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Spanish and Catalan Psych Verbs: A Pilot Study on the Acceptability of Active Voice and Pronominal Voice Constructions

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Abstract This article examines Catalan and Spanish experiencer-object (EO) verbs in active and pronominal voice constructions with animate and inanimate stimuli. Acceptability judgements by native speakers in the Balearic Islands indicate a high degree of optionality concerning stimulus animacy in EO verb constructions in Spanish and Catalan. Catalan verbs that exclusively accept accusative case-marking yielded more varied ratings across participants, supporting claims of an interaction of agentivity and case-marking. No clear pattern for voice-animacy level preferences could be discerned from the data.

Keywords Psych verbs. Psych alternation. Experiencer object verbs. Animacy.

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1 Introduction

Expressing emotions is an inherent aspect of human communication, affecting relationships and social status. Psychological verbs, or psych verbs, are used to express emotions and mental states. They often interact with cultural and social factors, reflecting specific cultural norms, values, and attitudes towards emotions and mental states in everyday communication. For instance, the expression and regulation of emotions vary across different communities, leading to subtle differences in the usage and interpretation of psychological verbs.

Previous research has found that psychological verbs are often realised in varied syntactic patterns different from non-psychological verbs, particularly regarding their argument structure and preference for argument types (Belletti, Rizzi 1988). When the experiencer in a psych verb construction is morphologically or syntactically marked canonically as the subject of a phrase, the psych verb is being referred to as an ES (experiencer subject) verb. Similarly, when the experiencer is canonically marked as an object, the psych verb is an EO (experiencer object) verb. More research has focused on EO verbs since they exhibit the most interesting behaviour. This behaviour is primarily categorised by the verb's eventive reading (stative, dynamic, agentive) and its syntactic realisation (Rozwadowska et al. 2020), and the effect of animacy of the stimulus on the acceptance of the EO realisation (Verhoeven 2014). Psychological verbs are also closely related to voice alternations, as they are usually voice altering constructions (Marín, McNally 2011).

This paper focuses on EO verbs in Spanish and Catalan. For both languages, there is previous research examining the realisation of psychological verbs. However, research on Spanish[1] is more extensive than on Catalan.[2]

In Mallorca, Catalan is in constant contact with Spanish, and some recent changes regarding EO realisations in Catalan and their acceptance are hypothesised to originate in its contact with Spanish (Royo 2020). As shown above, there is less research on EO psych verbs for Catalan than for Spanish, making it more difficult to examine this phenomenon. Additionally, previous research on both Catalan and Spanish has been largely corpus-driven (e.g., Miglio et al. 2013), lacking insights from a more controlled environment that experimental data may be able to offer.

1 e.g. Ganeshan 2019; Marín, McNally 2011; Miglio et al. 2013; Rott et al. 2020; 2023; Verhoeven 2017; Viñas-de Puig 2017.

2 e.g. Abrines, Royo 2021; Cabré Monné, Mateu Fontanals 1998; Pineda, Royo 2017; Royo 2017; 2020; 2021; Vega Vilanova 2022.

Royo (2020) conducted a corpus study of Catalan texts to analyse the distribution and usage patterns of verbs exhibiting the psych alternation. The results showed that certain verbs in Catalan prefer accusative or dative constructions depending on various factors, such as the animacy of the stimulus. Cabré Monné, Matue Fontanals (1998) indicate that the acceptance of the dative construction in Catalan is a recent and still ongoing development, and can be seen as an influence from Catalan's contact with Spanish. For both Catalan and Spanish, Ganeshan (2014) also showed that the agentivity of the stimulus influences case-marking. Although previous research on non-Romance languages has suggested a link between voice and animacy (Pijpops, Speelman 2015), this has not been researched for either Catalan or Spanish.

This study builds on the findings of (Royo 2020) using experimental data to examine the acceptability of voice-animacy variations of psychological verbs in Spanish and Catalan. In particular, we focus on the following research questions:

- Are EO verb constructions equally acceptable (or unacceptable) in Spanish and Catalan? How does the perception of these constructions differ between the two languages?
- Does stimulus animacy correlate with voice preference in Catalan utterances containing experiencer-object verbs?
- Do speaker ratings suggest that Catalan EO verbs alternating between accusative and dative are equally acceptable in certain voice-animacy level constructions as those that are only acceptable with accusative case-marking?

An experimental study design was chosen to create a controlled environment for observing the differences between Spanish and Catalan. This acceptability study serves as a small-scale pilot study to find patterns in contemporary Catalan and Spanish psych verb constructions. The remainder of this paper discusses relevant previous findings and the hypotheses (section 2), followed by the methodology behind the conducted acceptability study (section 3). The presentation of the results (section 4) and their discussion (section 5) will be followed by some concluding remarks in section 6.

2 Background

Linguistic research into the domain of psych verbs in Romance languages thus far has been rather thorough.[3] We give a brief overview of what research on psych verbs in Spanish and Catalan has uncovered so far, specifically regarding animacy, agentivity, and psych alternations, as well as an account of the interaction between Catalan and Spanish in the Balearic Islands.

2.1 Language Contact and Language Change

The use of the Catalan language in the Balearic Islands is characterised by extensive contact with other languages. With the occupation of Mallorca and Ibiza and the conquest of Menorca under King Jaime I of Aragon in the thirteenth century, Catalan was established as the main language of the Balearic Islands. Contact with other languages in the Balearic Islands was limited to Latin and languages of the ethnolinguistic minorities on the islands, including Arabic, Hebrew, Occitan, and Aragonese (Blas-Arroyo 2007).

The first notable contact with the Spanish occurred in the fifteenth century when the first Spanish-speaking dynasty ruled the Kingdom of Aragon (Blas-Arroyo 2007; Vila-Pujol 2007). Since then, contact between speakers of Catalan and Spanish is characterised by periods of conflict in which regional languages were repressed in favor of Spanish, most notably after the War of Succession (1701-13) under the Bourbon monarchy, and the Spanish Civil War (1936-39), followed by the rule of Francisco Franco until 1975 (Blas-Arroyo 2007; Vila-Pujol 2007). Starting in the nineteenth century, Catalan had a literary resurgence in Catalonia, which, along with socioeconomic shifts in the region, contributed to the Catalan language becoming a key component of the identity of the Catalonian people (Pujolar 2011). After the end of the Francoist dictatorship in 1975, the regional governments of Catalonia and the Balearic Islands promoted the revitalisation of the Catalan language in public affairs and on all administrative levels (Miller, Miller 1996; Vila-Pujol 2007), as well as in the education system (Blas-Arroyo 2007; Huguet 2007). Simultaneously, a strong presence of Spanish remains due to the economic expansion and migration movements of Spanish speakers into Catalonia and the Balearic Islands in the second half of the twentieth century (Miller, Miller 1996; Blas-Arroyo 2007).

3 e.g. Cançado et al. 2024, Fábregas et al. 2012, Franco 1992, Ganeshan 2019, Herschensohn 1992.

In the present day, Catalan is predominantly spoken in three autonomous regions in Spain: Catalonia, the Balearic Islands and Valencia. Additionally, Catalan is the official language of Andorra and is spoken in parts of France and Italy (Plataforma per la Llengua 2018), displaying numerous dialectal varieties that are mostly mutually intelligible. Catalan is one of the four official languages spoken in Spain alongside Castilian, Basque and Galician.

The shared history and extensive contact between speakers of Spanish and Catalan sparked sociolinguistic research on the interaction of both languages. Huguet (2007) shows that the L1 of the speaker and the predominant language in the speaker's hometown are two significant factors that influence speaker attitudes in favour of either language in Catalonia. As for the Balearic Islands, Cremades et al. (2024) highlight the importance of the educational environment in enabling the habitual use two or more languages and find that the language choice in social interactions depends on several factors, including the L1 of the speakers, the educational environment, the specific communicative context, and the desire for integration. While the Catalan language is historically considered an important part of what constitutes the Catalonian identity in contrast to Spanish, the people of Mallorca often identify themselves as *mallorquín* regardless of their L1 language (Blas-Arroyo 2007).

Due to the extensive contact between the two languages, Catalonia and the Balearic Islands display region-wide bilingualism with few monolingual speakers of Spanish or Catalan in the present day (Blas-Arroyo 2007; Huguet 2007). Vega Vilanova (2022) poses that languages in regions with extended language contact are subject to change. Various changes have been observed in the social use of both Spanish and Catalan, being ascribed to the contact situation in Catalonia and the Balearic Islands. Code-switching practices and Catalan interferences commonly appear in contemporary Catalonian Spanish (Vila-Pujol 2007). Blas-Arroyo (2007) attributes lexical 'catalanisms' as well as phonetic changes in Balearic Spanish to the contact with the Catalan language.

Interactions between Spanish and Catalan are not limited to the lexical level or phonetic phenomena but are also observed in new semantic and syntactical developments. The Spanish of the Balearic Islands features semantic reorganisation with prepositions, verbal periphrases, and certain verbs like *ir* ('to go') and *venir* ('to come') that align with their Catalan cognates in usage rather than with Castilian Spanish (Blas-Arroyo 2007).

In syntactical research, Perpiñán (2018) finds that Catalan-Spanish bilingual speakers accept optionality regarding differential object marking (DOM) in both Catalan and Spanish and argues for convergence in both languages towards a variety that allows for features of the other language, induced by the unique language

contact situation in Catalonia. In particular, she found that Spanish-dominant bilingual speakers tend to show Catalan interference in the use of accusative clitics.

Royo (2020) attests an increasing acceptance of an alternation of accusative and dative case marking in Catalan psych verbs throughout the past century, which is reflected in different dialects of Catalan to varying degrees. In 2017, the Institute of Catalan Studies officially acknowledged the use of dative case marking in some Catalan psych verb constructions with traditional accusative case marking and included this alternation in the online version of the Catalan normative dictionary (DIEC 2007). While this development is often regarded as an adaptation of the same alternation in Spanish psychological verb constructions, it is also argued that the change itself is inherent to the Catalan language (Royo 2020). For example, Pineda (2020) argues that accusative marking in Catalan and Spanish is facilitated by a mechanism of differential indirect object marking (DIOM) and acknowledges that the decreased usage of DIOM in contemporary Spanish may affect the use of DIOM in Catalan as well due to the extensive contact of the two languages.

2.2 Psychological Verbs

Landau (2009, 137) proposes the following definition for psych verbs:

> A psych verb is any verb that carries psychological entailments with respect to one of its arguments (the experiencer). A psychological entailment involves an individual being in a certain mental state.

Thus, psychological verbs express a mental state or process, such as 'fear', 'love' or 'disappoint' in English, usually accompanied by a distinct argument structure which is characterized by a stimulus which causes an emotional state in an experiencer argument. This is illustrated in (1) for Catalan and in (2) for Spanish, in which the stimulus ('música clàssica' and 'concierto' respectively) causes an emotional state of joy in the experiencer ('Jordi' and 'Sofía' respectively).

(1) Catalan (Fischer 2019, 111)

a. *A* *en* *Jordi* *li* *agrada* *la* *música.*
to DEF Jordi 3SG.DAT lease.3SG DEF music
'Classical music pleases Jordi.'

b. *La* *música* *clàssica* *li* *agrada* *a* *en* *Jordi.*
DEF music classical 3SG.DAT please.3SG to DEF Jordi

(2) Spanish (Rott et al. 2023, 152)

a. *El* *concierto* *alegra* *a* *Sofía.*
DEF concert make.happy.3SG to Sofia
'The concert makes Sofia happy.'

b. *Sofía* *se* *alegra* *(con/por* *el* *concierto).*
Sofia REFL make.happy.3SG with/about DEF concert
'Sofia gets happy (about the concert).'

While the experiencer argument is necessarily animate since it experiences emotions, the stimulus can have varying degrees of animacy (Verhoeven 2009). How this affects the realisation of psych verbs is further outlined in subsection 2.3.

Although most psych verb constructions contain this ensemble of arguments, their morphosyntactical realisation varies across languages. This variation has posed problems for theories of argument linking, which initially sparked interest in the argument structures of psych verbs (Belletti, Rizzi 1988; Dowty 1991). Belletti, Rizzi (1988) split psych verbs into three categories based on the syntactic role of the stimulus and the case-marking on the experiencer: nominative, accusative, and dative case-marking. Alternatively, psych verbs can be classified based on the verb's argument structure, into ES verbs, which typically realise the experiencer with subject marking and the stimulus with object marking, and EO verbs, which have object marking on the experiencer and subject marking on the stimulus if specified (cf. Verhoeven 2014, 130). Aside from variation in argument structure, psych verbs also exhibit specific properties that distinguish them from other types of verbs, including non-canonical linearisation patterns and restrictions on passivisation (Verhoeven 2014).

2.3 Animacy

The role of animacy in the syntactic properties of psych verbs has prompted extensive research, especially in combination with factors such as agentivity and thematic role (cf. Ganeshan 2019; Rott et al. 2023; Verhoeven 2014) since the experiencer in a psych verb construction must, by definition, be sentient, as opposed to the stimulus, which may be either animate or inanimate (Verhoeven 2009). Verhoeven (2014, 130) claims that "[a] critical area for the study of the interaction between inherent properties (prominence in the animacy hierarchy) and relational properties (prominence in the thematic hierarchy) is the domain of experiencer object verbs" and details how *animacy-effects* impact EO verbs, specifically in combination with *thematic role hierarchies*.

According to Verhoeven (2014), *animacy effects* consist of what has been described in the literature as instances of an *animate-first* and *animate-high* influence. As demonstrated in several psycholinguistic studies, animacy impacts word order in language production (cf. Prat-Sala et al. 2000; Prat-Sala, Branigan 2000), which is considered to show an *animate-first* effect because an animate entity tends to be realised early in a clause. The *animate-high* is believed to be the reason why the more animate an entity, the more likely it is to be mapped to a higher syntactic function (i.e. as the subject of a clause) or realised earlier in a clause (Aissen 1999; Branigan 2000). These notions give rise to the previously mentioned *animacy hierarchy*, which is defined by the prioritisation of animate entities due to their elevated cognitive accessibility (Dahl 2008; Verhoeven 2014), leading to the following ranking:

(3) Animacy hierarchy:
1st and 2nd person pronoun > 3rd person pronoun > proper name/kin term > human noun > animate noun > inanimate noun (Van Gelderen 2018, 2)

The key element of *thematic role hierarchies* is that the higher a thematic role, the higher the syntactic structure it is mapped to, which leads to the following realization of the thematic role hierarchy:

(4) Thematic role hierarchy:
Agent > Experiencer > non-agentive Stimulus (Verhoeven 2014, 134)

This hierarchy is assumed to influence the choice of subject, which in turn means that an ES construction is more likely if the experiencer competes with a stimulus on the low end of the thematic role hierarchy compared to when the experiencer competes with a stimulus on the high end of the hierarchy, i.e. an agentive and thus animate stimulus (Verhoeven 2014, 134).

Since animacy is believed to be an inherent element of human cognition, Verhoeven (2014) draws a connection between agency, thematic role and animacy, and relates to the impact of animacy on alternation patterns (Rott et al. 2023) in that agency and animacy are closely intertwined factors and refer to a definition of agentivity that entails "animate participants which exercise intention, volition and control over the event of the verb" (DiDesidero 1999). While most definitions of agentivity take volition to be inherent to it, Ganeshan (2019, 9) extends the definition by DiDesidero (1999) by linking agentivity to volitionality without requiring it. Instead, it also "includes inanimate arguments that can be actors but cannot act volitionally and animate arguments that can be actors that act non-volitionally" (Ganeshan 2019, 9).

Furthermore, Verhoeven (2014) argues that experiencers tend to be realised in a higher syntactic position than the stimulus (an observation shared by Rott et al. 2020), which may be reminiscent of an animacy-effect, but also in part due to frequently used experiencers that outrank stimuli in the animacy hierarchy. The importance of animacy has also been shown in studies regarding linearization processes (Landau 2004; Verhoeven 2014). Pijpops, Speelman (2015) argue that stimulus animacy in Dutch EO constructions predicts whether a transitive or pronominal[4] construction is preferred: animate stimuli favor the transitive construction; inanimate stimuli prefer pronominal constructions.

2.4 Psych Alternation in Spanish and Catalan

While the experiencer argument has been discussed extensively concerning its role in the psych alternation (cf. Belletti, Rizzi 1988; Landau 2009; Pesetsky 1995), the stimulus argument has not. Psych alternations have been attested for in Spanish (Rott et al. 2020), where, in line with the classification by Nichols et al. (2004), Spanish is considered to be detransitivising. In general, detransitivising languages show semantic properties in the psych domain that do not behave like canonical transitives.[5] In Spanish, instances of detransitivisation in the psych domain happen via the use of the reflexive pronominal clitic *se* and allow the derivation of intransitive ES forms from transitive EO forms (Rott et al. 2020).

According to Rott et al. (2023, 15), Spanish EO verbs display "a nearly fully grammaticalised alternation of dative and accusative" case-marking, which is visible in the third person clitic dative markers *le(s)* and accusative markers *lo(s)*/*la(s)* prefacing the verb (cf. (5) b).

(5) Spanish (Rott et al. 2023, 16)

a. *El* *hombre* *se* *conmociona* *(con* *la* *noticia).*
DEF man REFL shock.3SG with DEF news
'The man is/gets shocked (by the news).'

b. *Al* *hombre* *conmociona* *la* *noticia).*
to.DEF man shock.3SG DEF news
'The news shocks the man.'

4 Frequently called *reflexive*; we shall use the abbreviation REFL in line with the Leipzig Glossing Rules.

5 e.g. Belletti, Rizzi 1988; Dowty 1991; Verhoeven 2015.

The experiencer's clitic pronouns,[6] being inherited from Latin case-marking, are visible in third-person constructions exclusively since dative and accusative pronouns for the other grammatical person configurations are homophonous in contemporary Spanish. Furthermore, Miglio et al. (2013) suggest that animacy makes the stimulus more agentive, which in turn demotes the experiencer to a more patient-like argument, and attributes significant influence on case-marking to the affectedness of the experiencer, volition and telicity, and recognises speaker and dialect-specific tendencies for alternation.

Catalan – a language in great cultural and geographical proximity to Spanish – has not been the subject of investigations into its psych verb domain as thoroughly as those conducted on other Romance languages.[7]

According to Royo (2017), Catalan psych verbs are traditionally used with an accusative case-marking; however, they display a certain syntactic and semantic flexibility, facilitated through the proto-agent-like characteristics of the experiencer, i.e. being animate, which in turn prompted further (descriptive) research into accusative/dative alternations. Royo (2020), for instance, investigates the accusative/dative alternation in Catalan EO verbs. Royo (2020) attributes certain Catalan EO verbs to type 2 in the classification by Belletti, Rizzi (1998). While they normally form utterances with an accusative experiencer, some of those verbs have recently been recognised by the Institute of Catalan Studies (IEC) to accept both accusative and dative case-marking. The predicates in question are *encantar* 'to delight', *estranyar* 'to bewilder', *molestar* 'to annoy', and *preocupar* 'to worry'. Examples (6) and (7), illustrate this behaviour, where (6a) and (7a) showcase accusative case-marking on the experiencer whereas (6b) and (7b) display dative case-marking:

(6) Catalan (Royo 2020, 372)

a. *Els nens van molestar la Maria (o la van molestar).*
DEF kids AUX.3PL annoy.INF DEF Maria or DEF AUX.3PL annoy.INF
'The kids annoyed Maria (or they annoyed her).'

b. *A Maria li molesten els nens.*
to Maria 3SG.DAT annoy.3PL DEF kids
(lit.) 'To Maria kids are annoying.'

6 3rd person: le(s) = DAT; lo(s)/la(s) = accusative.

7 Publications on Catalan psych verbs include Abrines, Royo 2021; Cabré Monné, Mateu Fontanals 1998; Pineda, Royo 2017; Royo 2017, 2020; Vega Vilanova 2022.

(7) Catalan (Royo 2020, 372)

a. *Les teves paraulas la van sorprendre, preocupar, molestar molt.*
DEF your words her.ACC AUX.3PL surprise.INF worry.INF annoy.INF a.lot
'Your words surprised, worried, annoyed her a lot.'

b. *Li sorpren, preocupa, molesta que joventud d'avui fumi tant.*
3SG.DAT surprise.3SG worry.3SG annoy.3SG that youth of.today smoke.3SG so.much
'To him/her that the youth of today smoke so much is surprising, worrying, annoying.'

As previously noted, Spanish is prone to accept argument alternation (i.e., accusative, dative and pronominal case-markings are appropriate in EO verb constructions): "psychological verbs that are used with dative constructions in Catalan, when they have traditionally been used with accusative constructions […], have often been regarded as syntactic calques of the Spanish" (Royo 2020, 372-3). Furthermore, Royo (2020) argues that the syntactic-semantic configuration differs when the EO verbs in question are used with the accusative case compared to when they are used with the dative case. In particular, the option for different case-markings (accusative or dative) may cause some hesitation in speakers' (written) language production (cf. Royo 2020, 375).

2.5 Hypotheses

We primarily base our hypotheses for the first and second research questions on Prat-Sala, Branigan (2000), Prat-Sala et al. (2000), and Verhoeven (2015) as well as the corpus investigation on the alternation of Dutch psych verbs conducted by Pijpops, Speelman (2015), by which animate stimuli tend to occur in active voice constructions, whereas inanimate stimuli are preferred in pronominal constructions. We therefore expect stimulus animacy to correlate with voice preferences accordingly in Spanish and Catalan.

Regarding our third research question on the difference between Catalan psych verbs that exclusively accept accusative case-marking versus those that accept both accusative and dative case, we expect them to behave similarly to what Ganeshan (2019) and Miglio et al. (2013) observed, i.e. that animacy correlates with agentivity, and agentivity, in turn, correlates with case-marking. They claim that in Spanish, agents with a higher degree of animacy appear with accusative case-marking and agents with a lower degree of

animacy appear with dative case-marking. Therefore, verbs that are exclusively found with accusative case-marking are expected to be less acceptable in utterances with inanimate stimuli due to the link between inanimate stimuli and the dative case. Since for both animacy levels a specific case-marking is available with those verbs that accept accusative and dative marking, both animate and inanimate stimuli should be acceptable in constructions with these verbs. Thus, similarly to the hesitations linked to the mental lexicon brought forward in Royo (2020), we assume a possibility for speaker hesitations when faced with verbs that only accept the accusative. Since Spanish and Catalan are in close contact (both culturally and geographically), it is reasonable to assume this correlation in Spanish is also found in Catalan.

3 Acceptability Study

Following the approach of Rott et al. (2020), eight Catalan psych verbs were selected to cover a range of different mental states based on the basic emotions as classified by Ekman et al. (1994), namely happiness, sadness, anger, fear, surprise and disgust. The choice of verbs is based on Royo's account (2020), by which four verbs were chosen that allow for a dative experiencer as well as an accusative experiencer in Catalan EO constructions, namely *encantar* ('to delight'), *molestar* ('to annoy'), *preocupar* ('to worry') and *estranyar* ('to surprise, to bewilder'). This set of four is complemented by *divertir* ('to amuse'), *entristir* ('to sadden'), *espantar* ('to frighten') and *sorprendre* ('to surprise'), which are only attested to occur in EO constructions with an accusative experiencer in Catalan.

Seven of the Spanish verbs selected are cognates of the Catalan verbs chosen, namely *encantar*, *molestar*, *preocupar*, *divertir*, *entristecer*, *espantar* and *sorprender*. While *extrañar* is a verb that can express surprise in Spanish, it is more commonly used to signify 'to miss (somebody or something)', which is less common with Catalan *estranyar*. Therefore, the eighth Spanish verb was replaced with the less frequently used verb *turbar* ('to disturb') to avoid interference of this semantic ambiguity. Note that Royo (2021) attested to the possible interpretation of the verb *encantar* to signify 'to bewitch', depending on the syntactic configuration of an utterance.

This study consists of two questionnaires, one in Catalan and one in Spanish, with the participants choosing one of the two language versions based on their personal preferences. In the questionnaire, the participants were instructed to rate 120 sentences in their chosen language version on a seven-point Likert scale, ranging from '1 (very bad)' to '7 (perfect)'. Both questionnaires contain sentences where each of the eight selected psych verbs is embedded into a sentence

in one of five different configurations of active or pronominal voice and the animacy of the non-experiencer stimulus. The configurations chosen are the active voice construction with an animate stimulus (henceforth abbreviated as AA), the active voice construction with an inanimate stimulus (AI), the pronominal voice construction with an animate stimulus in the prepositional phrase (PA), the pronominal voice construction with an inanimate stimulus in the prepositional phrase (PI), and the pronominal voice construction with no prepositional phrase (PN). The PN configuration is also tested since Spanish and Catalan allow for pronominal constructions with no stimulus (Prat-Sala, Branigan 2000; Rott et al. 2023). The experiencer and the non-experiencer stimuli are in the third person since the dative-accusative alternation has only been accounted for in the third person (Pineda, Royo 2017; Royo 2020). Although Catalan and Spanish also allow for the experiencer object to precede the verb in the EO construction (Pineda, Royo 2017; Rott et al. 2023), the standard word order subject-verb-object is chosen for all items in this study. An example item for each of these five configurations from the questionnaire is given in (8) for the Spanish verb *preocupar* and in (9) for the Catalan verb *divertir*.

(8) Test items for Spanish *preocupar*

a. *La gata preocupa a su dueño.* (AA)
DEF cat worry.3SG to POSS owner
'The cat worries his/her owner.'

b. *El partido preocupa al futbolista.* (AI)
DEF match worry.3SG to.DEF footballer
'The match worries the football player.'

c. *La gente se preocupa por el asesino.* (PA)
DEF people REFL worry.3SG about DEF killer
'The people are worried about the killer.'

d. *El estudiante se preocupa por el examen.* (PI)
DEF student REFL worry.3SG about DEF exam
'The student is worried about the exam.'

e. *El banquero se preocupa.* (PN)
DEF banker REFL worry.3SG
'The banker is worried.'

(9) Test items for Catalan *divertir*

a. *La filla diverteix la mare.* (AA)
DEF daughter amuse.3SG DEF mother
'The daughter amuses the mother.'

b. *Les pel·lícules d'acció diverteixen a tothom.* (AI)
DEF movies of.action amuse.3PL to everyone
'The action moviesamuse everyone.'

c. *Els nens es diverteixen amb el pallasso.* (PA)
DEF boys REFL amuse.3PL with DEF clown
'The boys are amused by the clowns.'

d. *L' oncle es diverteix amb la pel·lícula.* (PI)
DEF uncle REFL amuse.3SG with DEF movie
'The student is worried about the exam.'

e. *L' amiga es diverteix.* (PN)
DEF friend.F REFL amuse.3SG
'The friend is amused.'

The critical items in this study make up 40 (each of the 8 verbs in 5 configurations) of the 120 sentences. The remaining 80 items are distractor sentences that do not contain psych verbs, ranging from standard transitive sentences with verbs from other lexical domains to ungrammatical sentences and semantically infelicitous sentences, to ensure that the whole range of the rating scale is sensibly used by the participants.

The study was conducted at the University of the Balearic Islands, Palma. A total of 25 participants rated the items in Catalan and 26 participants rated the items in Spanish. The participants' ages ranged from 19 to 43 years old, with a mean of 21.8 and a standard deviation of 4.1. Based on the time taken to complete the survey, ranging from 7 to 26 minutes, five participants were excluded from our analysis, for their survey completion time was more than 1.5 standard deviations off the mean for their respective language version. This resulted in 23 participants each for Catalan and Spanish.

4 Results

4.1 Acceptability Ratings in Spanish and Catalan

In both questionnaires, the most common answer given on the Likert scale is '7 (perfect)', with 340 of 896 judgments on Spanish items (37.9%) and 416 of 897 judgments on Catalan items (46.4%). Overall, 'rather acceptable' judgements of 5 or higher were more common in the Catalan questionnaire (74.9%) in comparison to the Spanish version (61.5%), and 'rather unacceptable' judgements of 3 or lower were less common in Catalan (19.4%) than in Spanish (29.4%). The absolute distribution of ratings in both languages is given in **[tab. 1]**.

Table 1 The absolute distribution of ratings in the Spanish and Catalan versions of the study

Language	1	2	3	4	5	6	7	Total
Spanish	89	87	87	81	89	122	340	896
Catalan	51	57	66	51	117	139	416	897

25 of the 39 Spanish items were deemed rather acceptable with a mean rating above 5, six Spanish items were rated as rather unacceptable with a mean rating below 3, and eight items received a mean rating between 3 and 5 **[tab. 2]**. Among the 39 Catalan items, 26 were judged as rather acceptable, one item as rather unacceptable, and 12 items yielded a mean rating between 3 and 5 **[tab. 3]**. A brief comparison of the average ratings of the items in Spanish and Catalan indicates that the items with accusative EO verbs tend to yield similarly high ratings in both languages, whereas the picture is more diverse for cognate dative EO verbs in Spanish and Catalan.

Regarding the accusative EO verbs in Spanish, all four verbs (*divertir*, *entristecer*, *espantar* and *sorprender*) score a mean rating between 5.470 and 5.887 across all voice-animacy configurations, and all voice-animacy configurations score a mean rating between 5.290 and 6.120 across all accusative EO verbs. Only three out of 19 critical items in this group received a mean rating below 5, i.e., *divertir* AA (4.739), *espantar* AI (4.783), and *sorprender* PA (4.913).

Table 2 Mean ratings of the Spanish items

Verb Group (ESP)	AA	AI	PA	PI	PN	all config.
divertir	4.739	6.304	5.304	6.522	6.565	5.887
entristecer	5.261	5.565	5.739	5.652	6.304	5.704
espantar	5.870	4.783	5.435	6.043	5.217	5.470
sorprender	-	5.217	4.913	5.696	6.391	5.554
encantar	5.565	2.783	2.174	2.174	2.652	3.070
molestar	6.217	5.609	1.957	4.522	5.261	4.713
preocupar	5.304	5.522	6.174	6.696	5.870	5.913
turbar	3.043	3.609	2.455	3.348	3.348	3.167
Acc-only verbs	5.290	5.467	5.348	5.978	6.120	5.659
AccDat verbs	5.033	4.380	3.198	4.185	4.283	4.218
all verbs	5.143	4.924	4.279	5.082	5.201	4.921

Similarly, the four accusative EO verbs in Catalan (*divertir*, *entristir*, *espantar* and *sorprendre*) score a mean rating between 5.565 and 5.843 across all voice-animacy configurations, and all voice-animacy configurations are rated between 5.130 and 6.163 on average across all accusative EO verbs. Out of the 19 items in this group, 16 items

scored above 5 on average, and only three items scored lower than 5, i.e., *divertir* AA (4.913), *espantar* PA (4.435), and *sorprender* AI (4.870). Note that due to a technical error in the compilation of the questionnaires, no data on *sorprender* / *sorprendre* in an active voice context with an animate stimulus (AA) was retrieved.

Table 3 Mean ratings of the Catalan items

Verb Group (CAT)	AA	AI	PA	PI	PN	all config.
divertir	4.913	6.478	5.609	6.217	6.000	5.843
entristir	5.087	5.130	6.435	6.652	5.696	5.800
espantar	5.391	5.913	4.435	6.130	6.478	5.670
sorprendre	-	4.870	5.783	5.652	5.957	5.565
encantar	4.652	4.913	3.435	3.000	4.174	4.035
molestar	5.826	6.304	3.913	6.348	4.696	5.417
preocupar	5.739	6.783	6.870	6.913	6.739	6.609
estranyar	4.391	2.739	4.217	5.870	6.609	4.765
Acc-only verbs	5.130	5.598	5.565	6.163	6.033	5.728
AccDat verbs	5.152	5.185	4.739	5.533	5.554	5.207
all verbs	5.143	5.391	5.087	5.848	5.793	5.460

No item in either Catalan or Spanish was rated unanimously as unacceptable (receiving only ratings of 4 or lower) among all participants. There were four items in Catalan rated unanimously as acceptable, i.e. the *preocupar* items with AI, PA, PI & PN received no ratings below 5. Only two Spanish items were rated unanimously as acceptable (*divertir* PN & *preocupar* PI).

In both Spanish and Catalan, *preocupar* scored the highest average rating in the respective language group across all configurations, with no item scoring below 5 in either language.

The verb *molestar* was also deemed acceptable in the AA and AI configurations in Spanish and Catalan, with differences regarding the acceptability of the *molestar* items in pronominal voice. The PN configuration is accepted in Spanish (5.261) while it has mixed ratings in Catalan (4.696) and PI is accepted in Catalan (6.348) but received mixed responses in Spanish (4.522). In both languages, the PA configuration is the lowest scoring among the *molestar* items, and the Spanish *molestar* PA item scored the lowest of all 78 items in this study (Spanish: 1.957, Catalan: 3.913).

The verb *encantar* scored the lowest average of all tested verbs in both languages (in Spanish: 3.070; in Catalan: 4.035). Four configurations (AI, PA, PI and PN) are rated as unacceptable in Spanish with means below 3. Only the AA configuration was rated above 5 for Spanish *encantar*. In Catalan, all configurations of *encantar* scored an average between

3.000 and 4.913, indicating that this verb is potentially divisive in all configurations among the participants in the Catalan group.

The Spanish verb *turbar* scored consistently low (mean rating: 3.167), and all configurations received mean ratings between 2.455 and 3.609. In Catalan, *estranyar* accepts PI (5.870) and PN (6.609), and does not accept AI (2.739), while the configurations involving an animate stimulus, i.e., AA (4.391) and PA (4.217), received mixed ratings.

While the distribution of ratings indicates that the critical items were overall more likely to be accepted in Catalan (mean rating: 5.460) than in Spanish (mean rating: 4.921), it is not the case that all Catalan items were rated higher than their Spanish cognate counterparts as can be seen in **[tab. 2]** and **[tab. 3]**.

Mann-Whitney U tests ($\alpha = 0.05$) on the mean ratings of all judgements on a verb show that there is no significant difference in the mean ratings for any of the Catalan Acc-only verbs *divertir* ($p = 0.995$), *espantar* ($p = 0.416$), *sorprendre* ($p = 0.663$) and *entristir* ($p = 0.367$) when compared to their Spanish cognates. In contrast, the AccDat verbs *encantar* ($p = 0.001$), *molestar* ($p = 0.0023$) and *preocupar* ($p = 0.002$) show significantly higher mean ratings in Catalan than in Spanish, and Catalan *estranyar* also scores a significantly higher mean than Spanish *turbar* ($p < 0.001$). This indicates that constructions with Acc-only EO verbs score similar to equal ratings in both Spanish and Catalan, while constructions with AccDat EO verbs are rated more likely as acceptable in Catalan than in Spanish.

As expected in Catalan, Acc-only verbs (mean: 5.728) scored significantly higher than AccDat verbs (mean: 5.207, $p = 0.001$). However, the same phenomenon is also seen in the Spanish ratings, in which the Acc-only verbs (mean: 5.619) scored significantly higher than the AccDat verbs (mean: 4.218, $p < 0.001$), which is contrary to our expectation that these two verb groups would generate similar ratings in Spanish.

Regarding the voice-animacy levels employed, there is no significant difference in the mean rating over all AA items (active voice, animate stimulus, $p = 0.885$), as opposed to all other combinations of voice and stimulus animacy tested for. They scored significantly higher in Catalan than in Spanish on average, respectively AI (active voice, inanimate stimulus, $p = 0.030$), PA (pronominal voice, animate stimulus, $p = 0.001$), PI (pronominal voice, inanimate stimulus, $p = 0.004$) and PN (pronominal voice, oblique stimulus, $p = 0.017$). The tested EO verb constructions in active voice with an animate stimulus yield similar ratings in both languages, and thus, we observe that constructions with EO verbs with an inanimate stimulus or in pronominal voice constructions are significantly more likely to be judged acceptable in Catalan than in Spanish on average.

4.2 Animacy

Regarding the hypotheses postulated for the second and third research questions, we expect overall high ratings for AA and PA, mostly low ratings for AI and PA. PN will be analyzed without any previous assumptions.

To further test for a potential influence of stimulus animacy on voice acceptability, the homogeneity of variances (Levene test) and significant differences of the general rating tendencies (Mann-Whitney *U* test) of the initially selected voice-animacy combinations shall be examined for significant differences in acceptability. For both the Levene and the Mann-Whitney *U* test the following voice-animacy pairs will be compared:

active-animate versus active-inanimate (AA&AI), pronominal-animate versus pronominal-inanimate (PA&PI), active-animate versus pronominal-animate (AA&PA), active-inanimate versus pronominal-inanimate (AI&PI), active-inanimate versus pronominal-animate (AI&PA), active-animate versus pronominal-inanimate (AA&PI), pronominal-animate versus pronominal-oblique (PA&PN) and pronominal-inanimate versus pronominal-oblique (PI&PN).

On the basis of our hypotheses and research questions, we expect the two statistical tests to yield the highest number of significant results when examining the first four listed instances, and significantly less (if any) when examining AI&PA and AA&PI. These expectations are based on the hypothesis which voice-animacy levels are expected to be preferred and which disliked. For instance, since AI and PA should both yield predominantly low ratings, AI&PA should not yield significant results due to similar ratings of both levels. The same applies to AA&PI, the only difference being that AA and PI should both yield mostly favourable ratings. Again, for comparisons including PN, we shall not hypothesise over the outcome. The tests were conducted for each verb individually, for the group of AccDat verbs, the group of Acc-only verbs, and for all verbs collectively. The second analysis step might reveal whether there is a systematic difference in rating distribution concerning the verbs that accept accusative and dative case-marking compared to those that only allow accusative case-marking, as well as the individual verbs. The results are visualised in the subsequent tables 4 through 9. An asterisk indicates a significant result. A period indicates a result close to the α level of 0.05, something we will refer to as 'tendency case'. 'n/s' signifies all not significant results, and a hyphen indicates missing data points.

Among all verbs, homogenity of variance was confirmed between AA&AI, AA&PA and PI&PN. AI&PI yielded a *p*-value close enough to the α level of $\alpha = 0.05$ to be considered to have a tendency toward

heterogenity of variance, and PA&PI, AA&PI, AI&PA and PA&PN differed significantly **[tab. 4]**.

Table 4 Significant variance differences between voice-animacy level ratings of all verbs ($p < 0.05$)

Verb (VAR)	AA&AI	PA&PI	AA&PA	AI&PI	AA&PI	AI&PA	PA&PN	PI&PN
All verbs	n/s	0.0003 *	n/s	0.053.	0.012 *	0.039 *	0.002 *	n/s

The means of all verbs differed significantly between PA&PI, AI&PI, AA&PI and PA&PN and showed a strong tendency to differ significantly between AA&AI and AI&PA. The Mann-Whitney *U* test did not yield significant results when testing AA&PA and PI&PN **[tab. 5]**.

Table 5 Significant mean differences between voice-animacy level ratings of all verbs ($p < 0.05$)

Verb (MEAN)	AA&AI	PA&PI	AA&PA	AI&PI	AA&PI	AI&PA	PA&PN	PI&PN
All verbs	0.073.	4.426e-05 *	n/s	0.019 *	3.648e-05 *	0.051.	0.0007 *	n/s

When testing for homogenity of variances among the Acc-only vs. the AccDat verbs, the AccDat verbs returned fundamentally less significant results **[tab. 6]**. While the Levene test yielded significant results when comparing PA&PI, AA&PA, AI&PI, AA&PI and PA&PN of the Acc-only verbs, it merely resulted in two tendency cases (PA&PI and PA&PN) for the AccDat verbs. No significant results can be reported for the remaining comparisons.

Testing for mean differences generated less significant results than testing for homogenity of variance among Acc-only verbs, but more when testing the AccDat verbs **[tab. 7]**. Only AA&AI and AA&PI differed significantly among the Acc-only verbs. The remaining comparisons did not, however. The tendency cases when testing PA&PI and AA&PA are to be noted.

The means of the AccDat verbs differed significantly when testing PA&PI and PA&PN, exhibited a tendency in the pairs AA&PI and AI&PA. The remaining pairs did not differ significantly **[tab. 7]**.

Table 6 Significant variance differences between voice-animacy level ratings of Acc-only vs. AccDat verbs ($p < 0.05$)

Verb (VAR)	AA&AI	PA&PI	AA&PA	AI&PI	AA&PI	AI&PA	PA&PN	PI&PN
Acc-only	n/s	0.004 *	9.357e-05 *	0.011 *	0.00003 *	n/s	0.042 *	n/s
AccDat	n/s	0.088.	n/s	n/s	n/s	n/s	0.055.	n/s

Table 7 Significant mean differences between voice-animacy level ratings of Acc-only vs. AccDat verbs ($p < 0.05$)

Verb (MEAN)	AA&AI	PA&PI	AA&PA	AI&PI	AA&PI	AI&PA	PA&PN	PI&PN
Acc-only	0.016 *	0.054.	0.067.	n/s	0.0001 *	n/s	n/s	n/s
AccDat	n/s	0.002 *	n/s	n/s	0.066.	0.072.	0.001 *	n/s

A similar overview of the results for the Levene test **[tab. 8]** and the Mann-Whitney *U* test **[tab. 9]** for the individual verbs shall now be provided.

In testing the individual verbs, comparing AA&AI yielded the most instances of significant results, closely followed by AA&PA, AA&PI, and AI&PA. PA&PI and PA&PN both yielded two significant results, and PI&PN resulted in the fewest significant results **[tab. 8]**.

Taking a closer look at the significant differences in variances when testing the individual Acc-only verbs vs. the individual AccDat verbs, the following is noticeable:

Among the Acc-only verbs, AA&AI and AA&PI yielded the highest number of significant results. PI&PN only exhibited one tendency case and no significant results. The other comparisons each show one significant result. Additionally to one significant result, AI&PA generated two tendency cases. Overall, nine out of twenty-four instances (37%) in which the test was carried out yielded a significant outcome.

The AccDat verbs yielded a somewhat consistent number of significant differences in variance among all voice-animacy level comparisons, with the exception of AI&PI, which did not yield any significant results. Ten out of thirty-two comparisons (31.25%) turned out significant. Overall, *entristir* and *molestar* had the highest number of results that indicate heterogeneity of variance, closely followed by *preocupar*, *estranyar* and *espantar*. Additionally, *entristir*, *estranyar* and *espantar* all yielded one tendency case. Lastly, *divertir* exhibits two significant results plus a tendency case whereas *encantar* did not yield any significant results or tendency cases.

Referring back to the distinction between Acc-only and AccDat verbs, I can report that all Acc-only verbs had one tendency case, *entristir* had the most significant results, closely followed by *espantar*, and *divertir* returned the fewest. Among the AccDat verbs, *molestar*

presented four significant and four non-significant results. *Preocupar* and *estranyar* both produced three significant results, the latter an additional two tendency cases. The tendency of Acc-only verbs to yield more significant variance differences than the AccDat verbs **[tab. 6]** is reflected in the results of the individual verbs.

Table 8 Significant variance differences between voice-animacy level ratings per verb ($p < 0.05$); the top three are Acc-only verbs, the bottom four AccDat verbs

Verb (VAR)	AA&AI	PA&PI	AA&PA	AI&PI	AA&PI	AI&PA	PA&PN	PI&PN
divertir	6.125e-05 *	n/s	n/s	n/s	0.004 *	0.070.	n/s	n/s
espantar	n/s	0.016 *	0.038 *	n/s	n/s	0.0867.	0.0001 *	n/s
entristir	0.011 *	n/s	n/s	0.005 *	0.0006 *	0.020 *	n/s	0.050.
encantar	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
molestar	n/s	0.005 *	0.045 *	n/s	n/s	0.002 *	n/s	0.006 *
preocupar	0.0004 *	n/s	6.254e-05 *	n/s	2.91e-05 *	n/s	n/s	n/s
estranyar	0.019 *	n/s	n/s	n/s	0.053.	0.049 *	4.057e-06 *	0.063.

AA&PI and AI&PA had the most instances of significant differences in voice-animacy in pairwise comparisons of means, while AA&AI, AA&PA, AI&PI, PA&PI and PI&PN resulted in three significant and four not significant results, minus AA&PA and AA&PI, which each had one additional tendency case. PA&PN returned the fewest significant results.

When comparing the significant differences in means between the individual Acc-only and individual AccDat verbs, the following is striking:

Almost all voice-animacy level comparisons but AA&PI and AI&PA yielded the same number of significant results, namely one, among the Acc-only verbs. AA&PI turned out significant for all Acc-only verbs and AI&PA for all except *divertir*.

The number of significant differences peaked at the same pairings for the AccDat verbs. AA&AI, PA&PI, AA&PA, AI&PI and PI&PN all turned out to differ significantly in two of the four verbs, PA&PN in one of the verbs. Two tendency cases can be reported.

Eleven out of twenty-four (45.83%) Acc-only comparisons and seventeen out of thirty-two (53.13%) AccDat comparisons turned out significant. The tendency of AccDat verbs to yield equally as many significant mean differences than the Acc-only verbs **[tab. 7]**, is more strongly pronounced, since the individual AccDat verbs resulted in more significant outcomes than the individual Acc-only verbs. *Estranyar* and *entristir* had the highest number of significant results, closely followed by *encantar*, *espantar* and *molestar*, of which *encantar* and *espantar* claim the tendency cases. *Divertir* and *preocupar* had

the smallest number of significant instances, *divertir* fewer than *preocupar*.

Similar to the variance results of the Acc-only verbs, *entristir* yielded a high number of significant results, closely followed by *espantar*, and *divertir*.

Among the AccDat verbs, *estranyar* had the highest number of significant results, *encantar*

and *molestar* each two less than *estranyar*. *Preocupar* yielded the fewest significant results.

Table 9 Significant mean differences between voice-animacy levels per verb ($p < 0.05$); the top three are Acc-only verbs, the bottom four AccDat verbs

Verb (MEAN)	AA&AI	PA&PI	AA&PA	AI&PI	AA&PI	AI&PA	PA&PN	PI&PN
divertir	0.003 *	n/s	n/s	n/s	0.02 *	n/s	n/s	n/s
espantar	n/s	0.004 *	n/s	n/s	0.042 *	0.013 *	0.0004 *	n/s
entristir	n/s	n/s	0.015 *	0.001 *	0.002 *	0.002 *	n/s	0.049 *
encantar	n/s	n/s	0.057.	0.003 *	0.014 *	0.015 *	n/s	0.047*
molestar	n/s	5.394e-05 *	0.001 *	n/s	0.090.	6.034e-05 *	n/s	0.004 *
preocupar	0.007 *	n/s	0..002 *	n/s	0.0009 *	n/s	n/s	n/s
estranyar	0.017 *	0.003 *	n/s	3.938e-06 *	0.027 *	0.015 *	9.379e-06 *	n/s

5 Discussion

5.1 On Comparisons

Based on previous research by Pijpops, Speelman (2015) regarding correlations between stimulus animacy and voice preference in Dutch EO verbs and the findings of Miglio et al. (2013) and Ganeshan (2019) on correlations between stimulus animacy and case marking of the experiencer in EO constructions in Spanish, it was expected that many items generated acceptable ratings, which we could replicate in this acceptability study (cf. subsection 4.1). In particular, high acceptance was expected for the AA and PI configurations of the tested verbs in both Spanish and Catalan, and also for the AI configuration to some extent. The PN configuration also generated acceptable ratings for most of the tested verbs, which is in line with the accounts of Rott et al. (2023) on Spanish and Prat-Sala, Branigan (2000) on Catalan. The PA items, which were expected to be less acceptable than the other configurations, scored low with all dative EO verbs in this study, except *preocupar*, and the accusative EO verbs also scored high in the PA configuration. The high acceptance rate in this acceptability study may not be attributed solely to the applied methodology but rather the type of knowledge that participants engage with when responding to

a task, and tasks based on comprehension, and acceptability studies in particular, are more likely to indicate acceptance than production-based tasks (Perpiñán 2018).

On the accounts of Perpiñán (2018) and Vega Vilanova (2022), we expected that the widespread Catalan-Spanish bilingualism in the Balearic Islands (Blas-Arroyo 2007; Cremades et al. 2024) may affect the acceptability ratings on the tested configurations of voice construction and stimulus animacy in favour of convergence towards the other language. However, we cannot determine whether this behaviour is characteristic of the varieties of Spanish and Catalan spoken in Mallorca based solely on this experiment due to the limited sample size drawn from a predominantly young (and educated) demographic from different cities and villages, which may also feature regional differences.

Interlingual comparisons between non-cognates cannot be directly attributed to properties of EO verbs the same way as for cognates, due to the potential differences in saliency arising from the usage of the lexeme in their respective language.

5.2 On Animacy

The analysis comparing the variances and means of the voice-animacy levels resulted in more significant results for the Acc-only verbs than the AccDat verbs, which is in line with our initial hypotheses.[8] However, this trend is not reflected in the analyses of the individual verbs. Furthermore, we expected the comparison of AA&PI and AI&PA to yield the least significant results due to the respective levels being either both preferable (AA and PI) or both detestable (AI and PA) (e.g. Pijpops, Speelman 2015). This hypothesis could not be supported via the collected data. In most lines of testing, either AA&PI or AI&PA or both frequently yielded significant results of variances and/or means. Regarding variance differences, among all verbs, AA&PI yielded the highest number of significant results, and the same goes for Acc-only verbs exclusively. AA&PI and AI&PA yielded some significant results among AccDat verbs but neither the least, nor the most (number-wise). Furthermore, it appears as though the comparisons of PA&PI resulted in (expected) significant results in a considerable number of lines of testing, while the comparison of AA&AI resulted in very few significant results, again, not in line with the initial hypothesis.

8 Based on the accounts of Ganeshan 2014; Miglio et al. 2013; Pijpops, Speelman 2015; Prat-Sala, Branigan 2000; Prat-Sala et al. 2000 and Verhoeven 2014; 2015.

Secondly, now referring to the mean differences, AA&PI and AI&PA yielded the highest number of significant results among all verbs, a trend reflected in the analysis of both Acc-only verbs and AccDat verbs. There is no uniform pattern regarding the remaining voice-animacy levels, which should all have yielded mostly significant results. The comparison of PN with PA and PI did not provide insightful results that suggest an alternative to the assumed animacy preferences.

Several factors may have influenced the ratings, such as the missing data on AA constructions including the verb *sorprendre*, as well as the possibility to interpret *encantar* as 'to bewitch' instead of 'to delight' (Royo 2021). Generally, this deviation in semantic meaning could have influenced speaker ratings depending on the items presented. However, *encantar* is one of the verbs whose descriptive analysis was most in line with our hypotheses and yielded no significant differences in variance, independent of which voice-animacy levels were compared.

6 Conclusion

In the presented study, speakers of Catalan and Spanish show a high degree of optionality with the acceptance of different configurations of voice and animacy in EO psych verb constructions. In light of the extended contact between the two languages and widespread bilingualism in the Balearic Islands, the fact that the acceptance is not reflected uniformly for all tested verbs indicates a dynamic and ongoing development in both languages, which motivates further research on psych verbs in Spanish and Catalan in the Balearic Islands, and by extension other regions that are subject to the influence of language contact.

We were further interested in whether eight Catalan EO verbs, four of which are traditionally only accepted with accusative case-marking and four of which are also accepted with dative case-marking, are subject to certain preferences regarding voice-animacy combinations. While it is striking that testing Acc-only verbs, in line with the second hypothesis, indeed yielded considerably more significant results than AccDat verbs, the remaining lines of testing did not allow for definite conclusions regarding either of the hypotheses on the verbs and their affiliations with the voice-animacy levels in question. We suggest revising the critical items and filler items used in this study to rule out semantic discrepancies of verbs like *encantar* and *estranyar*.

Abbreviations

3 = third person
ACC = accusative
AUX = auxiliary
CL = clitic
DAT = dative
DEF = definite
F = feminine
INF = infinitive
M = masculine
PL = plural
REFL = reflexive
SG = singular

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