{bmatrix}
\text{CAT:} &
\begin{bmatrix}
\text{HEAD:} & _{verb}
\begin{bmatrix}
\text{VFORM: fin} \\
\text{AGRC: } \boxed{3}
\end{bmatrix} \\
\text{SUBCAT:} & \langle \text{NP}[dat]: \boxed{1}, \text{CL}[dat]: \boxed{1}, \boxed{3}\,\text{NP}[nom]: \boxed{2} \rangle
\end{bmatrix} \\
\text{CONTENT:} &
\begin{bmatrix}
\text{RELN: } gustar \\
\text{LIKER: } \boxed{1} \\
\text{LIKED: } \boxed{2}
\end{bmatrix}
\end{bmatrix}
$$

$$
(206) \quad
\begin{bmatrix}
\text{CAT:} &
\begin{bmatrix}
\text{HEAD:} & _{verb}
\begin{bmatrix}
\text{VFORM: fin} \\
\text{AGRC: } \boxed{2}
\end{bmatrix} \\
\text{SUBCAT:} & \langle \boxed{2}\,\text{NP}[nom]: \boxed{1}, \boxed{3}\,\text{CL}[refl]: \boxed{1}, \rangle
\end{bmatrix} \\
\text{CONTENT:} &
\begin{bmatrix}
\text{RELN: } molestar \\
\text{BOTHERER: } \boxed{1} \\
\text{BOTHERED: } \boxed{1}
\end{bmatrix}
\end{bmatrix}
$$

Similarly we assume that (206) is the output of the lexical rule that has (187) as its input to create Type 4 constructions from Type 1 predicates, since the clitic here is argument reducing.

5.5   Binding Facts Revisited

Recall the HPSG binding theory (Pollard & Sag, 1994, p. 254):

> Principle A. A locally o-commanded anaphor must be locally o-bound
>
> Principle B. A personal pronoun must be locally o-free
>
> Principle C. A nonpronoun must be o-free.

They also provide the following (p. 254):

> Y (*locally*) *o-binds* Z just in case Y and Z are coindexed and Y (locally) o-commands Z. If Z is not (locally) o-bound, then it is said to be (*locally*) *o-free*.

O-command just follows the obliqueness ordering of *subcat*; something o-commands something else, just if the first is to the left of the second on the subcat list.

This creates two questions. The first issue is what happens to full reflexive constituents such as *consigo mismo* ('with himself') and *yo mismo* ('myself'). The data given in §3.2.4 reveals that nothing special has to happen: the phrase *yo mismo* used as a cause-NP in a Type 3 construction (for example) is o-bound by the experiencer-NP. In fact, the data demonstrated that all of the legal cases of reflexives are locally o-bound. The second

issue is how to treat clitics. The reflexive clitic, given the representation in (206) could be considered o-bound, but a uniform classification of clitics would create a problem for the clitic in (205) which violates principle B under a uniform analysis, if clitics count as personal pronouns. Another possibility is that the non-doubled clitics could be analyzed as one class, thereby falling under principle B as personal pronouns, and the doubled clitics analyzed as anaphors. Clitic climbing examples like (64.b), repeated again below for convenience, do not cause a problem to principle A, even though the clitic precedes its binder and on the other side of a finite verb from it, because of argument composition account of causative control will keep the clitic and the dative NP on the same subcat frame in the same order. Clitic placement principles will not change relative obliqueness.

(207) La inteligencia de sus alumnos   le   hizo   a Juan   admirarlos
      The intelligence$_i$ of his students$_j$ Dat-cl$_k$ made$_i$ to Juan$_k$ to admire-Acc-cl$_j$
      'The intelligence of his students caused Juan to admire them'

Alternatively, one could assert that as affixes, clitics do not fall in any of the existing categories named in the binding theory. We do not wish here to decide for one approach or another, but to point out that a number of possibilities are compatible with our proposal.

5.6   Recapitulation

For convenience, we repeat here the lexical entries for representative examples of each of the 5 construction types we have been dealing with in this paper.

(208)
$$
\begin{bmatrix}
\text{PHON: } f(molestar, \boxed{2}, \boxed{5}) \\
\text{CAT: }
\begin{bmatrix}
\text{HEAD: } _{verb}
\begin{bmatrix}
\text{VFORM: } \boxed{5}\,\text{fin} \\
\text{AGRC: } \boxed{3}:\boxed{2}
\end{bmatrix} \\
\text{SUBCAT: } \langle \boxed{3}\,\text{NP}[nom]: \boxed{2},\ \boxed{4}\,\text{NP}[dat]: \boxed{1} \rangle
\end{bmatrix} \\
\text{CONTENT: }
\begin{bmatrix}
\text{RELN: } molestar \\
\text{BOTHERER: } \boxed{2} \\
\text{BOTHERED: } \boxed{1}
\end{bmatrix}
\end{bmatrix}
$$

(209)
$$
\begin{bmatrix}
\text{PHON: } f(molestar, \boxed{2}, \boxed{4}) \\
\text{CAT: }
\begin{bmatrix}
\text{HEAD: } _{verb}
\begin{bmatrix}
\text{VFORM: } \boxed{4}\,\text{fin} \\
\text{AGRC: } \boxed{3}:\boxed{2}
\end{bmatrix} \\
\text{SUBCAT: } \langle \text{NP}[dat]: \boxed{1},\ \text{CL}[dat]: \boxed{1},\ \boxed{3}\,\text{NP}[nom]: \boxed{2} \rangle
\end{bmatrix} \\
\text{CONTENT: }
\begin{bmatrix}
\text{RELN: } molestar \\
\text{BOTHERER: } \boxed{2} \\
\text{BOTHERED: } \boxed{1}
\end{bmatrix}
\end{bmatrix}
$$

$$(210) \begin{bmatrix} \text{PHON: } f(gustar, \boxed{2}, \boxed{4}) \\ \text{CAT: } \begin{bmatrix} \text{HEAD: } _{verb} \begin{bmatrix} \text{VFORM: } \boxed{4}\text{fin} \\ \text{AGRC: } \boxed{3} : \boxed{2} \end{bmatrix} \\ \text{SUBCAT: } \langle \text{NP}[dat]: \boxed{1}, \text{CL}[dat]: \boxed{1}, \boxed{3}\text{NP}[nom]: \boxed{2} \rangle \end{bmatrix} \\ \text{CONTENT: } \begin{bmatrix} \text{RELN: } gustar \\ \text{LIKER: } \boxed{1} \\ \text{LIKED: } \boxed{2} \end{bmatrix} \end{bmatrix}$$

$$(211) \begin{bmatrix} \text{PHON: } f(molestar, \boxed{1}, \boxed{4}) \\ \text{CAT: } \begin{bmatrix} \text{HEAD: } _{verb} \begin{bmatrix} \text{VFORM: } \boxed{4}\text{fin} \\ \text{AGRC: } \boxed{2} : \boxed{1} \end{bmatrix} \\ \text{SUBCAT: } \langle \boxed{2}\text{NP}[nom]: \boxed{1}, \boxed{3}\text{CL}[refl]: \boxed{1}, \rangle \end{bmatrix} \\ \text{CONTENT: } \begin{bmatrix} \text{RELN: } molestar \\ \text{BOTHERER: } \boxed{1} \\ \text{BOTHERED: } \boxed{1} \end{bmatrix} \end{bmatrix}$$

$$(212) \begin{bmatrix} \text{PHON: } f(temer, \boxed{1}, \boxed{4}) \\ \text{CAT: } \begin{bmatrix} \text{HEAD: } _{verb} \begin{bmatrix} \text{VFORM: } \boxed{4}\mathit{fin} \\ \text{AGRC: } \boxed{3} : \boxed{1} \end{bmatrix} \\ \text{SUBCAT: } \langle \boxed{3}\text{NP}[nom]: \boxed{1}, \text{PP}[a]: \boxed{2} \rangle \end{bmatrix} \\ \text{CONTENT: } \begin{bmatrix} \text{RELN: } temer \\ \text{FEARER: } \boxed{1} \\ \text{FEARED: } \boxed{2} \end{bmatrix} \end{bmatrix}$$

We hope that the discussion of embedded contexts clarifies why the AGRC feature is important, beyond simply allowing the function (f) that determines the phonology value of a head on the basis of some semantic index from its SUBCAT list. Because AGRC is SYNSEM valued, it contains the semantic index of the selected element. Structure sharing between just the index and the entire SYNSEM explains part of the difference between control and raising. Raising predicates must share the AGRC value of the embedded predicate, and the element shared may not be the leftmost element of the SUBCAT list on that embedded predicate.

5.7   Related HPSG Proposals

Heinz and Matiasek (1994) offer an account of German case assignment and argument structure in HPSG. They note that the SUBCAT list on its own does not supply sufficient information to determine argument structure but require an additional way of indicating what counts as an internal or external argument. Their approach is more conservative than splitting the SUBCAT list into SUBJ and COMPS to indicate what the external argument is (that which is the sole element of the SUBJ list). Instead they propose a feature for the Designated Argument (DA). While this seems likely to be identical to AGRC, it is not. The DA in fact could have been called SUBJ, but was not, because Heinz and Matiasek

(1994) deemed the SUBJ-COMPS split as unnecessary for all cases of subcategorization. The feature is designed to pick out the external argument of predications to distinguish ergative predicates (those which have an empty DA list are ergative). However, even ergative structures have agreement controllers. In any case Heinz and Matiasek (1994) make use of the DA value as a trigger to lexical rules that reduce argument structure (e.g. passivization). The idea is to capture case constraints in languages like German in which assignment of case can be structural (case of an NP varying with its syntactic context) or lexical (invariant case). Marking the DA and providing DA reduction rules provides a clear way to specify just one lexical entry for a predicate that interacts correctly with the case principle (which stipulates the conditions for structural and lexical case) to yield allowable configurations. The proposal is patently more concerned with case specification of arguments than with agreement properties on the predicates that have been a focus here.

The work of Kathol (1994) is also important to consider, as it also addresses problems of case in passivization. Like Heinz and Matiasek (1994) and our own work, Kathol (1994) also proposes a feature which selects an element from the valency lists. Kathol presumes a division of SUBCAT into SUBJ and COMPS. In addition, he uses a feature called Ergative (ERG) that is designed to pick out the accusative argument of transitive verbs and the subject of unaccusative intransitive verbs. The intention is to capture the fact that only those base entries with a nonempty ERG value are available for passivization.

(213) a.   the train arrived

b.   the arrived train

(214) a.   the child slept

b.   *the slept child

Unergative verbs will have a nonempty SUBJ feature, but an empty ERG feature. Thus, the function of ERG is the complement of the function of DA (Heinz and Matiasek (1994) point out that either can be derived given the other, even in their framework which does not distinguish SUBJ and COMPS). However, the naming of ERG as a feature, much like a grammatical function, in addition to SUBJ is a step towards individual naming of each possible grammatical function and away from the elegance of the original idea of the obliqueness ordered SUBCAT list. In any case, it is clear that ERG is not the same as AGRC, which simply picks out the agreement controller from the SUBCAT list, an element that may or may not coincide with pretheoretic notions of syntactic subject. We have demonstrated with our analysis of the psychological predicates that agreement control does figure directly in the linguistic explanation. Thus, our proposal is not open to the criticism that Kathol (1994, p. 271) levies against his, essentially theory-internal:

> The drawback of this solution is that one ends up with new features that presumably never figure in any linguistic description proper. Thus, one should not expect to find generalizations that involve, for instance, the value of PROTO-SUBJ which could not be captured by referring to SUBJ directly (although this could turn out to be wrong).

Arguments against a semantic explanation of these passivization facts notwithstanding (Kathol, 1991), our own solution to the same would not be to designate an additional feature, but to make use of the generalization that the adjectival passive reformulation of a base lexical entry is possible exactly for the element of the SUBCAT list whose index is shared with the X-ed role in the content of the predicate. The information is already coded there without separate recourse to an ERG feature.[27]

It should also be mentioned that Pollard and Sag (1994) acknowledge the fact that some languages have non-initial SUBCAT elements participating in agreement relations with the verb.

6 Conclusions

In this paper we have examined a range of predications which have been examined in the literature as having no subject at all or having quirky subjects. We have argued not that the predicates are subjectless in a world of otherwise subjectful clauses, but that subject isn't an explanatory notion, and that these predicates supply the evidence for this. We argue instead that observable quantities are explanatory: position and agreement control, cause and experiencer. We have offered a theory of raising and control in Spanish which explains the data and predicts the unacceptability of object raising in certain predicates.

The theory we presented is formalized in HPSG, because its feature-based lexicalization supports the expressive power needed to capture the generalizations available for these constructions. We use a version of HPSG with just a SUBCAT list, rather than a SUBJ/COMPS distinction, in keeping with our intuition about the viability of subjecthood as an explanatory notion. Nor do we make use of a separate ARG-STR list. However, our main proposal could be integrated in the split valency account as well. The account is simple and involves just keeping track of the agreement controller. A lexical head selects one of its SUBCAT elements (hence, a SYNSEM) as the value of AGRC. As AGRC is a head feature, this value is shared through all phrasal projections of the head. Principles of control and raising for Spanish dictate how the AGRC value of an embedded predicate interacts with the value of the embedding verb itself and sisters of the embedded predicate. With raising, the AGRC of the embedded verb must be the same as that of the embedding verb. For control, the AGRC of the embeded verb must be coindexed with a less oblique sister on the subcat list of the embedding verb (and in the case of 'subject' control this element will also be the AGRC of the embedding verb as well). Using AGRC is different from using SUBJ in that the whole point is that with this class of predicates the AGRC element need not be the first element of the SUBCAT list.

Given that we have maintained an obliqueness ordered SUBCAT list, we have also pro-

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[27]Pollard (1994) also addresses passivization in German and provides an analysis heavily influenced by Kathol's (1994); it is different in certain respects (lexical rules vs. inheritance hierarchies for the lexicon) but uses the main idea of the ERG feature with only minor modifications. Przepiórkowski (1999, Chr. 4) also adopts the ERG feature but substantially refines the theory of case assignment in HPSG extending coverage to problematic examples and maintaining consistency with current theory of traceless extraction.

posed an alternative solution to the SUBJ/COMPS distinction for constructions like non-predicative PPs which did not have analyses in earlier versions of HPSG. The solution we proposed reduces the number of phrase structure schema and eliminates the need for unary branching structures in order to realize intransitive VPs, etc. We increase the number of linear ordering constraints. The proposal is to dispense with the INV feature in favor of a POS feature which has three possibile values for beginning, middle and end. We assume that a lexical head declares its position, but that as this feature is appropriate only to words, phrasal heads do not. Thus, a transitive verb indicates that it appears in the middle of its complements, and an intransitive at the end, and a nonpredicative preposition at the beginning, and so on.

We feel that this paper contributes to linguistic theory in providing a parsimonious account of the linguistic facts (as well as a compendium of data indicating what the facts are). We suggest theory internal improvements to HPSG, and demonstrate the advantages of HPSG in accounting for the linguistic facts.

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