

The Experiencer in Psych Nominalizations: A Descriptive Approach to Catalan

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Abstract Psych verbs have been extensively studied across various linguistic domains due to their distinctive properties compared to other verb classes. Psych verbs have been classified into three categories based on two criteria: the syntactic role of the experiencer and that of the non-experiencer argument. Psychological nominals, however, uniformly behave as subject-experiencer predicates. This paper argues that the apparent neutralization of psych-verb classes in nominalizations stems primarily from the general absence of a *cause* argument in nominal structures – especially in nominals derived from Class II psych verbs. This phenomenon is accounted for through both the properties of external arguments and the aspectual properties of nominalizations.

Keywords Argument structure. Catalan. Eventive structure. Experiencer. Nominalizations. Syntax.

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1 Introduction: Argument Structure and Nominalizations

Since the 1970s, there has been a debate regarding predicative nature of nouns. Some authors defend that, like verbs or prepositions, nominals (or at least some nominals) can introduce arguments syntactically, and that noun phrases are integrated into the sentence much like verb phrases, acting as a complement to a functional node - i.e., the NP occupies a complement position within the framework of the DP analogous to how the VP does within the framework of the TP. One of the defenders of this position is Grimshaw (1990), who defended that some nouns (what she called ‘complex event nouns’) could carry argument structure, whereas other (‘simple event nouns’) could not. On the other hand, different proposals (Hale, Keyser 2002, for instance) have argued that, while verbs (and, to a certain extent, prepositions) legitimize arguments, nouns or adjectives don’t have this capacity at a structural level - nouns are considered heads that do not take complements or specifiers. In that sense, Fábregas (2020) explains that, for instance, “the noun *war* does not specify a DP as being its agent or its patient” (1); the DP that participates in the event is introduced by a PP or a genitive modifier, and “whether it is interpreted as the person that triggers the war, the person that suffers it or something else is left to the conceptual component, which decides according to the semantic information of the noun” (2).

This paper will take the first perspective. Indeed, as Alexiadou, Haegeman and Stavrou (2007) noted, nouns can be divided into two classes, namely relational and absolute. While absolute nouns may not have inherent relations with to the nominal constituents that appear together with them, relational nouns (i.e. derived nominals, kinship nouns and nouns with inherent part-whole relations) exhibit an inherent relation with the nominal constituents that accompany them. This inherent relation is, to a certain point, like that of the verbs with their arguments. Therefore, we will consider that relational nouns can carry argument structure. This fact has been explained mainly from two different perspectives: either considering that a VP is present within the structure of nominals or suggesting that nominals have an event structure represented in terms of functional layers. Alexiadou (2001), for instance, suggests that there is evidence for Aspect and Voice within the structure of complex event nouns, and that nouns can carry argument structure because they have a grammatically defined aspect.

In fact, as Alexiadou, Haegeman and Stavrou (2007) point out, “the range of elements that can occur after nouns are closely related to the range of elements that occur after verbs” (479). For instance, in Catalan, both nouns and verbs can select CP complements, as in

(1), infinitival complements, as in (2) and locative PP complements, as in (3):

- (1) a. *Els experts afirmen que el problema és greu*
 the.PL experts 3PL.assert that the problem 3SG.is serious
 ‘The experts assert that the problem is serious.’
- b. *l’afirmació dels experts que el problema és greu*
 the.SG assertion of the.PL experts that the problem 3SG.is serious
 ‘The experts’ assertion that the problem is serious.’
- (2) a. *Espero acabar la meva presentació a temps.*
 1SG.hope finish.INF the.FEM my.FEM presentation in time
 ‘I hope to finish my presentation on time.’
- b. *l’esperança de l’autor d’acabar la presentació a temps.*
 the.SG hope of the author offinish.INF the.FEM in time
 ‘The author’s hope to finish the presentation on time.’
- (3) a. *Els estudiants van anar a Mallorca.*
 the.PL students 3PL.PAST.AUX go to Mallorca
 ‘The students went to Mallorca.’
- b. *l’anada dels estudiants a Mallorca*
 the going of the students to Mallorca
 ‘The students’ trip to Mallorca.’

However, it is important to acknowledge that distinctions exist between nouns and verbs. In his 1970 paper “Remarks on Nominalization”, Chomsky already noted some differences. To start with, the productivity of derived nominals is restricted, and certain verbal stems do not allow for all types of nominalizations – for instance, *militate* allows for an *-ing* nominalization, *militating*, but not for an *-ation* one (**militation*). Also, in some cases, the semantic relations between the associated proposition and the derived nominal are quite varied and idiosyncratic (Alexiadou, Haegeman, Stavrou 2007). Moreover, derived nominals have the internal structure of noun phrases, which might have, as direct consequences, both differences in the obligatoriness of complements (both the external and the internal arguments of nominals tend to be optional) and dissimilarities in case assignment properties (Cremades 2016). Indeed, although, at first sight, nouns and verbs are governed by the same principles of argument realization, scholars like Grimshaw (1990) or Alexiadou, Haegeman and Stavrou (2007) have observed that arguments receiving case directly in a verbal context (nominative case of Flex and accusative case of V) often appear as prepositional phrases (hereafter, PP) in the nominal domain. Also, transformations

that typically apply to sentences, such as raising to object or raising to subject, are not possible in derived nominals (even though, in English, they are possible with gerunds).

There have been different approaches to the cause of these differences. Grimshaw (1990) and Picallo (1991) attribute these differences to the complexity of the event structure to which nominalization bases attach. According to Grimshaw, there exist 3 types of relational nouns: (1) complex event nominals, which require arguments; (2) result nominals, which have a referential reading and therefore select a referential argument as external argument, and (3) simple event nominals, which lack an event structure and therefore do not legitimize an argument structure. Alexiadou (2001), on the other hand, considers that category formation does not involve any lexical operation, and that the behavior of both verbs and nominals follows from general processes operating in specific syntactic structures - hence the realization of arguments is related to the presence or absence of functional layers in the structure. In that frame, there are different types of nominals depending on whether they include certain layers of functional structure (such as VoiceP or AspectP) and depending on the feature specification of these functional layers (Alexiadou, Haegeman, Stavrou 2007).

Regardless of the given explanation, the dissimilarities in the realization of arguments, particularly external arguments (which often align with the subject in the verbal domain), are noteworthy. Indeed, many authors¹ have observed that nominals show restrictions on the realization of external arguments when compared to the verbs they relate with. Folli and Harley (2007), for example, defend that the restrictions have to do with the teleological capability of the noun of generating the event on its own, from start to finish. Sichel (2010), on the other hand, delves into a detailed analysis of restrictions on the realization of external arguments of nouns compared to related verbs and introduces the concept of the agent exclusivity effect to explain constraints in certain nominalizations, specifically those derived from causative verbs. Going a step further, Alexiadou et al. (2013b) argue that in English, the restriction is essentially an effect of direct participation. According to this view, the external argument of the nominalization must occupy the same space and time as the expressed event but doesn't necessarily have to be an agent. However, in some cases, the restrictions extend beyond this, particularly in the context of psychological nominalizations, since the event complexity and the preposition that is used to introduce external arguments might play a role as well - some prepositions are

1 Grimshaw 1990; Pesetsky 1995; Marantz 1997; Harley, Noyer 2000; Folli, Harley 2008; Sichel 2009; 2010; or Alexiadou et al. 2013a.

restricted in their distribution in nominal environments (Alexiadou et al. 2013a; Cremades 2014).

To what extent do these restrictions apply to psychological nouns, specifically in Catalan? In this paper we will provide evidence showing that, in Catalan, only the experiencer can function as an external argument of psych nominals. We will also provide an account of the factors that can explain this restriction, namely aspectual characteristics of nominals – since some authors (Fábregas et al. 2012; Melloni 2017) consider that all truly psych nominals are stative, even though some have argued against this view (cf. Cremades 2014) – and the characteristics of external arguments themselves (Alexiadou et al. 2013a; Iordăchioaia 2008).

2 Goals

Departing from the idea that the structure of Determiner Phrase (DP) is parallel to that of CP, and that, like verbs, some nominals legitimize argument structure, the main goal of this paper is to delve into the study of argument structure of psych nominals in Catalan, specifically focusing on the realization and the characterization of the experiencer argument.

Thus, the paper aims to answer the question of how the experiencer argument is syntactically realized in Catalan psych nominals. Resolving this issue involves addressing some secondary questions:

1. How do verbs and nominals relate to each other (and how do psych verbs and nominals relate)?
2. How can the arguments of nominals realize? Are there external and internal arguments?
3. What does the distribution of arguments of psychological nominals depend on?

Section 3 presents the theoretical concepts upon which we will base the analysis: after a general characterization of psych predicates based on the categories established by Belletti and Rizzi in 1988 (3.1), the concept of an external argument is introduced, illustrating how it materializes in nominalizations (3.2). Section 4 explains how the nominal counterparts of various classes of psychological verbs are realized, providing answers to research questions 1 and 2. Finally, in section 5, an explanation is proposed for the third research question. All of this is intended to provide a comprehensive account of how a part of the argument structure of psychological nouns functions in Catalan.

3 Theoretical Framework: Psych Predicates and Arguments of Nominalizations

3.1 Psych Predicates

Psych predicates, and in particular psych verbs, are a subset of verbs that describe mental states, emotions, perceptions, or cognitive processes. These verbs play a crucial role in language to convey information about the inner thoughts, feelings, and experiences of individuals.

Understanding the syntactic and semantic properties of psych verbs has been a topic of interest in linguistics. Indeed, they have been the subject of numerous studies, from different perspectives, such as morphology (Fábregas 2015), syntax (Royo 2017), and the interface between syntax and morphology (Iordăchioaia 2008, 2019), as they have traditionally been considered to exhibit special properties that distinguish them from other verbal classes. In terms of Iordăchioaia (2019), “psychological verbs have long made the focus of intense linguistic debate due to their apparent special properties, which make them different from other standard verb classes” (57).

The reasons for these differences are multiple, but all of them are related to the realization of the semantic participants. To start with, the experiencer argument can be realized either as the subject, as a direct object or as an indirect object of the verb – even though many authors have noted that fronted experiencer datives in psych verb constructions qualify as quirky subjects (Belletti, Rizzi 1988; Masullo 1993). Secondly, the non-experiencer argument (which can be either a *stimulus*, a *cause*, or a *target of emotion*) can be realized as a subject, as a prepositional object or as a direct object. Finally, psych verbs are often ambiguous from an aspectual point of view: for instance, in Catalan, verbs such as *molestar* (annoy) can have an atelic eventive reading, as in (4), or a stative reading, as in (5):

- (4) *El Pere va molestar la Maria durant 5 minuts*
the Pere 3SG.PAST.AUX gobother the Maria during 5 minutes
'Pere bothered Maria for 5 minutes.'

- (5) *El fum del tabac em molesta profundament*
the smoke of tobacco 3SG.ACC bothers deeply
'Tobacco smoke deeply bothers me.'

In 1988, Belletti and Rizzi proposed a classification of psychological verbs into three different types based on two criteria: on the one hand, the syntactic function of the experiencer; on the other hand,

the syntactic function of the stimulus (theme, cause, or target of emotion) of the psychological state. Thus, they established the following classes of psychological verbs:

1. Type I, which includes verbs such as *love*, *admire*, *hate*, *fear*, *detest*, or *adore*, has the experiencer as the subject and the theme as the direct object.
2. Type II, such as *offend*, *bore*, or *distress*, has the experiencer as the direct object and the stimulus (often a cause) as the subject.
3. Type III, such as *please*, has the experiencer as the indirect object and the stimulus as the subject.

The uneven distribution of arguments of psychological verbs has been a topic of debate in studies on verbal argument structure, as there is no agreement on the thematic role corresponding to the non-experiencer argument (Levin, Rappaport Hovav 2005, 18). Scholars have discussed whether the roles are arbitrary and how the relationship between thematic roles and arguments can be defined. In fact, positing that Type II psychological verbs, like Type III, have an *experiencer* argument and a *theme* argument implies accepting that the relationship between thematic roles and arguments is arbitrary, which does not seem possible (for example, whenever there is an agent in the argument structure, it is this agent that performs as the external argument). Thus, if the experiencer occupies a more prominent position than the theme, it is necessary to consider that the external argument of Type II psychological verbs cannot be a theme but rather a cause. In this sense, Levin and Rappaport Hovav (2005) state that, in English, verbs like *frighten*, which have an experiencer object, describe “the causation of a psychological state in the experiencer, and they often even take animate, agentive subjects, making them close to prototypical transitive verbs” (18). For this reason (among others), authors like Royo (2017) propose nuances to the classification by Belletti and Rizzi (1988). Nevertheless, this three-class classification of verbs still serves as a reference point for the study of psychological predicates.

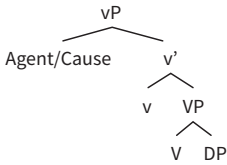
If instead of focusing on verbs we turn our attention to psychological nouns (i.e., nouns morphologically related to psychological verbs that denote a psychological state or emotion), this threefold division is somehow *neutralized*, and the general realization of arguments differs significantly. Indeed, as noted by Meinschaefer (2003), “only within this semantic class [psych nominalizations] we find verbs showing the same surface syntax and similar meaning, but presenting derived nouns contrasting crucially in how their semantic participants can be realized”. As we will see in this paper, in Catalan psych nominals the experiencer can always be considered the external argument. Hence psych nominals related to Type I verbs have the experiencer

as an external argument and the non-experiencer argument as an internal argument. Nominals related to Type II verbs do not allow the non-experiencer argument in their structure. In these cases, the non-experiencer argument is always licensed as an adjunct through prepositions such as *gràcies a* (thanks to), *per mor dela causa de* (because of) and the experiencer is realized as the external argument of the nominal. Finally, nominals related to Type III verbs tend to realize the experiencer as the external argument and the non-experiencer argument as a prepositional complement introduced by *per* (for). As we will explain in section 4, this apparent neutralization of the external argument is related to the fact that, as stated by Melloni (2017), “all psych nominals have a state denotation” and this is valid crosslinguistically, as well as to the properties of external arguments themselves, which are precisely the properties that the experiencer argument exhibits in psych nominals and which we will describe in the next section.

3.2 The Realization of Arguments in Nominals and Nominalizations

The term *external argument* was introduced by Williams in 1980 and further developed in *Argument Structure and Morphology* (1981), where he assimilates this concept to that of the subject of a predication. However, the external argument can be distinguished from the subject because it is neither a case nor a syntactic position; rather, it is the most prominent among the list of arguments that make up the argument structure of any predicate. In the same line, Bosque and Gutiérrez-Rexach (2009) define the external argument as the argument corresponding to the subject and, as Williams observed, state that it “has a prominent place within the argument structure of a verb, as it completely saturates a propositional function,” a fact that has a structural reflection because “this argument is not obtained like the others” (Bosque, Gutiérrez-Rexach 2009, 256-7). The source of external arguments, however, has been a matter of debate. In 1996, Kratzer, and later in 1998, Hale and Keyser, proposed that the external argument – which they mainly identify with the thematic roles of agent and cause – is only what is introduced in a verbal projection different from the lexical projection of V: specifically, they consider it to be what appears within the projection of the abstract causal node represented as vP, as represented in (6). Kratzer argued that the external argument must be separated from the VP it combines with, and she adopted the Voice Hypothesis, which Alexiadou et al. (2015) formulate as in (7).

(6)



(7) The Voice hypothesis

Voice is responsible for the introduction of external arguments. The same head introduced a DP in the active and licenses a PP in the passive.

In that frame, causer PPs are special, since they can appear in the absence of Voice, such as in (8). We mark the causer PP with italics:

(8) *The window broke from the storm.*

Alexiadou et al. (2013a), however, consider that external arguments are not introduced in vP nor in Voice, but in a specific node for introducing external argument that they call *v-EA*. According to the authors, this node makes “the relation to the external argument explicit”. The node *v-EA* does not introduce a further event, it always introduces a DP in its specifier, and it determines the thematic relation between the external argument and the event exposed by the vP in its complement (Alexiadou et al. 2013a). Additionally, this node can hold three types of semantic participants and therefore can be of three types:

1. v-EA-indirect participant
2. v-EA-direct participant
3. v-EA-agent

These three possibilities maintain a subset relation: while agents are direct participants, and agents and direct participants can qualify as indirect participants, the other way around is not possible. The selection of the variant depends on Voice head, which can take an active *v-EAP* as its complement or give a Voice alternation. According to the authors, in English Voice can be of three types: Passive, *-ation* or *-ing*. Hence, each type of Voice can select for a particular *v-EAP* (Alexiadou et al. 2013a).

In active sentences, then, external arguments can take on the semantic roles of cause (9a), agent (9b), or experiencer (9c). The following sentences exemplify the three possibilities, with the external argument identified in italics:

- (9) a. *The storm* caused significant damage to the town.
 b. *The detective* solved the mysterious case.
 c. *The tourist* enjoyed the beautiful scenery.

Although the experiencer is not usually conceived as an external argument *per se*, several authors have pointed out that it exhibits characteristics that allow it to be considered as such, to the extent that it shares features with the agent. An example of this can be found in Rozwadowska (2012), who suggests breaking down thematic roles into distinctive features and notes that the experiencer and the agent often share the feature [+animate].

Unlike verbs, eventive nouns cannot accommodate all these thematic roles as arguments. As it has already been pointed out, nominals and nominalizations show “certain restrictions in the realization of their external arguments compared to their verbal sources” (Alexiadou et al. 2013b, 74). As we have already mentioned, Folli and Harley (2007) consider that the cause for these restrictions is the teleological capability of the subject to generate an event. Hence only if the entity that works as external argument can carry out the event, the nominal will allow for it to realize as external argument. Let’s consider the examples in (10). Since *la pluja* (the rain) cannot collapse anything on its own, it cannot be the external argument of the nominal *col·lapse* (collapse) and it can only appear if legitimized by an explicit PP (*a causa de*):

- (10) a. *La pluja sol col·lapsar les autopistes a Mallorca.*
 the.FEM rain tends to collapse the.PL highways in Mallorca
 ‘The rain usually collapses the highways in Mallorca.’
- b. *el freqüent col·lapse de les autopistes a Mallorca*
 the frequent collapse of the.PL highways in Mallorca
 ‘The frequent collapse of the highways (in Mallorca) (due to the rain).’
- c. **el freqüent col·lapse de la pluja de les autopistes a Mallorca*
 the frequent collapse of the rain of the.PL highways in Mallorca
 *‘the rain’s frequent collapse of the highways (in Mallorca)’

According to Sichel (2010), the reason for these restrictions is that only animate causers can be arguments of nominals. While both animate and inanimate cause DPs are acceptable in the verbal frame, only the animate causer is appropriate in the derived nominal frame (Sichel 2010). In (11), we can observe the difference between the realization of the cause in the verbal domain (11a-b) and in the nominal domain (11c-d), where only explicit prepositions can introduce inanimate cause DPs. The italics indicate the phrase with the thematic role of the cause:

- (11) a. *Those words* offended his father.
b. His father got offended *by those words*.
c. *the offense* *{of/by} *those words* {of/*by} his father.
d. the offense of his father *because of those words*.

Arguments of nominals also differ from arguments of verbs in terms of realization possibilities. Meinschaeffer (2003) already noted that, in French, arguments of derived psych nominalizations can be of three types:

In French, nominalizations derived from psychological verbs basically dispose of three types of syntactic constructions to realize semantic participants in the event denoted: prepositional phrases headed by *de* 'of', prepositional phrases headed by prepositions other than *de*, such as *par* 'by' and *pour* 'for', and possessive determiners like *son*, *sa* 'his, her, its'.

In Catalan, external arguments of nominalizations can be realized in four different ways: prepositional phrases headed by *de*, as in (12); prepositional phrases headed by prepositions other than *de*, such as *entre*, as shown in (13), or *per part de* - often identified with the passive and illustrated in (14) - ; relational adjectives, as shown in (15), and possessive pronouns - which always materialize the most prominent nominal argument, following the *possessor > agent/experiencer > theme* hierarchy, exemplified in (16).² External arguments are marked in bold letters:

- (12) *Tothom va veure l'entrada de l'orquestra a l'escenari*
everybody 3SG.PAST see the entrance of the orchestra in the stage
'Everybody saw the orchestra's entering the stage.'
- (13) *L'acord entre les dues parts va tenir lloc dijous passat*
The agreement between the two parties 3SG.PAST have place Thursday last
'The agreement between the two parties took place last Thursday.'

2 In certain cases, external arguments may be realized as clitic pronouns, as illustrated by *Li facilitaran l'escriptura del conte* ('Someone will ease their writing of the tale'). However, clitic extraction is not uniformly permitted across all contexts. As a detailed examination of the conditions governing this variation lies beyond the scope of the present study, the issue will not be addressed further.

- (14) *La construcció de la casa per part d'aquella empresa va ser ràpida*
 The building of the house by part of that company 3SG.PAST be fast
 'The building of the house by that company was fast.'
- (15) *El viatge presidencial als EUA va ser molt polèmic*
 The trip presidential to the USA 3SG.PAST be very controversial
 'The presidential trip to the USA was very controversial.'
- (16) *El seu odi a les matemàtiques sembla no tenir limit.*
 The their hatred of the math seems not have.INF limit
 'Their hatred of math seems to know no bounds.'

Apart from their realization, these constituents frequently display syntactic behaviors characteristic of external argumenthood, including the ability to control PRO in non-finite clauses, bind anaphoric elements, and convey agentive or experiencer roles. As Grimshaw (1990) observes, external arguments in nominalizations occupy higher syntactic positions, whereas internal arguments are structurally lower and more closely integrated into the lexical core of the noun. This analysis is further supported by Alexiadou et al. (2013b), who argue that external arguments of nominals can be diagnosed through their syntactic effects, particularly binding and control.

Accordingly, as illustrated in (17), external arguments of nominalizations – unlike internal arguments – can control the PRO subject of an infinitival clause. Crucially, this control relation persists even when the external argument is unexpressed, as shown in (18).

- (17) a. *L'atac dels militars_i als civils_j per PRO_i espantar-los_j.*
 The attack of the military to the civilians to scare them.
 'The military_i attack on civilians_j to PRO_i scare them_j.'
- b. **l'atac dels militars_j als civils_i per PRO_i espantar-los_j.*
 the attack of the military to the civilians to scare them.
 **'the military_j attack on civilians_i to PRO_j scare them_i.'
- (18) *l'agressió ø_i a la víctima per PRO_i robar-li la cartera*
 the aggression on the victim to steal-3SG.DAT the wallet
 'the assault on the victim for stealing their wallet.'

In addition to controlling the PRO subject, external arguments of nouns can bind anaphoric elements, as NPs can serve as binding domains with anaphoric or pronominal elements bound within them:

- (19) *La renúncia d'aquell polític, a la seva identitat és un exemple*
 the renunciation of that politician to the his identity is an example
d'autoodi.
 of self-hatred.
 'That politician's renunciation of his identity is an example of self-hatred.'

Therefore, within noun phrases headed by nominals or nominalizations that take arguments, elements such as *de*-phrases, *entre*-phrases, *per part de*-phrases, relational adjectives or possessive pronouns typically function as external arguments. However, since *de*-phrases and adjectives can also express internal arguments, structural form alone is not a reliable diagnostic, and this is why properties such as binding or control must be taken into account.

Indeed, the contrast between *l'ajuda de la gent* (the help from the people) and *la fabricació de sabates* (the manufacturing of shoes) exemplifies how *de*-phrases can realize different argument roles within nominalizations, which can be distinguished through their syntactic and semantic behavior. In *l'ajuda de la gent* the phrase *de la gent* functions as the external argument, typically understood as the agent or source responsible for providing the help. This status is supported by syntactic diagnostics associated with external arguments, such as the ability to control PRO subjects in non-finite clauses. For example, in a construction like *l'ajuda de la gent per PRO reconstruir el país* (The help from the people to rebuild the country), *de la gent* controls the PRO subject of the infinitival verb, indicating a subject-like syntactic behavior. Additionally, *de la gent* can bind anaphoric elements, as seen in sentences like *l'ajuda de la gent a si mateixa* (The help from the people to themselves), which further confirms its status as an external argument. In contrast, in *la fabricació de sabates*, the *de sabates* phrase denotes the theme or product of the manufacturing event and does not display these syntactic properties. It neither controls PRO nor binds anaphors, reflecting its role as an internal argument that is thematically integrated and syntactically less active.

This distinction is also relevant in complex nominals with multiple *de*-phrases, such as *el temor de molta gent dels efectes de la covid* (the fear of many people of the effects of COVID). Although both complements are introduced by *de*, empirical diagnostics reveal a structural asymmetry: *de molta gent* can bind reflexives or control PRO in purpose clauses, while *dels efectes de la covid* cannot. These syntactic contrasts provide a principled, non-circular basis for identifying *de molta gent* as the external argument (experiencer) and *dels efectes de la covid* as the internal argument (target of emotion).

Once it has been explained how psychological predicates are understood and how external arguments of nominalizations are

realized, it is necessary to analyze how arguments of psychological nouns, particularly external arguments (which are the focus of this contribution), realize.

4 From Psych Verbs to Psych Nominals

In this paper, we will understand psych nominals as nouns that are morphologically related to psych verbs, i.e., those that denote a feeling, an emotion, or the psychological state of an experiencer. As we will show, the external argument of psych nominals is always the semantic participant with the role experiencer. Therefore, regarding the syntactic configuration of their arguments, psych nominals are not parallel to the verbs they are morphologically related to.

As we have already mentioned, psych verbs can be divided into three classes according to the realization of the experiencer: type I verbs, like *estimar* (to love) or *odiar* (to hate) in Catalan, are subject experiencer; in type II verbs, such as *preocupar* (to worry) or *humiliar* (to humiliate), the experiencer is the direct object, and in type III verbs, such as *agradar* (to like) or *plaure* (to please), the experiencer is an indirect object.

However, this classification is not valid for nouns, even though this does not mean that the three classes of predicates have the same types of arguments, nor does it mean that the experiencer argument has the same properties in all cases.

Let's focus initially on nouns related to type I psychological verbs, such as *estimar* (to love), *odiar* (to hate), *adorar* (to adore) or *detestar* (to detest). Comparing the configuration of verbs (20) and the related nominals (21) allows us to see that the configuration is similar: the experiencer argument is realized as the external argument both in the verbal and in the nominal structures, and the non-experiencer argument (*stimulus* or target of emotion) is realized as the direct object of the verb or as a prepositional phrase introduced by a directional preposition (*a*, *cap a*, *per*) in the nominal structure. The experiencer in the nominal structure can be realized as a possessive pronoun, which indicates that it must be interpreted as the external argument:

- (20) a. *Encara ara molta gent tem els efectes de la covid-19.*
still now many people 3SG.fear the effects of the covid-19.
'Even now many people fear the effects of covid-19.'
- b. *Tothom sap que en Lluís estima molt la seva filla.*
Everybody knows that the Lluís loves much the his daughter
'Everybody knows that Lluís loves his daughter very much.'

- (21) a. *el temor de molta gent {dels/pels} efectes de la covid-19.*
 the fear of many people of the effects of the covid-19.
 ‘many people’s fear of the effects of covid-19.’
- b. *L’amor d’en Lluís {cap a/per/envers} la seva filla.*
 the love of the Lluís {to/for/towards} the his daughter.
 ‘Lluís’ love for his daughter.’
- (22) a. *el seu temor {dels/pels} efectes de la covid-19.*
 the their fear of the effects of the covid-19.
 ‘their fear of the effects of covid-19.’
- b. *El seu amor {cap a/per/envers} la seva filla.*
 the his love {to/for/towards} the his daughter.
 ‘His love for his daughter.’

These nominals, like the verbs that they are morphologically related to, have an experiencer that could be considered the external argument and a non-experiencer argument (the stimulus of the psychological state) that could be considered as a direct internal argument.

The experiencer also functions as an external argument in nominals morphologically related to Type II psych verbs. Although these verbs realize the non-experiencer argument as the subject and the experiencer as a direct object, in nominal configurations, the distinctions are not maintained – the realization of the experiencer argument is the same as in nominals related to type I verbs, as Meinschaeffer (2003) already pointed out when she observed that the argument realized as a verbal subject is “blocked” in these nominalizations.

Examples (23) and (24) show psychological verbs with an accusative experiencer and the morphologically related nominals. In (25) we show how, once again, the experiencer can be realized as a possessive pronoun:

- (23) a. *Aquest tema avorreix profundament els alumnes*
 this topic bores deeply the students
 ‘This topic deeply bores the students’
- b. *Aquestes males pràctiques desanimen els candidates*
 these.FEM bad.FEM.PL practices 3PL.discourage the candidates
a la plaça.
 to the position.
 ‘These bad practices discourage candidates for the position.’

- (24) a. *l'avorriment dels alumnes {per/a causa d'} aquest tema.*
 the boredom of the student {for/dueto} this topic.
 'the students' boredom due to this topic'
- b. *el desànim dels candidats a causa d' aquestes males pràctiques.*
 the discouragement of the candidates because of these bad practices
 'the candidates' discouragement because of these bad practices'
- (25) a. *el seu avorriment {per/a causa d'} aquest tema.*
 the their boredom {for/dueto} this topic.
 'their boredom due to this topic'
- b. *el seu desànim a causa d' aquestes males pràctiques.*
 the their discouragement because of these bad practices
 'their discouragement because of these bad practices'

As Melloni (2017) pointed out for the case of Italian, “a restricted subset of nominalization from psych verbs show a different pattern”, and they allow for an agentive reading. It is the case of *umiliazione*, *seduzione*, *consolazione*, *mortificazione*, etc. in Italian, and the same happens with nouns such as *humiliació*, *seducció*, *consolació* or *mortificació* in Catalan. However, the agentive construction, in these cases, is not truly psychological - it corresponds to a “more concrete, actional process (under the control of an Agent) aimed at causing the result state” (Melloni 2017, 254). According to the author, some of the Type II psych verbs are *strongly agentive* and come with two different specifications. In terms of Melloni (2017):

[U]nder one reading, they [verbs such as *umiliazione*] are causative verbs with a psychological interpretation only, which encode reference to the resulting mental state; under the other reading, they are process/activity verbs with an actional (non-psychological) interpretation. (Melloni 2017, 279)

Nominalizations of these verbs can then select either the activity/process structure, as in (26a), or the result state in a causative construction as in (26b), which is the more general pattern with the rest of nominals related to Type II verbs (*preocupar*, *amoïnar*, *avorrir* or *irritar*, for instance). Only this second structure is truly psychological, which means that the external argument when these nominalizations are psychological is the experiencer.

- (26) a. *la humiliació del Joan a la Marta va marcar un abans*
 the humiliation of the Joan to the Marta 3SG.PAST mark a before
i un després.
 and an after
 ‘Joan humiliating Marta marked a turning point.’
- b. *la humiliació del Joan després de l'examen va ser dura.*
 the humiliation of the Joan after of the exam 3SG.PAST be hard
 ‘the humiliation Joan felt after the exam was hard.’

Nominals related to Type III verbs show a similar pattern. The verbal construction requires the non-experiencer argument to be the subject and the experiencer argument to be realized as an indirect object (PP headed by *a*), as shown in (27); however, in the nominal configuration, the experiencer is realized either as a PP headed by *de* (28) or a possessive pronoun (29), and the non-experiencer argument is legitimized through another preposition, mainly *per*:

- (27) a. *La sintaxi agrada molt a aquells alumnes de català.*
 the syntax likes much to those learners of Catalan
 ‘Those Catalan learners like syntax very much.’
- b. *Al Francesc li interessa el món de l'esport*
 to the Francesc 3sg.DAT interests the world of the sport
 ‘Francesc is interested in the sports world.’
- (28) a. *El gust dels alumnes de català per la sintaxi*
 the taste of the learners of Catalan for the syntax
 ‘Catalan learners’ liking of syntax
- b. *l'interès del Francesc pel món de l'esport*
 the interest of the Francesc for the world of the sport
 ‘Francesc’s interest for the sports world.’
- (29) a. *El seu gust per la sintaxi*
 the their taste for the syntax
 ‘Their liking of syntax’
- b. *el seu interès pel món de l'esport*
 the his of the Francesc for the world of the sport
 ‘His interest for the sports world.’

It is possible to observe, therefore, that a very similar pattern applies to all three types of psych nominalizations: the experiencer presents the possibilities of inherent realization in external arguments, and especially as PP headed by *de*, as shown in (21), (24) and (28), or as possessive pronouns, as exemplified in (22), (25) and (29). Moreover,

they can create binding domains (as proved with the possessive pronouns) and control the PRO subject of infinitive clauses (30):

- (30) *el temor de molta gent, de PRO_i contraure la covid-19*
the fear of many people of contracting the covid-19
'many people's_i fear of PRO_i contracting covid-19'

Experiencer participants are, thus, the true external arguments in psych nominals – they are realized as the highest argument and legitimize the other participants through specific prepositions (*a, per, envers, cap a*, etc.).

These external arguments can even be realized as PP headed by *per part de*, even though this possibility is somehow restricted. Badia (2002) indicated that the external argument of stative nominals (among which psych nominals) cannot take this realization in Catalan, in line with Giorgi and Longobardi (1991), who explained that psych nominals in Italian cannot be inserted into passive configurations, and Meinschaeffer (2003), who noted a similar phenomenon in the case of French and prepositional phrases headed by *par*. However, it seems that, at least in Catalan, some psych nominals allow for an experiencer realized prepositional phrases headed by *per part de*. In (31), we can see data from Corpus Textual Informatitzat de la Llengua Catalana (CTILC) that prove that this configuration is possible with, at least, nominals such as *amor* (love), *por* (fear) or *preocupació* (worry):

- (31) a. *la por per part de Portugal de veure's mermada la seva autonomia.*
the fear by part of Portugal of see 3SG.REFL reduced the its autonomy
'Portugal's fear of seeing its autonomy reduced.'
- b. *l'amor vers la terra catalana per part de poetes inspirats*
the love to the land Catalan by part of poets inspired
'the love for Catalan lands by inspired poets'
- c. *preocupació per part de l'arquitecte per tal que quedi ben palès*
worry by part of the architect for it that 3SG.remain.SUBJ.PR
well evident
'the architect's preoccupation for it become evident'

Actually, even the *Gramàtica de la llengua catalana* (IEC, 2016) acknowledges this realization when explaining, in the section on what they call *nouns' selected arguments*, that *per part de* can also introduce in certain cases the nominal phrase that expresses the experiencer, namely with nominals such as *por* (fear), *temor* (dread), *amor* (love), *desig* (desire), *odi* (hatred), *interès* (interest), or *admiració*

(admiration) (IEC 2016, 532). This can be explained by two factors: on the one hand, these nominals' experiencer is [+animate] and has a certain agentive character; on the other hand, the use of passive nominal constructions has spread due to the need to mark agentivity and animacy (Cremades 2017).

Furthermore, it must be noted that some nouns related to type III verbs (as well as with verbs that can fluctuate between types II and III, like *interessar*), allow for another realization, with the non-experiencer argument as the only argument of the noun. The experiencer, in these cases, cannot always be recovered and, if it is expressed, it is realized as a prepositional phrase introduced by *per a*, which should be considered adjunct. In these cases, however, the nominals have a different, more referential, reading, which makes us doubt that they are true psych nominals:

- (32) a. *el plaer de la lectura (??per a aquests joves)*
 the pleasure of the reading for these youngsters
 'the pleasure of reading (for these youngsters)'
- b. *l'interès de la política per a la població*
 the interest of the politics for the population
 'the interest of politics for the people'

All in all, external arguments of psychological nouns are always experiencers (except for those latter cases). Then, two types of non-experiencer arguments are distinguished: causes and *stimulus*, *target of emotion* or *object of experience* (in terms of Bogard 1995). While causes (direct or indirect) are never realized as arguments but legitimized through more explicit prepositions, the stimulus or target of emotion (i.e., the non-experiencer argument in nominals related to class I verbs) can be realized as prepositional phrases headed by *a* - what has been called *dative objective* (Cremades 2014, 2017) - or other directional prepositions, such as *per*, *envers* or *cap a* (towards).

But what causes this distribution of arguments of psych predicates in the nominal domain? The answers are related both with the eventuality that psychological nouns designate (Fábregas et al. 2012, Melloni 2017) and with the properties of the external arguments themselves (Alexiadou et al. 2013a; Iordăchioaia 2019). In the next section, we will delve into these two questions.

5 Factors Conditioning the External Argument of Psych Nominals: Aspectual Properties and Characteristics of v-EA

This section intends to provide an explanation for the apparent neutralization of external arguments of psych nominals. For nominals related to type I verbs, we could postulate that the same configuration is preserved – the experiencer is the external argument, and the *stimulus* or target of emotion is the internal argument. For nominals related to type II and type III verbs, however, other explanations are required. On the one hand, if we understand – as already mentioned – that the non-experiencer of psych verbs with an accusative experiencer is a Cause, it seems that the reason why the external argument must be the experiencer is clear: the external argument of nominalizations can never be a cause. As for nouns related to psych verbs with a dative experiencer, the admission of a single argument seems to be related to aspectual properties, to the extent that they can only have a stative reading and therefore only allow for the insertion of one argument (the experiencer). In the following sections, we explain in more detail the stativity of psychological nouns and the properties of the node v-EA that prevent the cause from manifesting as an external argument of nominalizations.

5.1 Aspectual Properties of Nominals

In 1994, Fullana already suggested that nominalizations related to type II psych verbs cannot be classified as what she called *process* nominalizations (i.e., *eventive*) because they do not express any *process*, nor as result nominals because they are not the result of the verb's action (for instance, the Catalan nominal *preocupació*, i.e. worry, is not the result of *preocupar*, i.e. to worry). She states, then, that psych nominals have a psychological or mental existence parallel to the existence of the action expressed by the verb, which is why Fabra (1918) already defined them as *states* (Fullana 1994, 187).

According to Lordăchoaia (2019), even psych verbs of type II are stative. She considers that “the truly psychological meaning of psych verbs comes with the stative aspectual properties” (65). Melloni (2017) observes this behavior as well, when she states that “some OE verbs – though preserving a fundamentally causative, hence complex event structure – are necessarily unambiguously stative” (257). She then explains that, even if all object experiencer verbs are characterized by causation, only verbs that imply a change of state in the Experiencer are dynamic, and there are, in fact, three possible readings for these verbs, related to three different semantic structures, shown in (33) – from Melloni (2017):

- (33) a. [[xACT_{<MANNER>} CAUSE [BECOME [y <STATE>]]]
 b. [xCAUSE [BECOME [y <STATE>]]]
 c. [xCAUSE [y <STATE>]]

Some verbs can have the first reading, but only if they can be conceptualized as a “more or less specific activity/process” (Melloni 2017) – true psych verbs depict, however, states or emotions that are triggered by causes and therefore can only enter the structures in (33a) and (33b).

In that context, psych nominals only preserve “the core aspectual semantics of OE verbs” (Melloni 2017) and are therefore stative. Fábregas et al. (2012) also state that psych nominals can only denote states. Indeed, when comparing typical eventive nominals with psych nominals, only the former fulfill the diagnostics of dynamicity, at least in Catalan.

Only eventive nominals, for instance, can combine with predicates such as *tenir lloc* (take place), as in (34); *aturar*, *acabar*, *finalitzar* (stop, end, finish), as in (35); *assistir*, *presenciar* (to attend, to witness), as in (36); can take the adjectives *lent* (slow) or *ràpid* (fast), as in (37); can complement the preposition *durant* (during), as in (38), or the DP *el procés de...* (the process of...), as in (39):

- (34) a. *la construcció de l'edifici va tenir lloc en dos anys*
 the construction of the bulding 3SG.AUX.PAST take place in two years
 ‘The construction of the building took place in two years.’
 b. **L'interès del Francesc per l'esport va tenir lloc en dos anys*
 the interest of the Francesc for the sport 3SG.AUX.PAST take place
 in two years
 *‘Francesc’s interest in sport took place in two years.’
- (35) a. *Van aturar la construcció a causa del mal temps.*
 3PL.AUX.PAST interrupt the construction because of the bad weather
 ‘The construction was interrupted due to the bad weather.’
 b. **Van aturar l'avorriment dels alumnes*
 3PL.AUX.PAST interrupt the boredom of the learners
 *‘The students’ boredom was interrupted.’
- (36) a. *Tothom va presenciar l'enderrocament de l'edifici*
 everybody 3SG.AUX.PAST witness the demolition of the building
 ‘Everybody witnessed the demolition of the building.’
 b. **Tothom va presenciar l'interès d'en Francesc per l'esport*
 everybody 3SG.AUX.PAST witness the interest of the Francesc for the sport
 *‘Everybody witnessed Francesc’s interest in sports.’

- (37) a. *La ràpida destrucció de l'edifici va sorprendre tothom*
 the rapid destruction of the building 3SG.AUX.PAST surprise everybody
 'The rapid destruction of the building surprised everyone.'
- b. **El ràpid amor d'en Lluís per la seva filla...*
 the rapid love of the Lluís for the his daughter...
 '*Lluís' rapid love for his daughter...'
- (38) a. *Durant la construcció de l'edifici van passar*
 during construction of the building 3PL.AUX.PAST happen
moltes coses.
 many things
 'Many things happened during the construction of the building.'
- b. **Durant l'interès del Francesc per l'esport van passar*
 during the interest of the Francesc for the sport 3PL.AUX.PAST happen
moltes coses.
 many things
 '*Many things happened during Francesc's interest for sport.'
- (39) a. *El procés de construcció de l'edifici va ser molt lent.*
 the process of construction of the building 3SG.AUX.PAST be very slow
 'The process of building the bulding was very slow.'
- b. **El procés de desànim dels candidats va ser*
 the process of discouragement of the candidates 3SG.AUX.PAST be
molt lent.
 very slow
 '*The process of discouragement was very slow.'

In contrast, psych nominals can serve as complements of stative nouns like *estat* (state) or *sensació* (sensation), as in (40), or predicates like *donar mostres de* (to show signs of) (41), *sentir* (to feel) or *experimentar* (to experiment) (42), or can be complemented by adjectives such as *intens* (intense), *fort* (strong), *lleuger* (light) or *dèbil* (slight) (43), which are impossible in the case of eventive nominalizations:

- (40) a. **un estat de construcció*
 *a state of construction
- b. *un estat d'avorriment*
 'A state of boredom'
- (41) a. **donar mostres de construcció*
 *give proves of construction
- b. *donar mostres d'interès*
 Give proves of interest

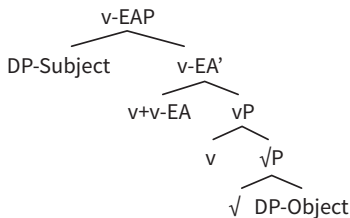
- (42) a. **{sentir/experimental}* *enderrocament*
**{feel/experiment}* *demolition*
 b. *{sentir/experimental}* *temor*
To {feel/experiment} *fear*
- (43) a. **un {fort/lleuger/intens}* *enderrocament*
**a {strong/light/intense}* *demolition*
 b. *un {fort/lleuger/intens}* *avorriment*
a {strong/light/intense} *boredom*

This implies, as Grimshaw (1990) argued, that psychological nominalizations encode a single eventuality (a state) and, therefore, only allow for the insertion of a single argument (which is the experiencer). As Melloni (2017) explains, “no external argument expressing Cause is expected in the argument structure of OE nominalizations” (254). The other participants, then, must be recovered as adjuncts and, therefore, must be legitimized through semantically more explicit prepositions, such as *per culpa de* (because of), *a causa de* (due to), or *gràcies a* (thanks to), for example.

5.2 The Characteristics of External Arguments

Another factor that can explain why nominals’ only external argument can be the experiencer is the configuration of external arguments themselves and the fact that nominals can’t allow for direct or indirect causers to be their external arguments. As we have already stated, we consider, like Alexiadou et al. (2013a), that the external argument is not directly generated at the VP but rather in an explicit node v-EA (v-External Argument), which introduces a determiner phrase in the specifier position and determines the thematic relationship between the experiencer and the event. According to the authors, this determiner phrase can be of three types: an indirect participant, a direct participant, or an agent.

(44)



To explain why some predicates can select certain types of arguments and not others, the authors posit a Voice node above v-EA that introduces morphological changes (such as passive voice or nominalizations). Thus, they explain that “specific Voices can select for specific vP-EAs,” (Alexiadou et al. 2013b, 171) and that “in constructions showing an agent exclusivity effect [...], Voice selects for v-EA-agent” (173). Since Voice can be of three types (passive, nominal, or active), only active Voice selects for any type of v-EA: in the nominal and passive Voice, only v-EA agent is possible.

This would explain how and why causes (indirect or direct participants) cannot manifest as external arguments of nominals and therefore must remain *outside* the argument structure of nouns related to type II verbs. The experiencer, then, is the only argument in the structure (hence the most prominent one) and the cause is recovered as an adjunct (introduced by the preposition *per* or *a causa de*).

6 Conclusions

This paper has provided evidence that, although traditionally psychological verbs have been classified into three categories according to the distribution of the argument with the thematic role of experiencer and the non-experiencer argument (which can be theme or cause), these differences in distribution are somehow *neutralized* in psych nominals, and the argument that should be considered as the external argument is always the experiencer.

The apparent neutralization of the classes of psychological verbs is mainly related to two factors. On the one hand, nominals cannot legitimize a cause as their external argument (which bans the external argument of type II from the nominal structure), a phenomenon that can be explained by the characteristics of external arguments. On the other hand, psych nominals are always stative. Thus, even if some psychological verbs encode two subevents – a cause (which is the eventuality that allows for the insertion of the non-experiencer argument) and a state (which is the eventuality that allows for the insertion of the experiencer argument) –, psych nominals encode a single event – the state. Therefore, whereas nominals related to subject experiencer verbs somehow *inherit* the verbal structure, nominals related to object experiencer verbs ban the non-experiencer argument and therefore realize the experiencer as external argument, somehow *neutralizing* both types of structures. However, this neutralization is only apparent, since the prepositions legitimizing non-experiencer arguments present a high variability and it would be necessary to delve into the analysis of these non-experiencer arguments to determine how this variability can be explained. This would be, however, the subject of another paper.

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