

Reflexive and Reciprocals in Spanish and Catalan.

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Abstract

Across languages, two main strategies lead to reflexivity and reciprocity: a lexical meaning of the verb or a grammatical operation. The former strategy is available to a semantically restricted set of predicates, that can denote reflexivity and reciprocity on their own (e.g. *Alex and John kissed*, *Alex shaved*). The latter strategy can produce reflexivity and reciprocity by means of a grammatical element (e.g. *Alex and John thanked each other*, *Alex criticized himself*). In languages like English, there is an overt distinction between the two strategies. Other languages, like Spanish and Catalan do not show an overt distinction between both strategies as solely one construction is available. Spanish and Catalan use the clitic *se* to generate reflexive and reciprocal interpretations with transitive verbs in finite clauses. The usability of *se* constructions that are expressed differently in other languages raises two major questions: first, based on their surface structure, it is not clear whether Catalan and Spanish have a lexical strategy to produce reflexivity and reciprocity. Second, the emergence of both reflexive interpretation and reciprocal interpretation for the same surface form when the subject is plural raises the question whether the relation between reflexivity and reciprocity is of ambiguity or vagueness. In this thesis we will argue that lexical reflexive and lexical reciprocal entries are available in both Catalan and Spanish lexicons, and that the relation between reflexive and reciprocals interpretations is of ambiguity, not vagueness.

To answer the first question we will first review the main attributes that characterize the two lexical strategies cross-linguistically. We will concentrate on the realisation of these two strategies in Catalan and Spanish. By means of a specific set of diagnostics (including the discontinuous reciprocal construction, singular group noun phrases, the causative construction, the absolute construction, and the *ir + sin + infinitive* ‘go without + infinitive’ construction) we will identify which verbs in the Catalan and Spanish lexicons have a lexical reciprocal or lexical reflexive entry.

In order to answer the second question, and taking into consideration

the existence of lexical entries in both languages, we will explore whether Catalan and Spanish *se* constructions are vague or ambiguous between reflexivity and reciprocity. We will provide empirical evidence by means of two questionnaires in favour of ambiguity by showing that *se* constructions do not generally allow a so-called *mixed reading* (partly reciprocal, partly reflexive interpretation), unlike what the literature claims for Romance languages (Cable, 2014; Murray, 2008, 2015). Furthermore, we will consider lexical reflexivity as a possible confound: lexical reflexives, due to their intrinsic meaning, which allows a non-identity between the agent and the patient, might allow *mixed readings* to emerge. Therefore, we will also argue that lexical reflexivity needs to be accounted for when considering vagueness as an explanation for the overlap between reflexive and reciprocal *se* constructions in Romance languages.

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1 Introduction

Cross-linguistically, there are two main strategies to express reflexivity and reciprocity (Haspelmath, 2007; Heine & Miyashita, 2008): through a productive strategy including an overt argument of a binary predicate or by a unary predicate by means of the verb's lexical meaning. We will refer to the former strategy as *grammatical*, while the latter strategy will be referred to as *lexical*.

In English, the grammatical strategy requires a pronoun like *'herself'* for reflexivity and a pronoun like *'each other'* for reciprocity. On the other hand, the lexical strategy is expressed by zero morphology and is observed with intransitive verbs like *wash* (reflexive) and *hug* (reciprocal).

Other languages do not show an overt distinction between the two strategies, as solely one construction is available to produce reflexive and reciprocal meanings. Spanish, for instance, uses the clitic *se* to generate reflexive and reciprocal interpretations with transitive verbs in finite clauses. Other Romance languages exhibit similar strategies.¹

(1) *Spanish*

Gina **se** lava
Gina SE wash-PRS.3S
'Gina washes herself'

(2) *Spanish*

Captain Holt y Amy **se** agradecen/ abrazan
Captain Holt and Amy SE thank-PRS.3P/ hug-PRS.3P
'Captain Holt and Amy thank / hug each other /themselves'

Examples (1) and (2) depict the primary strategy by which Spanish expresses reflexivity and reciprocity with transitive verbs. Sentence (1) is an example of a reflexive construction. Sentence (2) shows a structure that may be interpreted as both reflexive and reciprocal. The ability of *'se'* to generate reflexive and

¹In this thesis we use the following glossing notation: PRS: Present; PST: past INF: infinitive; PTCT: participle; AUX: auxiliar verb; PL: plural; SG: singular; RCP: reciprocal;

reciprocal interpretations in finite clauses with any transitive verb raises two major issues: first, based on their surface structure, it is unclear whether Romance languages have a lexical strategy to produce reflexivity and reciprocity. Second, the emergence of reflexive and reciprocal readings in (2) raises the question of whether *se* is ambiguous or vague between a reflexive or reciprocal interpretation. In this research, we will explore these two questions focusing on Catalan and Spanish.

In the literature, it has been proposed that lexical reflexive and lexical reciprocal entries are present in the Romance lexicon (Hovav & Doron, 2009; Palmieri, 2018; Siloni, 2012). We support this approach by adapting Palmieri (2018) tests for lexical reflexivity and reciprocity in Italian, showing that the meanings represented by lexical reciprocals and lexical reflexives cross-linguistically may have a lexical entry in Catalan and Spanish.

Although Hovav and Doron (2009), Palmieri (2018), and Siloni (2012) mention the possibility of lexical reciprocals and lexical reflexives in the Romance lexicon, their instruments for lexical reciprocity and lexical reflexivity in French and Italian are insufficient for Catalan and Spanish. In the first part of this thesis, following Palmieri (2018), we provide specific tests to accurately identify lexical reciprocals and lexical reflexives in Catalan and Spanish.

In order to identify lexical reciprocals, we begin by reviewing the fundamental attributes that characterise a verb as a lexical reciprocal. Based on these characteristics and following the literature, we compile a set of tests where a reciprocal interpretation arises as a result of the verb's lexical entry. In some cases it is observable with a different morphosyntactic realisation.

In order to identify lexical reflexives, we review the key features of lexical reflexive verbs. Based on these features and following the literature, we compiled a set of constructions in which the contrast between lexical and grammatical reflexivity can be observed morphosyntactically.

In English, reflexivity and reciprocity never overlap. However, as shown in (2), the boundaries between these two interpretations appear to be blurry in Romance languages. This leads us to question whether Romance *se* construc-

tions are ambiguous (distinction between two different meanings) or vague (two instances of the same meaning) between reflexivity or reciprocity.

In the second part of the thesis, we will explore whether Catalan and Spanish *se* constructions are a case of ambiguity or vagueness. It is crucial to comprehend how reflexivity and reciprocity interact, not only for their semantics but also to determine whether they require unified or independent analyses.

Some studies (Heine & Miyashita, 2008; Palmieri, 2020) claimed that the Romance *se* constructions are ambiguous between reflexivity and reciprocity. Other studies (Cable, 2014; Murray, 2008, 2015) proposed that reflexivity and reciprocity might be two different interpretations of the same item. In support of the latter analysis, Cable (2014) and Murray (2008, 2015) argued that languages that utilise the same form to express reflexive and reciprocal constructions allow a so-called ‘mixed readings’: a partly reflexive, partly reciprocal interpretation. Cable (2014) and Murray (2008, 2015) assumed that mixed interpretations are available for every language that employs the same item for reflexive and reciprocal constructions; however, this generalisation has not been attested cross-linguistically.

Against such claims, Palmieri (2020), through an empirical evaluation, provided evidence in favour of ambiguity, demonstrating that Italian ‘*si*’ constructions do not generally allow mixed readings. In addition, her research highlights one important confound for the availability of mixed readings: lexical reflexivity. Palmieri (2020) show that mixed readings emerge in Italian with verbs with a lexical reflexive entry like ‘*to wash*’. Palmieri (2020) argues that the emergence of mixed readings with lexical reflexives is not generalised to all transitive verbs: lexical reflexives leave underspecified whether the agent and the patient are co-referential while the patient is volitional; hence, the availability of mixed readings may be a consequence of lexical reflexivity and not an indication of vagueness. By contrast, transitive verbs that do not have a lexical reflexive reading do not give rise to mixed reading, according to Palmieri (2018) account.

Following Palmieri (2020) we propose that Catalan and Spanish *se* constructions are a case of ambiguity and that mixed configurations may only occur as

a consequence of lexical reflexivity. In order to test our proposal, we repeated Palmieri (2020) for Catalan and Spanish. The outcomes of these empirical tests corroborate our hypothesis and provide evidence of the low acceptance of mixed readings with transitive verbs in Catalan and Spanish.

This thesis is structured as follows. §2 is focused on the identification of lexical reciprocity and lexical reflexivity. It will provide a general introduction to reciprocity and reflexivity, bringing attention to the differences between the grammatical operations and lexical meanings of both reflexivity and reciprocity and the main semantic and syntactic differences in order to identify lexical reciprocals and lexical reflexives. §3 discusses the overlap found in Romance reciprocal/reflexive *se* constructions and explains some relevant terminology. Following, §3 introduces how the literature accounts for such overlap. Within §3 we present our empirical tests, the results and the discussion of the results. Finally §4 will provide some general conclusions and proposals for further research.

2 Lexical meanings and Grammatical operations

Across languages, reflexivity and reciprocity are expressed by means of two main strategies: through a binary predicate including an overt argument, as in (3a)-(3b), or by a unary predicate by means of the verb's lexical meaning, as in (4a)-(4b).

- (3) a. John thanked himself
b. John and Mary criticised each other
- (4) a. John shaved
b. John and Mary hugged

English expresses reflexivity in (3a) due to the presence of the reflexive pronoun *himself*, and reciprocity in (3b) due to the presence of the reciprocal quantifier *each other*. We will refer to these two strategies as grammatical reflexivity and grammatical reciprocity. These two strategies are in principle available with any transitive verb. In some cases reflexivity and reciprocity can be realised with the intransitive entry of specific verbs as in (4a) and (4b). We will refer to these strategies as lexical reflexivity (4a) and lexical reciprocity (4b). These two latter strategies are only available to a restricted set of verbs.

In English, the lexical and grammatical strategies are recognized on the surface as in sentences (3)-(4). However, in other languages, such as Czech, German or Romance languages (Gast & Haas, 2008), these strategies are indistinguishable on the surface. Romance languages make use of the clitic *se*, which is generally placed in front of any transitive verb in order to generate reciprocal or reflexive meanings in finite sentences. Let us consider the following Catalan and Spanish examples:

- (5) *Spanish*
- Juan se afeita / agradece
John SE shave-PRS.1SG / thank.PRS.1SG
'John shaves/thanks himself'

(6) *Catalan*

En Joan i la María s'abracen / es critiquen
The John and the Mary SE hug-PRS.3PL / SE criticise-PRS.3PL
'John and Mary hug / criticise each other'

In Spanish and Catalan, *se* is the primary construction to convey reflexivity and reciprocity (see Vázquez and Fernández-Montraveta (2016) for further details). Therefore, one form leads to all reflexive (5) and reciprocal (6) interpretations, unlike English (4a) and (4b). This makes it unclear whether lexical reflexivity and lexical reciprocity are available in Catalan and Spanish.

Several studies (Hovav & Doron, 2009; Palmieri, 2018, 2020; Siloni, 2012) indicate the possibility of the existence of lexical reciprocity and lexical reflexivity in the Romance lexicon. Based on these studies, we argue that lexical reflexivity and lexical reciprocity are encoded in the Catalan and Spanish lexicons.

In the subsections that follow, we will explore lexical reciprocity and lexical reflexivity in Catalan and Spanish, and we will focus on criteria to identify these strategies. We will argue that under specific constructions, lexical reflexivity and lexical reciprocity might be revealed. This first part of the research will provide us with some insights into the realization of lexical reflexivity and lexical reciprocity in Romance languages. Understanding how lexical entries are realised in Catalan and Spanish will become relevant in the subsequent research in §3.

2.1 Reciprocity

Haspelmath (2007) classified monoclausal reciprocal constructions (constructions with one clause boundary²) into grammatical and lexical reciprocals. According to Haspelmath, the former strategy encodes reciprocity through the use

²Conversely to multi-clausal reciprocals, which are composed of multiple clauses (1); monoclausal reciprocals only have one clause (2):

- (1) Homer kissed Marge, and Marge Homer
- (2) Bart and Lisa pinched each other

of a grammatical marker, such as English *each other*, while the latter can convey reciprocal meanings by themselves. Haspelmath proposes that lexical reciprocal predicates may be found across languages. Let us consider sentences (7) and (8):

(7) John and Mary hugged/kissed

(8) John and Mary criticised/thanked *(each other)

The different surface forms of the two strategies can also denote distinct interpretations. Consider the following scenario: John before leaving for work decided to hug Mary while she was pouring herself a coffee; later that day, Mary decides to hug John while he is making dinner. This event can only be described by the grammatical reciprocal entry of *to hug*: John and Mary hugged each other. On the other hand, the lexical reciprocal entry of *to hug*, can only denote an event where John and Mary simultaneously hug (Dimitriadis, 2004; Palmieri, 2018; Siloni, 2012).

In English, we observed that lexical and grammatical reciprocity differ on their surface realisation and on the type of events they denote. Cross-linguistically, lexical reciprocals also display other semantic and syntactic characteristics that distinguish them from grammatical reciprocal predicates. One of the notable characteristics of lexical reciprocals is their ability to generate reciprocal interpretations under the discontinuous reciprocal construction. The discontinuous reciprocal construction is defined by Dimitriadis (2004) as a construction where the subject is divided into two parts: one is encoded as a syntactic subject and the other is encoded as a complement introduced by the preposition *with*. Dimitriadis (2004) observed that under this construction many verbs with a lexical reciprocal entry allow the reciprocal relation between the subject and the complement clause to hold;³ however, verbs with no lexical reciprocal entry fail to produce a reciprocal interpretation under the discontinuous reciprocal construction.

³English verbs are irregular in this respect, not all verbs allow to be paired with ‘with’. This effect is also observed in other languages

(9) *Greek* (Dimitriadis, 2004, p. 1)

O Yanis filithike me ti Maria
The John kiss-RCP.3SG with the Maria
'John and Mary kissed each other'

In sentence (9), the reciprocal relation between the subject set *Yanis* and *Maria* holds: they kissed. With the grammatical reciprocal entry of *Filo* 'to kiss' the construction results in ungrammaticality (10).

(10) *Greek* (Dimitriadis, 2004, p.2)

*O Yanis filise o enas ton alo me ti Maria
The John kiss-PST.3SG the one the other with the Mary

Dimitriadis (2004) and Siloni (2012) observed that when there is a lexical/grammatical distinction, it is only lexical reciprocals that may allow the discontinuous reciprocal construction.

Another distinction between grammatical and lexical reciprocals is their capacity to produce a reciprocal interpretation when paired with a singular group noun phrase (Palmieri, 2018). A group noun phrase is a morphosyntactically singular but semantically plural noun that can accept a plural 'of' adjunct (e.g. *a committee of frogs*) (Barker, 1992). These nouns include terms such as *committee* or *team*. Barker (1992) proposes that in English group noun phrases denote atomic individuals, that is, entities lacking internal structure. This means that it is not possible to determine the number of members of a group by examining the denotation of a group noun (Winter, 2002); furthermore, Barker observes that, generally, group noun phrases cannot serve as the antecedent of *each other*. Barker observes that in American English, group noun phrases are singular, and are non-compatible with grammatical reciprocity. For instance sentence (11) where the grammatical configuration of *to meet* results in ungrammaticality. By contrast, the lexical reciprocal entry of the same verb can be combined with the group noun *the committee* and generate a reciprocal interpretation with a singular predicate, as in (12).

(11) *The committee of frogs has met each other

(12) The committee of frogs has met

So far we have discussed English and Greek, where there is an overt distinction between lexical reciprocity and grammatical reciprocity, let us explore how this strategy is realised in Romance languages. By looking at how lexical reciprocal verbs are able to produce reciprocal interpretations under the discontinuous reciprocal construction, their ability to pair with group noun phrases, and the possibility to express reciprocity without any additional grammatical marking, Palmieri (2018) utilised these properties to identify verbs with a lexical reciprocal entry in Italian. We will use the same elements for Catalan and Spanish.

As we observed in §2, grammatical and lexical reciprocity are not directly recognisable on the surface in languages like Spanish and Catalan. This makes it unclear whether lexical reciprocity is available in Catalan and Spanish.

(13) *Catalan*

En Joan i la María s'abracen/s'agraeixen
The John and the Mary SE hug-PRS.3PL / SE thank-PRS.3PL
'John and Mary hug'

(14) *Catalan*

Juan y María se abrazan/ se agradecen
John and Mary SE thank-PRS.3PL/ criticise-PRS.3PL
'John and Mary thank each other'

(15) *Italian*

Gianni e Maria si abbracciano/ ringraziano
John and the Mary SE hug-PRS.3PL/ thank-PRS.3PL
'John and Mary hug/thank'

Palmieri (2018) proposed that lexical reciprocity is encoded in the Italian lexicon and that these entries can be revealed under specific constructions. Palmieri

provided evidence of a set of Italian transitive verbs that can produce reciprocal interpretations when paired with group noun phrases, as in (16) and under the discontinuous reciprocal construction, as in (17). Furthermore, Palmieri also discovered a set of verbs that are capable of producing reciprocal interpretations without the Italian clitic *si*, as in (18). Palmieri observed that these set of verbs also allowed reciprocity with group noun phrases and under the discontinuous reciprocal construction.

(16) *Italian* (Palmieri, 2018, p.24)

Il commitato collabora
 The committee collaborates
 ‘The committee collaborates’

(17) *Italian* (Palmieri, 2018, p.23)

Mary (*si) collabora con Lisa
 Mary SE collaborates with Lisa
 ‘Mary collaborates with Lisa’

(18) *Italian* (Palmieri, 2018, p.25)

Sara ha fatto (*si) abbracciare (*si) Mary e Lisa
 Sara has made SI hug SI Mary and Lisa
 ‘Sara caused Mary and Lisa to be hugged/left/consulted’
 ‘Sara caused Mary and Lisa to hug/break up/confer’

We show that Spanish and Catalan are similar to Italian in this regard. In order to examine this hypothesis we repeat Palmieri’s tests for Catalan and Spanish. We looked into the ability of the verbs from our data set to produce reciprocal interpretations with group noun phrases and their ability to produce a reciprocal interpretation under the discontinuous reciprocal construction; lastly we also looked at the possibility of Spanish and Catalan lexical reciprocals to produce reciprocal interpretations without *se*.

In order to test our proposal we first compiled a list of Catalan and Spanish verbs and classified the verbs from the data set into transitive/intransitive based

on their ability to take (or not) a direct object.⁴ We also checked whether the verbs from our data set allowed to be paired with *se* in their finite entry or not (see DOI).

We will use *casar* ‘to marry’ in Spanish and Catalan to exemplify the behaviour of lexical reciprocals, and we will use *agradecer* ‘to thank’ in Spanish and *agraïr* ‘to thank’ in Catalan, to exemplify the behaviour of transitive verbs. DOI

2.1.1 The discontinuous reciprocal construction

We show that Catalan and Spanish discontinuous reciprocals appear with a restricted set of predicates with a transitive entry, as in (19a)-(19b), which are similar in their meanings to the verbs that show the discontinuous reading. We conclude that Catalan and Spanish have lexical reciprocal verbs similarly to Italian. With verbs without a lexical reciprocal entry, the construction fails to create a reciprocal interpretation, as we can observe in (20a)-(20b).

⁴We checked the translations of the verbs in the official language dictionaries to determine their (in)transitivity (Institut d’Estudis Catalans, 2019; Real Academia Española, 2001)

(19) a. *Spanish*

Juan se casa con María
John SE marry-PRS.1SG with Mary
'John got married to Mary'

b. *Catalan*

En Joan es casa amb la María
The John SE marry-PRS.1SG with the Mary
'John got married to Mary'

(20) a. *Spanish*

Juan se agradece con María
John SE thank-PRS.1SG with Mary
'John got thanked with Mary'

(Context: John was thanked by a third party together with Mary)

b. *Catalan*

En Joan s'agraeix amb la María
The John SE thank-PRS.1SG with the Mary
'John got thanked with Mary'

(Context: John was thanked by a third party together with Mary)

2.1.2 Group noun phrases

Due to the internal structure (or rather lack of it) of group noun phrases, in Catalan and Spanish only verbs with a lexical reciprocal entry allow a reciprocal interpretation to arise, as in (21a)-(21b). Grammatical reciprocals, on the other hand, fail to create a reciprocal interpretation, as in (22a)-(22b).

(21) a. *Spanish*

El equipo se abraza
The team SE hug-PRS.1SG
'The members of the team hug with each other'

b. *Catalan*

L'equip s'abraça
The team SE hug-PRS.1SG
'The members of the team hug with each other'

(22) a. *Spanish*

El equipo se agradece
the team SE thanks-PRS.1SG
'The team thanks itself'

b. *Catalan*

L'equip s'agraeix
the team SE thanks-PRS.1SG
'The team thanks itself'

2.1.3 The causative construction

Palmieri (2018) looked at the possibility of Italian lexical reciprocals to produce reciprocity without *si*. She shows that this is possible under the *causative construction*, used by Hovav and Doron (2009) to identify lexical reflexivity in French. In the causative construction the transitive verb is embedded under the causative verb *to make*, resulting in a passive interpretation. Hovav and Doron (2009) observed that a specific set of verbs allow reflexive interpretations to emerge without any grammatical marking, suggesting the existence of lexical reflexivity in French. Palmieri (2018) hypothesizes that the existence of lexical reflexivity in French suggests that the same phenomenon could occur in Italian reciprocals, since reciprocity and reflexivity have a similar realisation in both languages. Interestingly, a restricted set of Italian verbs if embedded under

the causative clause, allow a reciprocal interpretation to emerge, although *si* is not required. Palmieri (2018) shows that these verbs coincided with the verbs that allow reciprocity with group noun phrases and the discontinuous reciprocal construction in Italian. We observe the same phenomenon in Spanish and Catalan: transitive verbs, when embedded under the causative construction, generally produce a passive reading as in (23a)-(23b); however, verbs with a lexical reciprocal entry might produce a reciprocal interpretation on top of the passive one with out any reciprocal marker, as in (24a)-(24b). The lack of a reciprocal marker implies that the reciprocal interpretation might be provided by the verb’s inherent meaning.

(23) a. *Spanish*

He hecho agradecer a Juan y María
 Have-PRS.1SG make-PTCP thank.INF to John and Mary
 ‘I caused John and Mary to be thanked’

b. *Catalan*

He fet agrair a en Joan i la María
 Have-PRS.1SG make-PTCP thank.INF to the John and the Mary
 ‘I caused John and Mary to be thanked’

(24) a. *Spanish*

He hecho casar a Juan y María
Have-PRS.1SG make-PTCP marry.INF to John and Mary
'I caused John and Mary marry'
'I caused John and Mary to marry each other'

b. *Catalan*

He fet casar a en Juan i la María
Have-PRS.1SG make-PTCP marry.INF to the John and the Mary
'I caused John and Mary marry'
'I caused John and Mary to marry each other'

2.1.4 The absolute construction

The absolute construction, similarly to the causative, allows reciprocity to emerge without any additional grammatical marking in Catalan and Spanish. The absolute construction is composed of an absolute clause in participle or gerund conjugation followed by a finite clause. In Spanish and Catalan the participle conjugation disallows *se*: constructions such as ‘**Casadose*’ for Spanish and ‘**Casatse*’ for Catalan ‘to marry each other-participial’ are ungrammatical. On the other hand, the gerund does allow *se* in both languages (‘*Casandose*’ for Spanish and ‘*Casant-se*’ for Catalan ‘getting married to each other-gerund’). Therefore, for the sake of this research, we will only explore absolute constructions with participles. Under the absolute construction transitive verbs generally produce a passive interpretation. However, there is a set of verbs for which a reciprocal meaning can arise on top of the passive one, although *se* is disallowed. We assume that the lexical meaning of the verb determines the emergence of a reciprocal interpretation in the absence of any grammatical marker, as in (25a)-(25b). Conversely, grammatical reciprocals fail to produce a reciprocal interpretation, as in (26a)-(26b).

(25) a. *Spanish*

Agradecidos Juan y María salieron de la
Thank-PTCP John and Mary leave-PST.3PL from the
conferencia
conference
'After being thanked by someone John and Mary left the conference'

b. *Catalan*

Agraïts en Juan i la Maria van sortir
Thank-PTCP the John and the Mary have-PST.3PL leave.INF
de la conferencia
from the conference
'After being thanked by someone John and Mary left the conference'

(26) a. *Spanish*

Casados Juan y María salieron de la iglesia
Marry-PTCP Juan y Maria leave-PST.3PL from the church
'After marrying someone John and Mary left the church'
'After marrying each other John and Mary left the church'

b. *Catalan*

Casats en Juan i la Maria van sortir
Marry-PTCP the Juan and the Maria have-PST.3PL leave.INF
de la Iglesia
from the church
'After marrying someone John and Mary left the church'
'After marrying each other John and Mary left the church'

2.1.5 Concluding remarks on reciprocity

In §2.1 we showed that there are two groups of Catalan and Spanish verbs in terms of availability of reciprocal readings and we proposed that this distinction can be captured using the hypothesis on lexical reciprocal verbs, as Palmieri (2018) suggested for Italian. While the verbs 'to marry' and 'to thank', behave

in a similar way in Catalan and Spanish, there are nonetheless differences between these two languages. These can be observed in Table 1:

Lexical Reciprocals	
Spanish	Catalan
<i>debatre</i> ‘to debate’, <i>convergir</i> ‘to converge’, <i>confinar</i> ‘to confine’, <i>rimar</i> ‘to rhyme’, <i>conversar</i> ‘to converse’, <i>estar d’acord</i> ‘to agree’, <i>divorciar</i> ‘to divorce’, <i>correspondre</i> ‘to correspond’, <i>colaborar</i> ‘to collaborate’, <i>cooperar</i> ‘to cooperate’, <i>discutir</i> ‘to argue’, <i>coincidir</i> ‘to coincide’, <i>negociar</i> ‘to negotiate’, <i>fer l’amor</i> ‘to make love’, <i>coexistir</i> ‘to coexist’, <i>solapar/superposar</i> ‘to overlap’, <i>xocar</i> ‘to collide’, <i>casar</i> ‘to marry’, <i>trencar</i> ‘to break up’, <i>prometre(‘s)</i> ‘to get engaged’, <i>barrejar</i> ‘to mix’, <i>alternar</i> ‘to mix’, <i>entrellaçar</i> ‘to intertwine’, <i>unir/fusionar</i> ‘to merge’, <i>creuar</i> ‘to cross’, <i>alinear</i> ‘to align’, <i>intercanviar</i> ‘to exchange’, <i>separar</i> ‘to separate’, <i>topar</i> ‘to bump into’	<i>discutir</i> ‘to argue’, <i>debatir</i> ‘to debate’, <i>converger</i> ‘to converge’, <i>confinar</i> ‘to confine’, <i>rimar</i> ‘to rhyme’, <i>conversar</i> ‘to converse’, <i>estar de acuerdo</i> ‘to agree’, <i>divorciar</i> ‘to divorce’, <i>correspondre</i> ‘to correspond’, <i>colaborar</i> ‘to collaborate’, <i>cooperar</i> ‘to cooperate’, <i>coincidir</i> ‘to coincide’, <i>negociar</i> ‘to negotiate’, <i>hacer el amor</i> ‘to make love’, <i>coexistir</i> ‘to coexist’, <i>solapar</i> ‘to overlap’, <i>chocar</i> ‘to collide’, <i>casar</i> ‘to marry’, <i>dejar</i> ‘to break up’, <i>prometer(se)</i> ‘to get engaged’, <i>mezclar</i> ‘to mix’, <i>alternar</i> ‘to alternate’, <i>unir</i> ‘to unite’, <i>chocar</i> ‘to bump into’, <i>intersecarse</i> ‘to intertwine’, <i>alinear</i> ‘to align’, <i>intercanviar</i> ‘to exchange’, <i>fundir</i> ‘to melt’, <i>dar la mano</i> ‘to shake hands’, <i>separar</i> ‘to separate’

Table 1: List of Spanish and Catalan verbs that allow all four tests for lexical reciprocity

Both the causative construction and the absolute construction display very similar results due to their contrasting morphological marking between verbs that can produce reciprocity by themselves and verbs that are unable to do so. However, since the discontinuous reciprocal construction and the group noun phrases are based on semantic interpretation, the results show more variability between the verbs that allow each construction. However, the generalisations apply for both languages, and the relevant distinctions between them mostly concern the specific verbs that are characterized as lexical, rather the tests for characterizing them as such.

We observed how under the causative and absolute construction, verbs with a lexical reciprocal entry are capable of producing reciprocal interpretations without *se*, although they require *se* in their finite entries. Furthermore, the verbs that are able to generate reciprocal readings under these two constructions can also yield reciprocal interpretations when combined with group noun phrases and under the discontinuous reciprocal construction. However, not all verbs that allow reciprocity with group noun phrases or the discontinuous reciprocal construction can produce a reciprocal interpretation under the causative construction or the absolute construction. We propose that the behavior of the verbs that allow these two last constructions to produce reciprocal interpretations is attributable to the presence of a lexical reciprocal entry; in other words, the ability of these set of verbs to produce reciprocity without the grammatical marker *se* suggests that they have a lexical reciprocal entry. In addition, the verbs we identified as lexical reciprocals have very similar interpretations to the lexical reciprocal entries located by Palmieri (2018) in Italian.

We previously observed that reflexivity also displays the lexical/grammatical alternation. Having now illustrated the emergence of lexical reciprocity in Spanish and Catalan, let us look at reflexivity.

2.2 Reflexivity

In English, reflexivity is expressed by two main strategies: by means of a reflexive pronoun like *himself*, or by means of the verb's lexical meaning. Consider sentences (27) and (28):

(27) John shaved /bathed

(28) John thanked / criticized himself

The first strategy, which we will refer to as lexical reflexivity, conveys reflexivity on its own due to the intrinsic meaning of the verb, and is restricted to a specific set of verbs; it can be observed in the intransitive entry of verbs like *to shave* or *to bathe*, as in (27) (Alexiadou & Schäfer, 2014; Kemmer, 1993). The second strategy, which we will refer to as grammatical reflexivity, requires the presence of a *self*-pronoun in order to generate a reflexive meaning; this strategy is in principle available with any transitive verb, as in (28).

Besides their different morphology in English, one of the main distinctions between these two strategies is their ability to generate different interpretations. Grammatical reflexives require the agent and the patient to be co-referential on the activity depicted by the verb. Consider sentence (28), which only allows an interpretation in which John is both the agent and the patient. Lexical reflexivity, on the other hand, allows a non identity between the agent and the patient; the agent can be unspecified as long as the patient is volitionally undergoing the activity (Hovav & Doron, 2009; Palmieri, 2020). Consider sentence (27), which would be plausible if John went to the barber to get his beard shaved rather than shaving it himself. If John was shaved against his will, the interpretation would not be available. This interpretation is referred to by Palmieri (2020) as *passive collaboration*. We shall refer to it by the same nomenclature.

Now that we illustrated some characteristics of lexical reflexivity and how it is realised in English, let us look at how lexical reflexivity is realised in other languages. As we observed in §2, grammatical and lexical reflexivity are not directly recognisable on the surface in languages like Catalan and Spanish. Due

to the presence of the grammatical element *se* and the productivity of this construction sentences (29)-(30) seem instances of grammatical reflexivity. This makes it unclear whether lexical reflexivity is available in these languages.

(29) a. *Spanish*

Juan se afeitó
 John SE shave-PST.1SG
 ‘John shaved (himself)’

b. *Catalan*

En Joan s’ha afeitat
 The John SE have.AUX shave-PST.1SG
 ‘John shaved (himself)’

(30) a. *Spanish*

Juan se agradeció
 John SE thank-PST.1SG
 ‘John thanked himself’

b. *Catalan*

En Joan s’ha agraït
 The John SE have.AUX thank-PTCP.SG
 ‘John thanked himself’

It is noteworthy that sentence (29) allows a passive collaborative interpretation to emerge, where John went to the barber and volitionally got his beard shaved. The emergence of a passive collaborative interpretation in (29) but not in (30) indicates the possibility of the presence of a lexical reflexive entry. Furthermore, in the literature (Hovav & Doron, 2009; Palmieri, 2020) there is independent evidence that favours the postulation of lexical reflexive entries in the Romance lexicon: the causative construction (presented in §2.1.2 for the identification of Spanish and Catalan lexical reciprocal entries). We expect that Spanish and Catalan will display a similar behaviour as French and Italian. Accordingly, we propose that lexical reflexive entries will be found in the Catalan and Spanish lexicons.

To examine this proposal we selected a set of verbs based on Palmieri (2020) that we suspected were cases of lexical reflexivity in Catalan and Spanish as well. We embedded these verbs in constructions where we observed that the reflexive interpretation could emerge without any grammatical marking. The constructions are the following: §2.2.1 causative construction (Hovav & Doron, 2009), §2.2.2 the absolute construction, and §2.2.3 the *ir sin + infinitive* ‘go without infinitive’ construction. We will use *lavar* ‘to wash’ for Spanish and *rentar* ‘to wash’ for Catalan to exemplify the behaviour of lexical reflexives, and we will use *agradecer* ‘to thank’ for Spanish and *agraïr* ‘to thank’ for Catalan to exemplify the behaviour of transitive verbs.

2.2.1 The causative construction

We can observe in sentences (31) and (32) that reflexivity does not emerge in causative constructions without *se*, only with verbs whose meanings are suspected of being lexically reflexive (based on other languages).

(31) a. *Spanish*

He hecho lavar a Juan
 Have-PRS.1SG make-PRS.1SG wash-INF to John
 ‘I made John wash’
 ‘I made John wash (himself)’

b. *Catalan*

He fet rentar a en Joan
 Have-PRS.1SG make-PRS.1SG wash-INF to John
 ‘I made John wash’
 ‘I made John wash (himself)’

(32) a. *Spanish*

He hecho agradecer a Juan
Have.PRS.1SG make.PRT.PERF.1SG thank-INF to John
'I caused John to be thanked'

b. *Catalan*

He fet agrair a en Joan
Have-PRS.1SG make-PRS.1SG thank-INF to John
'I caused John to be thanked'

2.2.2 The absolute construction

Earlier in this thesis (§2.1.4), we presented the absolute construction to identify lexical reciprocals in Catalan and Spanish. This construction appears to also be suitable for identifying verbs with a lexical reflexive entry. When transitive verbs in participle conjugation are embedded within the absolute clause, they produce a passive interpretation (33); nevertheless, some verbs (suspected of having a lexical reflexive reading) produce a reflexive interpretation on top of the passive one without *se* (34). We also observed that these verbs allow a passive collaborative interpretation to arise: sentences (34a)-(34b) are acceptable in a situation where John was washing himself or was being washed by someone else while being volitional.

(33) a. *Spanish*

Agradecido Juan salió de la conferencia
Thank-PTCP.SG John left-PST.3SG from the conference
'John left the conference thanked by someone else'

b. *Catalan*

Agraït en Joan va sortir de la
Thank-PTCP.SG the John go-PST.3SG left-INF from the
conferència
conference
'John left the conference thanked by someone else'

(34) a. *Spanish*

Lavado Juan salió de casa
Wash-PTCP.SG John left-PST.3SG the house
'John left the house washed by himself or by someone else'

b. *Catalan*

Rentat en Joan va sortir de casa
Wash-PTCP.SG the John go-PST.3SG left-INF the house
'John left the house washed by himself or by someone else'

2.2.3 *Ir sin* 'to go without' construction

The Spanish construction *ir sin*, and its Catalan counterpart *anar sense*, take a verb in infinitive conjugation as its complement. Under this construction, the preposition *sin/sense* 'without' signals that the action depicted by the verb in infinitive conjugation is not performed. This construction has a figurative interpretation, which implies that the subject failed to realize the action expressed by the verb in infinitive on himself, as in (35) which roughly indicates that John forgot to comb his hair.

(35) *Spanish*

Juan iba sin peinar
John go-PST.3SG without comb-INF
'John did not comb his hair'

We observe that only the verbs suspected of being lexical reflexives allow this construction to be grammatical, as in (35)-(36); grammatical reflexives result in a nonsensical construction, as in (37a)-(37b). Moreover, the passive collaborative interpretation also emerges under the *ir sin/anar sense + infinitive* construction if the verb is a lexical reflexive. Although the construction states that the subject failed to perform the action to himself, an interpretation where the subject forgot to volitionally get the action performed by an unspecified

agent can still emerge with lexical reflexives, as in (35)-(36). For instance, sentence (36) would hold if Marisol failed to have her make up artist to apply make up on her. Sentence (37) fails to describe such scenario.

(36) a. *Catalan*

La Marisol anava sense maquillar
 The Marisol go-PST.3SG without apply-INF-makeup
 ‘Marisol forgot to wear makeup’

(37) a. *Spanish*

Marisol iba sin agradecer
 Marisol go-PST.3S without thank-INF
 ‘Marisol forgot to be thanked’

b. *Catalan*

La Marisol anava sense agrair
 The Marisol go-PST.3S without thank-INF
 ‘Marisol forgot to be thanked’

2.2.4 Concluding remarks on reflexivity

In §2.2 we showed the existence of lexical reflexive predicates in the Catalan and Spanish lexicons, and we proposed that the lexical/grammatical distinction can account for them. We also observed that these entries can be revealed by means of specific constructions. While we illustrated the constructions with verbs like *to wash* and *to thank*, the differences between both data sets are minimal. See Table 2:

Lexical Reflexives	
Spanish	Catalan
<i>Lavar</i> ‘to wash’, <i>depilar</i> ‘to epilate’, <i>vestir</i> ‘to get dressed’, <i>maquillar</i> ‘to apply makeup’, <i>peinar</i> ‘to comb hair’, <i>afeitar</i> ‘to shave’, <i>arreglar</i> ‘to get ready’	<i>rentar</i> ‘to wash’, <i>depilar</i> ‘to epi- late’, <i>vestir</i> ‘to get dressed’, <i>maquillar</i> ‘to apply makeup’ , <i>pentinar</i> ‘to comb hair’

Table 2: List of Spanish and Catalan verbs that allow all four tests for lexical reflexivity

We observed how under the causative, absolute and *ir sin* + infinitive constructions, verbs with a lexical reflexive entry produce lexical interpretations without *se*, although *se* is required in their finite entries. Moreover, the verbs that are able to generate reflexive interpretations under these three constructions can also produce passive collaborative interpretations. We proposed, based on the findings made in the literature (Hovav & Doron, 2009; Palmieri, 2020) and our own observations, that the possibility to generate reflexive meanings without *se* and allow a passive collaborative interpretations are indicators of lexical reflexivity. Furthermore, the verbs we identified as lexical reflexives have very similar interpretations to the lexical reflexives identified in other languages (Alexiadou & Schäfer, 2014; Hovav & Doron, 2009; Kemmer, 1993; Palmieri, 2020).

2.3 Concluding remarks

In this first part of the research we investigated the occurrence of lexical reciprocity and lexical reflexivity in the Catalan and Spanish lexicons. By focusing on their main semantic and syntactic traits, we found a collection of verbs with a lexical reflexive/reciprocal entry. We observed that, under specific constructions, these verbs can produce reflexive or reciprocal interpretation without *se*. We assume that the ability to produce reflexivity or reciprocity without *se* is

an indicator of a lexical entry of the verb. Additionally, the novel diagnostics we presented for identifying Catalan and Spanish lexical entries can serve as potential tests for identifying lexical entries in future cross-linguistic research.

So far, we have explored reflexivity and reciprocity as two distinct phenomena; we identified verbs that have a lexical reciprocal entry and a lexical reflexive entry. However, we can observe that in Romance languages, reflexivity and reciprocity display the same surface structure. This raises questions about the nature of the relation between reflexivity and reciprocity.

In the sections that follow, and taking into consideration the availability of lexical entries in both languages, we will explore the overlap between reflexivity and reciprocity in Catalan and Spanish in order to attempt to determine the nature of the relation between these two strategies.

3 Reflexivity and reciprocity: the overlap

In languages like English, reflexivity and reciprocity display different surface structures: reflexivity is generally expressed with a *self* anaphor, and reciprocity is generally expressed with the reciprocal quantifier *each other*. Languages like Catalan and Spanish use the same form in finite clauses to indicate both reflexive and reciprocal interpretations; both meanings can be conveyed with the clitic *se* when the subject is plural: sentences (38a) and (38b) can be understood as John and Mary washing each other or John and Mary washing themselves. Contrastively, only a reflexive interpretation emerges with a singular subject, as in (39a)-(39b).

(38) a. *Spanish*

Juan y María se lavaron
John and Mary SE wash-PST.3PL
'John and Mary washed themselves/each other'

b. *Catalan*

En Juan i la María es van rentar
The John and the Mary SE go.AUX wash-PST.3PL
'John and Mary washed themselves/each other'

(39) a. *Spanish*

Juan se lavó
John SE wash-PST.1SG
'John washes (himself)'

b. *Catalan*

En Juan es rentava
The John SE wash-PST.1SG
'John washed (himself)'

This phenomenon prompted questions regarding the relation between reflexivity and reciprocity in languages that employ the same surface structure to convey both meanings. The question posed in the literature is whether such constructions are a case of ambiguity, as proposed by Gast and Haas (2008), Heine and Miyashita (2008), and Palmieri (2020) or vagueness, as proposed by Cable (2014) and Murray (2008, 2015).

Comprehending the nature of the overlap between these two interpretations is crucial for their semantic analysis and determining whether they require independent or unified analyses. Before delving into the relation between reflexivity and reciprocity, let us lay down some relevant terminology.

3.1 Ambiguity and Vagueness: A brief introduction

Ambiguity and vagueness are fundamental concepts in semantic research. By ambiguity, we refer to the presence of two readings; in the context of the reflexivity-reciprocity contrast: there is one reflexive reading and another reciprocal reading. By vagueness, we indicate that a meaning is unspecified with respect to two different types of scenarios; in the context of the reflexivity-reciprocity contrast: there is one single operator that can cover both interpretations.

Various semantic and syntactic tests can be used to discern ambiguity from vagueness (Lakoff, 1970; Quine, 1960; Tuggy, 1993; Zwicky & Sadock, 1975). For the research that concerns us here, we will solely present the identity test, since it will be crucial for the following sections. The identity test consists of grammatical constructs that are assumed to require semantic identity. The concept behind the identity test is that if two judgements of the same item are accessible when applied to a conjoined argument, the item is vague. If the two judgements are non-accessible, then the item is ambiguous. Let us exemplify the identity test on the nouns *pupil* and *child*. *Pupil* is an example of ambiguity since *pupil* (student) and *pupil* (eye anatomy) are two intuitively separate meanings. *Child* is an example of vagueness since *child* (male) and *child* (female) are two intuitively united meanings.

(40) X (male) and Y (female) are children

(41) # X (student) and Y (eye anatomy) are pupils

Sentence (40) can accurately describe a scenario in which X is a male child and Y is a female child; implying that the term *child* is vague in terms of

gender. Sentence (41), on the other hand, cannot represent an event where X is a student and Y is part of the anatomy of the eye; implying that *pupil* is ambiguous between these two interpretations since it cannot simultaneously cover the two different meanings.

3.2 Ambiguity or Vagueness between reflexivity and reciprocity

The overlap between reflexivity and reciprocity in languages that use the same item to express both interpretations raised questions in the literature whether such constructions are ambiguous or vague.

In support of vagueness, Murray (2008, 2015) stated that the Cheyenne affix *-ahte*, which can express both reflexivity and reciprocity, allow a so-called ‘mixed scenario’ to emerge. A mixed scenario is a situation that is partly reflexive and partly reciprocal. Similarly to the identity test, when an element is vague it allows both interpretations to emerge, as in sentence (36) above. Figure 1 depicts a possible instance of a mixed reading where two children perform the action on each other and the third child performs the action on himself.

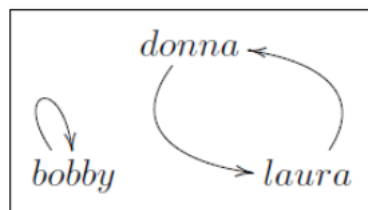


Figure 1: Mixed scenario (Murray, 2015, p.2)

Murray (2008, 2015) argues that the Cheyenne sentence (42) can truthfully describe a scenario similar to Figure 1 where some children scratched themselves, and some children scratched each other. She proposes that the ability of sentence (42) to allow both meanings to simultaneously emerge is given by the vagueness of *-athe*.⁵

⁵Murray (2008, 2015) uses underspecification; however, we will use the term vagueness.

(42) *Cheyenne* (Murray, 2015, p.5)

Ka'ěškóne-ho é-axeen-áhtse-o'ó
Child-PL.AN 3-scratch-ahte-3PL.AN
'The children scratched themselves'

'The children scratched each other'

Several scholars (Cable, 2014; Dotlacil, 2010; Gluckman, 2018; Haug & Dalrymple, 2018) took up Murray (2008, 2015) proposal and examined the relation between reflexivity and reciprocity as instances of the same meaning. These proposals assume that any language that produces reflexivity and reciprocity with the same form, would allow a mixed reading to emerge. However, these assumptions are not the result of a structured cross-linguistic research.

Contrary to such claims, other authors argue that the relation between reflexivity and reciprocity is of ambiguity (Gast & Haas, 2008; Heine & Miyashita, 2008; Palmieri, 2020). While the majority of claims are theoretical, Palmieri (2020) presents empirical data in favor of ambiguity, showing that Italian *si* constructions do not generally support a mixed reading. Her research also demonstrated a confound that plays a critical role concerning the availability of mixed readings in Italian: lexical reflexives. As we observed in §2.2, in this restricted set of verbs a passive collaborative interpretation can emerge: the only obligatory identity holds between the subject and the patient, as long as the subject volitionally undergoes the action (i.e. the agent can coincide with the subject but not obligatorily). Palmieri (2020) proposes that, with a plural subject, the passive collaborative interpretation holds for each individual forming the subject set: they get the action performed by a non-specified agent while being volitional. Consider the following Italian constructions:

(43) *Italian*

Kim Kardashian si rade
Kim Kardashian SE shave-PRS.3SG
'Kim Kardashian shaves (herself)'

(44) *Italian*

Kim, Kylie, Khloe e Kendall si radono
Kim, Kylie, Khloe and Kendall SE shave-PRS.3PL
'Kim, Kylie, Khloe and Kendall shave themselves/ each other'

Sentence (43) allows a reading where Kim K. was shaved by an unspecified agent while being volitionally engaged in the event. Sentence (44) would truthfully describe a scenario where Kim, Kylie, Khloe and Kendall each shaved herself or was shaved by someone else while being volitional. This construction supports different interpretations, including a mixed interpretation: sentence (44) would be true if Kim and Kylie shaved themselves while Khloe and Kendall shaved each other while showing volition during the event. Palmieri (2020) concludes that as long as a passive collaborative reading is available with a singular subject, a mixed reading can emerge with a plural subject. Therefore, if mixed readings emerge as a manifestation of passive collaboration, which is a result of lexical reflexivity, then it must be taken into account when considering the emergence of mixed readings as evidence for vagueness of Italian *si* constructions.

In order to attest this proposal, Palmieri (2020) provided empirical evidence through an online questionnaire. Her findings reveal that mixed readings emerge with Italian lexical reflexive verbs that allow a passive collaborative reading in the singular. By contrast, the data also reveals a lower acceptance of other transitive verbs under mixed scenarios, which favours an ambiguity analysis of the Italian *si* constructions.

Based on the findings from Palmieri (2020), we propose that Spanish and Catalan behave similarly to Italian in this respect. We propose that the overlap between Spanish and Catalan reflexive/reciprocal *se* constructions, as in (38), is better accounted for by ambiguity than vagueness. Furthermore, we also argue that mixed readings will emerge as a result of lexical reflexivity and passive collaboration.

We expect verbs without a lexical reflexive entry not to allow a passive collaborative interpretation in the singular nor a mixed scenario in the plural. We

also predict that mixed scenarios would rarely emerge in Catalan and Spanish, providing support for ambiguity between reflexivity and reciprocity.

In order to attest our hypothesis, we repeated Palmieri (2020): we used two truth-value judgement tasks, one per language, to collect data to assess the acceptability of mixed scenarios and passive collaborative interpretations for both lexical reflexives and transitive verbs. We first run the Catalan survey and based on its findings, and in order to attest whether our predictions hold for a larger data set, we expanded the Spanish survey.

3.3 Catalan: Empirical support for ambiguity

The questionnaire was run online through a LimeSurvey software (LimeSurvey Project Team / Carsten Schmitz, 2012). All participants were volunteers and did not receive any financial compensation.

The participants- The participants were recruited online. We recruited a total of 122 native Catalan speakers (average age = 42). All participants considered themselves either Catalan bilinguals or Catalan dominant speakers.⁶

The Verbs- Our target items consisted of ten verbs: five lexical reflexives and five transitive verbs that are not reflexive. The verbs were classified based on their ability to produce reflexive interpretations under the constructions proposed in §2.2.

Catalan Lexical Reflexives- *depilar* ‘to epilate’, *vestir* ‘to dress’, *maquillar* ‘to apply makeup’, *pentinar* ‘to comb’ and *rentar* ‘to wash’.

Catalan transitive verbs - *votar* ‘to vote’, *admirar* ‘to admire’, *criticar* ‘to criticize’, *castigar* ‘to punish’ and *premiar* ‘to give a prize to’.

⁶Catalan speaking areas include: Lleida, Barcelona, Tarragona, Girona, Andorra, La franja (Catalan speaking area located between Huesca (SP) and Lleida(CAT)), Balearic Islands, and Valencia. The Catalan speaking households: Rabat, Morocco; Renkum, The Netherlands; Den Bosch, The Netherlands; Eindhoven, The Netherlands and Uppsala, Sweden. All the participants considered themselves to be bilinguals.

The stories- Each target item consisted of a written story, followed by a *se* construction to be judged true or false. The scenarios were the following:

- Passive Collaborative scenario: A story with an individual X who had an action performed on themselves by some other person while being actively engaged and collaborative to the action. Followed by the following construction: ‘X *se* verb’.
- Mixed scenario: A story with four individuals X, Y, Z and A, two of which act on each other while the other two act on themselves. This was followed by a sentence with the following construction: ‘X, Y, Z and A *se* verb’.

The fillers- The questionnaire also contained control stories followed by an unquestionably true or false statement. These controls included idiomatic sentences and negative raising sentences. These fillers were included to assess the accuracy of participants. Each target item was alternated with two control items.

The questionnaire- We followed a between subject design: each participant was exposed to five target items and ten control items. No participant was exposed to any verb more than once. Since we had two sets of target verbs in two different conditions, we split each condition in four sub-versions:

- Version 1a: Lexical reflexive verbs in a passive collaborative scenario.
- Version 1b: Transitive verbs in a mixed scenario.
- Version 2a: Lexical reflexive verbs in a mixed scenario.
- Version 2b: Transitive verbs in a passive collaborative scenario.

Results- Table 3 displays the acceptance rate of each verb (the percentages are calculated based on the participants that answered *Cert* ‘true’ to the target items). Mixed readings are near unanimously accepted for lexical reflexive verbs, while hardly accepted for the transitive verbs that were tested. We observe a similar behavior in the acceptability of passive collaborative scenarios: they are

highly accepted for lexical reflexives, but nearly absent for the tested transitive verbs. The results from this questionnaire are in line with our hypothesis: in Catalan, mixed readings are available in verbs that allow a passive collaborative interpretation to emerge in the singular form. The lower acceptance rates of transitive verbs compared to lexical reflexives in both conditions favor ambiguity of Catalan *se* constructions.

	Verbs	Mixed Reading	PCO reading
Lexical reflexives	<i>Rentar</i> ‘to wash’	92%	32%
	<i>Depilar</i> ‘to epilate’	88%	89%
	<i>Vestir</i> ‘to get dressed’	100%	85%
	<i>Maquillar</i> ‘to apply makeup’	95%	77%
	<i>Pentinar</i> ‘to comb’	100%	40%
	Average	95%	65%
Transitive verbs	<i>Votar</i> ‘to vote’	28%	12%
	<i>Admirar</i> ‘to admire’	38%	0%
	<i>Criticar</i> ‘to criticise’	57%	4%
	<i>Castigar</i> ‘to punish’	93%	28%
	<i>Premiar</i> ‘to give a prize to’	75%	9%
	Average	58%	53%

Table 3: Results of the Spanish questionnaires per verb per condition

3.4 Spanish: Empirical support for ambiguity

The questionnaire was run online under a LimeSurvey software (LimeSurvey Project Team / Carsten Schmitz, 2012). All participants were volunteers and did not receive any financial compensation.

The participants- The participants were recruited online. We recruited a total of 172 native Spanish participants (average age = 38). Participants considered themselves native Spanish speakers or Spanish dominant bilinguals. The experiment followed a between-subject design.

The verbs- Our target items consisted of fourteen verbs: seven lexical reflexives and seven transitive verbs. The verbs were selected based on their ability to produce reflexive interpretations under the constructions proposed in §2.2.

Spanish lexical reflexives- *lavar* ‘to wash’, *depilar* ‘to epilate’, *vestir* ‘to dress’, *maquillar* ‘to apply make up’, *peinar* ‘to comb’, *arreglar* ‘to fix one’s appearance’, *afeitar* ‘to shave’.

Spanish Transitive verbs- *votar* ‘to vote’, *admirar* ‘to admire’, *criticar* ‘to criticize’, *castigar* ‘to punish’ and *premiar* ‘to give a prize to’, *escoger* ‘to choose’, *invitar* ‘to invite’.

The stories- Each target item consisted of a written story, followed by a *se* construction to be judged true or false. The scenarios were the following:

- Mixed Scenario: A story with four individuals X, Y, Z, and A, two of which act on each other while the other two act on themselves. This is followed by a sentence with the following construction: ‘X, Y, Z, and A SE verb.’
- Passive collaborative scenario: A story with an individual X who had an action performed on themselves by some other person while being actively engaged and collaborative to the action. Followed by the following construction: ‘X se verb’.

The fillers- The questionnaire also contained control stories followed by an unquestionably true or false statement. These controls included idiomatic sentences and negative raising sentences. These fillers were included to assess the accuracy of participants. Each target item was alternated with two control items.

The questionnaire- We followed a between subject design: each participant was exposed to five items and ten control items. No participant was exposed to any verb more than once. Since we had two sets of target verbs in two different conditions we split each condition in four sub versions:

- Version 1a: Lexical reflexive verbs in a passive collaborative scenario
- Version 1b: Transitive verbs in a mixed scenario
- Version 2a: Lexical reflexive verbs in a mixed scenario
- Version 2b: Transitive verbs in a passive collaborative scenario

Results- The results of the Spanish questionnaire are presented in Table 4 which displays the acceptance rates of each verb per condition (the percentages of acceptances are calculated based on the participants that answered *Verdadero* ‘true’ to each target item). Mixed readings are marginally accepted for the transitive verbs that were tested, but widely accepted for lexical reflexive verbs. The acceptance rates of passive collaborative scenarios display a similar pattern: consistently accepted for lexical reflexives but nearly absent for transitive verbs. The results of this questionnaire are in line with our hypothesis: verbs that allow a passive collaborative interpretation to emerge in the singular, allow a mixed reading to be available in the plural. The lower acceptance rates of transitive verbs compared to lexical reflexives in both target conditions is in favour of ambiguity of Spanish *se* constructions.

	Verbs	Mixed Reading	PCO reading
Lexical reflexives	<i>Lavar</i> ‘to wash’	95%	16%
	<i>Depilar</i> ‘to epilate’	100%	100%
	<i>Vestir</i> ‘to get dressed’	100%	85%
	<i>Maquillar</i> ‘to apply makeup’	100%	72%
	<i>Peinar</i> ‘to comb’	100%	47%
	<i>Arreglar</i> ‘to get ready’	92%	76%
	<i>Afeitarse</i> ‘to shave’	100%	58%
	Average	97%	66%
Transitive verbs	<i>Votar</i> ‘to vote’	40%	8%
	<i>Admirar</i> ‘to admire’	15%	0%
	<i>Criticar</i> ‘to criticise’	28%	4%
	<i>Castigar</i> ‘to punish’	64%	14%
	<i>Premiar</i> ‘to give a prize to’	50%	5%
	<i>Invitar</i> ‘to invite’	35%	5%
	<i>Escoger</i> ‘to choose’	21%	0%
	Average	39%	13%

Table 4: Results of the Spanish questionnaires per verb per condition

3.5 Discussion

Our hypothesis that the emergence of mixed readings is dependent on the availability of passive collaboration appears to be attested for both Catalan and Spanish. In both languages passive collaborative interpretations display lower acceptance rates than the mixed. However, in both languages, lexical reflexives display higher acceptance rates for both conditions if compared to transitive verbs. Mixed readings are highly accepted for lexical reflexives, while with transitive verbs they display lower acceptance rates.

Some lexical reflexive verbs display exceptionally low acceptances under the passive collaborative scenario. In Catalan, we can observe such results in the translations of the verbs *to comb* and *to wash*. We assume that this effect might

be caused by the formulation of the scenarios.

In order to avoid such effects, for the Spanish questionnaire we reworked the target items so that the intended scenario of each story would be salient enough. Furthermore, we expanded the Spanish data set by including two additional lexical reflexives and two transitive verbs in order to explore whether a larger data set would lend support to our hypothesis.

We can observe that although we reworked the stories, the differences between languages are minimal: first, the Spanish translations of *to comb* and *to wash* also display low acceptance rate under the passive collaborative scenario while they show high acceptance for the mixed scenario. Second, the new set of verbs we added into our Spanish questionnaire follows the pattern we predicted: lexical reflexives show higher acceptance rates for both conditions than transitive verbs.

Even though our data shows some results on specific verbs that are inconsistent with our hypothesis, when we look at the two groups of verbs as a whole, our data lends support to our hypothesis that mixed scenarios emerge as a result of passive collaboration. For both languages, lexical reflexives display higher acceptance rates in both target conditions. The fact that there is a considerable difference between the acceptance rate of lexical reflexives and transitive verbs in both languages points out that lexical reflexive entries do indeed constitute a confound. The low acceptance of transitive verbs under mixed readings lends support to ambiguity.

4 Conclusion

In this thesis, we investigated the realization of reflexivity and reciprocity in Spanish and Catalan. In many languages, reflexivity and reciprocity are realised by two main strategies: a lexical strategy or a grammatical strategy. In Romance languages like Italian, Catalan and Spanish these two strategies are identical on their finite entries as they are realised by the grammatical element *se*. Furthermore, if the subject is plural, any transitive verb has the same structure to generate reciprocal and reflexive meanings, which raised questions in the literature regarding the relation between reflexivity and reciprocity in Romance languages.

In the first part of the research we provide empirical evidence for the existence of lexical reciprocal and lexical reflexive entries in the Catalan and Spanish lexicons. In order to identify lexical reciprocity, and based on Palmieri (2018) findings in Italian, we used several diagnostics. First, we looked at the discontinuous reciprocal construction and group noun phrases, and we discovered that in both languages only a restricted set of verbs allow a reciprocal interpretation with these constructions. Second, we looked at the possibility of verbs that support these constructions to produce reciprocal configurations without *se*. We observed that under the causative construction and the absolute construction, although *se* is disallowed, verbs that we presuppose to be lexical reciprocals can nevertheless produce reciprocal interpretations. It results that the verbs identified in the first two diagnostics also produce reciprocal interpretations without *se* in the aforementioned constructions. We claim that the behavior of this set of verbs is attributable to the presence of a lexical reciprocal entry.

In order to identify lexical reflexives, and based on the literature (Hovav & Doron, 2009; Palmieri, 2020) we directly looked at the possibility of these verbs to realise reflexive interpretations without *se*; furthermore, we observed the possibility of lexical reflexives to realise a passive collaborative interpretation (i.e. agent can be unspecified while patient is volitional) to emerge. We illustrated that using the absolute construction, the causative construction and the *ir sin*

construction the existence of a set of verbs that can produce reflexive interpretations and that allow a Passive Collaborative scenario to emerge without *se*. We claim that the behavior of this set of verbs is attributable to the presence of a lexical reflexive entry.

In the second part of the thesis, we investigated whether the relation between reflexivity and reciprocity in Catalan and Spanish is a case of ambiguity or vagueness. Based on Palmieri (2020) findings in Italian in favour of ambiguity, we hypothesized that Catalan and Spanish present a similar paradigm in that respect. In order to attest our proposal we run two online questionnaires. Our findings from both questionnaires reveal that, contrary to what has been claimed in the literature by Cable (2014) and Murray (2008, 2015), Spanish and Catalan *se* constructions do not generally allow mixed interpretations (i.e. partly reflexive and partly reciprocal) to emerge with transitive verbs. We also argue that in Spanish and Catalan, lexical reflexives have a crucial role regarding the acceptability of mixed scenarios: we observed that lexical reflexives allow a passive collaborative interpretation to emerge in the singular. Therefore, in the plural they allow an interpretation where each individual has an action performed on themselves by an unspecified agent while being engaged and volitional; this situation can also include a mixed scenario. The low acceptances of transitive verbs under both conditions and the differences between both verb classes lend support to the hypothesis.

The data we presented here is focused on Spanish and Catalan. However, it is crucial that future research takes into consideration lexical reflexivity and passive collaboration since they can influence the acceptability of mixed elaborations. Lexical reflexivity should be taken into account since passive collaborative interpretations are available in other languages (Palmieri, 2020; Spathas et al., 2015). As further research would be compelling to closely observe the passive collaborative interpretation and its possible effects on the acceptability of mixed readings in other language families.

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