

# Generalising paths into psychological verbs. Evidence from Spanish

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**1. The problem.** This paper presents an original account for the lexical properties of object experiencer psychological verbs, namely one in which *path* is a relevant component in their semantics.

So-called psychological verbs have generated a huge amount of studies, mostly focusing on syntactic aspects (Belletti and Rizzi, 1988). From an aspectual point of view, we assume that object experiencer psychological verbs denote stage-level states (Arad, 1999; Marín and McNally, 2011). In this paper we aim at taking a step forward so as to explain why object experiencer psych verbs denote stage-level states. Focusing on Spanish data, we argue that object experiencer psych verbs such as *asustar* 'to frighten' denote a state anchored in a particular domain, derived from a deeper meaning of location. We claim that the most suitable way to represent this meaning is by means of the semantic component of **path**. Specifically, we propose to extend the notion of path introduced in previous approaches (Gawron, 2005, 2009; Jackendoff, 1996; Piñón, 1993; Zwarts, 2005, 2006) to enable it to deal with the semantics of these predicates. Furthermore, this proposal allows us to account in a simple way for the properties shared by *asustar* verbs and locative verbs such as *encarcelar* 'to jail' or *cercar* 'to surround'. As we will show, Old Spanish provides further evidence of these properties. In order to develop this argument, we rely on the analysis of the contexts which *asustar* verbs share with *encarcelar* or *cercar* verbs. For example, (i) both types of verbs can be paraphrased as 'put *x* in(to) (something)' or 'put something in(to) *x*' (examples 1 and 2), where *x* is the nominal related to the verb, (ii) both psychological and locative verbs have related nominals (e.g. *asustar* ~ *susto*, *angustiar* ~ *angustia*, *encarcelar* ~ *cárcel*, *cercar* ~ *cercos*), (iii) one as well as the other may occur with cognate prepositional phrases (examples 3 and 4), (iv) and the two have opposites (e.g. *preocupar* ~ *despreocupar*, *encarcelar* ~ *desencarcelar*, *cercar* ~ *descercar*).

- (1) *Ca la mentira pone al ombre en verguença*  
because the lie puts to-the man in shame  
'Because lie shames men.' (*Libro del cauallero Çifar*, 13th c.)
- (2) *Cesar yo pongo la corona del mi regno en tierra dauant tus pïedes*  
Cesar I put the crown of my kingdom in ground in-front-of your feet  
'Cesar, I bury the crown of my kingdom in front of your feet.' (*Grant cronica de Espanya I*, 13th c.)
- (3) *canto tenpo te he serujdo que por en ando aborrydo en trysteza.*  
so-many time you have-I served that for in walk-I bored in sadness  
'I have served you for so long that I am bored with sadness.' (*Cancionero de Baena*, 15th c.)
- (4) *Vienol una carta . enc'errada en c'era ..*  
came-to-him a letter . in-closed in wax ..  
'He received a letter sealed up with wax.' (*Libro de Alexandre*, 13th c.)

We believe that these shared contexts point directly to the idea that they both incorporate a path component in their semantics. In this paper we aim to provide a general analysis in which the behavior of all of these verbs originates from the presence of path in their meanings.

**2. Data.** This argument is based on the analysis of psychological verbs such as *asustar* 'to frighten' or *angustiar* 'to anguish'<sup>1</sup> in a diachronic corpus of Spanish, containing more than 40 million words from the 12th to the 20th century and comprising a wide variety of genres and styles (Sánchez-Marco *et al.*, 2011). We believe that old Spanish offers a unique source of data for the study of event semantics, as we observed that in the earlier centuries writers tend to clarify the use of innovative terms and expressions by using paraphrases, synonyms or cognates, expliciting certain semantic features of properties.

**3. Analysis.** Building on (Gawron, 2005, 2009), we propose to extend the notion of path, in order to enable it to describe the semantics of object experiencer psychological verbs. More specifically, we claim that *asustar* verbs require a path axis  $\pi$  (other than time) to be anchored. The primary function of this axis is to locate and orient entities -specifically in the case of psych verbs these entities are experiencers- on a scale in a particular domain, which provides the anchor with respect to which the eventuality can be measured. This scale is provided by the property described by the nominal related to the verb. (5b) provides an example of how *asustar* in sentence (5a) can be represented (adapted from Gawron (2005)), where the bracketed [*susto*] designates the path axis true iff the eventuality occurs in the scale denoted by the related nominal *susto* 'fright', and path is a function which returns the region in the scale the experiencer occupies at a particular time<sup>2</sup>.

<sup>1</sup>In order to extract psychological verbs, a list of 125 verbs was compiled manually by the authors.

<sup>2</sup>We leave time out the representation to make things clearer, and because that is not the central aim of our analysis

- (5) a. *Juan asustó a María* 'John frightened Mary'  
 b.  $\exists e[\text{Cause}(e) = \text{John} \wedge \text{asustar}_\alpha(e) \wedge \text{Experiencer}(e) = \text{Mary} \wedge [\text{susto}] \circ \text{path}_\alpha(e)]$

It follows from this analysis that the differences among psychological verbs and between psychological and locative verbs can be explained as differences in the domain of the underlying scale. To say it in other words, we attribute the differences between locative and psych verbs on the different type of denotations of the nominals most of these verbs are related with.

**4. Evidence from Spanish.** This proposal is based on different types of evidence, coming from prefixed verbs, cognate prepositional phrases, opposites, paraphrases, and the historical development of *estar* 'to stay' in Spanish. Morphological evidence comes from a number of Spanish verbs containing the prefix *en-*, etymologically related to the locative preposition *en* 'in'. These verbs denote either a spatial location (*encarcelar* 'to jail', lit. 'in-jail'; *encuadernar* 'to bind', lit. 'in-notebook'; *encerrar* 'to lock up', lit. 'in-close'), a psychological state (*enamorar* 'to fall in love', lit. 'in-love'; *enloquecer* 'to get mad', lit. 'in-mad'; *enorgullecer* 'to get proud', lit. 'in-proud'), or both (*endurecer* 'to harden' or 'to get insensitive', lit. 'in-hard'; *encandilar* 'to blind' or 'to fascinate', lit. 'in-lamp'). We take this prefix as a morphological instantiation of path. Second, we take both cognate prepositional phrases and opposites of these verbs as evidence for the path axis, the former specifying the domain of the scale where the state denoted by the related nominal is placed, and the latter denoting opposite sides or directions on this scale. Third, in this account we take paraphrases as evidence for the scale on which the path function operates in the corresponding verb. In example (1) *en vergüenza* 'in shame' denotes the scale where the entity *el ombre* 'the man' is placed in a similar way as the crown is buried on the ground in example (2).

A key piece of evidence for this argument comes from the history of *estar* 'to stay' in Spanish. In the earlier centuries this verb was mostly used with prepositional locative complements. Later in the 13th century it was combined with participles from locative and *asustar* psychological verbs. A corpus analysis reveals that the frequency of *estar* + past participle (PP) with *asustar* verbs relative to the total number of *estar* + PP constructions increases more than 5% from the 13th to the 20th century. This increase is expected as *estar* generalises its use with locative and psychological verbs of this type. We believe that this generalisation of *estar* with *asustar* verbs can be explained by the idea that this type of verbs incorporate a path component in their semantics, fitting well into the structure of *estar*.

**5. Discussion.** We conclude this paper with a discussion about how this analysis can be accommodated into a more flexible semantic theory about event types, and also with some general thoughts as to how the use of historical data can contribute to this task.

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