Bridging and dislocation in Catalan[1]

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Abstract

The exact anaphoric relation between the referent of dislocates and their previous discourse referents has been a matter of much discussion. In this paper, we reexamine this relation under the light of Clark's notion of bridging (Clark, 1977), and connect different anaphoric bridging types with left (LD) and right dislocations (RD) in Catalan. We report a judgment task experiment showing that while speakers clearly perceive LD and RD as different for most kinds of bridging, they rate RD better across the board, suggesting that speakers can use RD for a wider range of uses than previously assumed. Yet, albeit the preference for RD in Catalan, LD seems to be inherently linked to contrastive readings.

Keywords: bridging, left dislocation, right dislocation, anaphora, contrast, Catalan

1 Introduction

Clark (1977) describes bridging as a strategy for accommodating the given-new structure in cases where the given content is given for the speaker, but it is not for the hearer:

(1) John saw someone leaving the party early. It was Mary who left.

(2) In the group there was one person missing. It was Mary who left.

In the first utterance in (1), the speaker explicitly mentions that someone left, so the following cleft can be used to complete the information with Mary, while presupposing that someone left. Compare with the sequence in (2). Here the first utterance provides less information: "X was missing". However, the speaker can felicitously utter the cleft in the second utterance, just as in (1), taking as presupposed "someone left", even though this information is not provided in the

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previous discourse: we only know that "someone was missing". In this case, the hearer builds a plausible inference (i.e. a bridge) from "someone was missing" to "Mary left".

Bridging is pervasive in language and has been studied thoroughly (see Matsui 1993, Asher & Lascarides 1998, Irmer 2011, among others), but it figures prominently in the realm of dislocation structures, under different labels: partial ordered set (*poset*) relations (Ward and Prince 1991), anaphoricity (López 2009) or monotonicity (Bott 2007). In this paper, we test the connection between bridging phenomena and clitic left- (LD) and right-dislocation (RD) in Catalan by means of an experimental study. The paper is structured as follows: Section 2 presents some background on both bridging and dislocation constructions. Section 3 outlines the materials and methods of the experimental design. Section 4 presents the results and section 5 discusses them. Finally, section 6 summarizes the main conclusions.

2 Background

2.1 Bridging

As mentioned, bridging in considered by Clark as a type of inference necessary to accommodate particular given-new structures. Clark considers that this inference is a species of Gricean conversational implicatures, but one involving not just linguistic knowledge, but world knowledge and accommodation as well. If we return to our example in (2), it is clear that the speaker must make an inference from known information available in discourse, but also from world knowledge, just as happens with conversational implicatures (Grice 1975, 1981, 1989). Finally, bridging needs to accommodate the inferred meaning, for it is taken as granted even though it is not part of the common ground (on accommodation, see Lewis 1979, Stalnaker 2002, 2014 and Simons 2003). In this sense, bridging is akin to presupposition.

Clark discusses different types of bridging relationships, the most important for our purposes being the following[2]:

[2] There is a fourth type of bridging relationship discussed in Clark (1977), in which the given information provides Reasons, Causes, Consequences or Concurrences of previously mentioned states or events. We have not included this category in our study for it usually involves VP, rather than nominal, anaphora.

1. Direct reference: the given information makes direct reference to something just mentioned.
    a. Identity: "The house was large. **The size** surprised me."
    b. Pronominalization: "I met a man yesterday. **He** told me a story."
    c. Epithets: "I met a man yesterday. **The bastard** stole all my money"
    d. Set membership: "I met two doctors yesterday. **The tall one** told me a story."
2. Indirect reference by association: the given information does not refer to something explicitly mentioned, but it is closely associated to something previously mentioned.
    a. Necessary parts: "I looked into the room. **The ceiling** was very high."
    b. Probable parts: "I walked into the room. **The windows** looked out to the bay."
    c. Inducible parts: "I walked into the room. **The chandeliers** sparkled brightly."
3. Indirect reference by characterization: the given information plays a role in an event previously mentioned in the discourse.
    a. Necessary roles: "John was murdered yesterday. **The murderer** got away."
    b. Optional roles: "John died yesterday. **The murderer** got away."

2.2 Left and right dislocation

So far we have covered the basics of bridging phenomena. Now, we will consider the relation between bridging and dislocation constructions.

Since Ward (1988) (see also Ward and Prince 1991, and Birner and Ward 1998), it has been commonly assumed that topicalized phrases are licensed under a *partial ordered set* (*poset*) relation with a previous discourse referent:[3]

> Discourse Condition on Preposing in Topicalization
> The entity represented by the preposed constituent must be related, via a salient partially ordered set relation, to one or more entities already evoked in the discourse model.
> (Ward and Prince 1991: p. 173)

[3] A partially ordered set is a set defined by a relation that is either reflexive, antisymmetric and transitive or irreflexive, asymmetric, and transitive. See Wall (1972: 141).

Vallduví (1992) extends the poset analysis to left-dislocations (LD, henceforth), or to be more precise, to *links* in general, which are pointers to a certain address in the hearer knowledge store:

> In other words, hearers cannot jump from one address to the other unless those two addresses are related via a poset relation. The ban on the preposing of constituents that denote addresses that fail to be in a poset relation with some already-evoked address is, then, a reflection of the fact that the address the hearer is instructed to go to is not accessible from the address s/he is at the time of utterance. Only addresses that are in a poset relation with the current address are accessible.
> (Vallduví 1992: p. 91)

However, successful as it may seem for LD (see Villalba 2009: chap. 2, for a survey of the whole range of cases included under the poset relation), the poset account has to face a problematic case: inferable relations (see also Hendriks 1996, Hendriks and Dekker 1996). Observe the following dialogues, from Villalba (2009: chap. 2), where a bridging relation is established by means of LD:

(3) a. Els obrers començaran a treballar a l'edifici a les vuit.
'The workers will begin to work in the building at eight o'clock.'
b. Doncs als veïns no els farà gens de gràcia que els despertin tant d'hora.
'Well, the neighbors won't be amused with being awakened so early.'

(4) a. M'agrada molt aquesta casa.
'I like this house very much.'
b. A l'arquitecte, en canvi, no el va deixar satisfet el resultat.
'The architect, however, wasn't satisfied with the result.'

Even though LD is perfect in these contexts, no clear poset relation can be established between *edifici* 'building' and *veïns* 'neighbors' or *casa* 'house' and *arquitecte* 'architect', even though the relation is evident to everyone. Ward's *Discourse Condition on Preposing in Topicalization* does not formalize this possibility. Indeed, these are clear instances of bridging: in the former

case, building and neighbors are in an optional role bridging relation, whereas in the later, the relation seems rather one of necessary role.

While these cases are fairly well described for left-detachments (Hendriks and Dekker 1996, Bott 2007 or Brunetti 2009), right-dislocations (RD, henceforth) have received much less attention. To our knowledge, it was Ziv (1994) who originally remarked that right-dislocates involved bridging anaphora in cases like the following (see also Grosz and Ziv 1998):

(5) a. I saw Modern Times again yesterday.
b. He's amazing, (this) Charlie Chaplin.

In this case, the right dislocate is inferred from the previous mention of the movie, and hence it is a clear case of bridging.

These cases are a problem for an approach like the one defended in Bott (2007), namely that RDs (tails) must be upward-monotonic anaphors, whereas LDs (links) must be downward anaphors or non-monotonically anaphoric. He offers the following examples for Catalan, which we have adapted for ease of exposition:

(6) a. Which relationship did Bach have to string instruments?
b. [La viola]$_{\text{LINK}}$, segur que li va agradar.
`The viola, he surely liked.'
c. #Segur que li va agradar, [la viola]$_{\text{TAIL}}$.
'He surely LIKED, the viola.'

(7) a. Which relationship did Bach have to the viola?
b. Segur que li van agradar, [els instruments de corda]$_{\text{TAIL}}$
'He surely LIKED, string instruments.'
c. #[Els instruments de corda]$_{\text{LINK}}$ segur que li van agradar.
`String instruments, he surely liked.'

In (6), one can appreciate that LD (*the viola*) is felicitous when it is more specific than its antecedent (*string instruments*): we move from a general antecedent to a more specific dislocate –

downward anaphora, then. In (7), we reverse the situation with RD (*string instruments*), which is more general than its antecedent (*the viola*): we move from a specific antecedent to a more general dislocate –upward anaphora, then.

Yet, Bott acknowledges the existence of bridging cases not easily accounted under such a proposal (i.e. (3)-(5)), which he tries to reduce them to a subspecies of part-of relations, hence of downward-anaphora. Obviously, this makes the prediction that bridging anaphora would be fine for links, but not for tails, which is plainly wrong.

The view represented by Bott, namely that the conditions licensing RD are stricter than those of LD, is already present in Villalba (2000: ch. 3), who shows that RDs are only possible in a subset of the poset relations, most notably identity relations. Even though he acknowledges the bridging cases by Ziv (1994) just mentioned, his main conclusion is that the closer the relation between the antecedent and the dislocate (identity being the closest one), the better the RD (see Brunetti 2009 for similar conclusions for Italian).

To sum up, even though the literature on dislocation has identified several anaphoric relations to hold between dislocates and their discourse antecedents, which could fall under the label of bridging, we still don't have a clear view of the connection between these two phenomena. Our goal is to determine which information functions of LDs and RDs are better suited for encoding different bridging phenomena, and particularly whether the closeness of the anaphoric linkage between the antecedent and the dislocate is related to the choice between LD and RD.

3 Testing bridging and dislocation

3.1 Experimental design

We designed a judgment task with two dislocation types (LDs and RDs) and seven bridging types: HYPONYM (*fruit-watermelon*), SET MEMBERSHIP (*Italian cities-Florence*), EPITHET (*John-that idiot*), NECESSARY PARTS (*train-wagon*), INDUCIBLE PARTS (*kitchen-coffee maker*), OPTIONAL ROLE (*death-murder*), and NECESSARY ROLE (*murder-murderer*). Each item contained a sequence of two sentences: the second sentence was presented either with a left or a right-dislocation and the dislocate phrase included given information that needed to be bridged to an

antecedent in the first sentence. Example (8) shows an example for the INDUCIBLE PARTS type (*flat-heater*) in the RD condition. In the LD condition (see (9), the two sentences were identical except for the fact that the phrase "els radiadors" would be presented as a LD.

(8) a. La meva cosina s'ha canviat de pis i ahir va fer una festa.
'My cousin moved to another flat, and yesterday she organized a party.'

b. Els ha pintat de color taronja, els radiadors.
them has painted of color orange, the.PL heaters
'She has painted the heaters orange.'

(9) a. La meva cosina s'ha canviat de pis i ahir va fer una festa.
'My cousin moved to another flat, and yesterday she organized a party.'

b. Els radiadors, els ha pintat de color taronja.
the.PL heaters them has paintedof color orange
'She has painted the heaters orange.'

When building the items, we were very careful to place the antecedent in focus position (the rightmost position in the main clause), and we opted for object dislocates to avoid unwanted readings, for Catalan object dislocates must be resumed by a clitic (unlike subjects), and objects are not clitic-doubled (unlike datives).

Note that three of the types (namely, HYPONYM, SET MEMBERSHIP and EPITHET) are clear instance of poset relations, while the rest are not. Among the non-poset relations, they all represent bridging by indirect reference: two of the types represent a closer bridging relationship (NECESSARY PARTS and NECESSARY ROLES), while the other two represent more distant bridging relationships (INDUCIBLE PARTS and OPTIONAL ROLE).

Two counterbalanced randomized lists were prepared with 42 target items (= (3 sentences with LD + 3 sentences with RD) × 7 bridging types) and 40 fillers. Since the experiment was posted in the web (Survey Monkey), it was preceded by a language proficiency questionnaire and a brief instruction section. 168 native Catalan speakers completed the experiment, in which they had to rate the acceptability of every item in a 10-point Likert scale, as shown in Figure 1. We choose a 10-point scale for two main reasons: (i) we wanted to avoid having a scale with a

midpoint, and (ii) a 10-point scale is intuitive for our participants (mostly university students), since essentially the same system is used for grades. Participants evaluated one written target item at a time and the lists were constructed so that each person would only see each item either with a left-dislocation or with a right-dislocation.[4]

Figure 1. Example of target item.

3.2 Predictions

Taking as a departing point the view represented Vallduví (1992), Villalba (2000: ch. 3), and Bott (2007) that RD was better suited for the more closer anaphoric relationships, such as identity, we predicted that RD would be preferred in the most direct bridging types, namely those that required little or no deduction at all. Hence, EPITHET was clearly predicted to be better with RD than with LD, whereas at the other side of the scale, INDUCIBLE PARTS and OPTIONAL ROLE were predicted to be bad with RD, but fine with LD. As for less extreme cases, which involved a quite straightforward deduction step (HYPONYM, SET MEMBERSHIP, NECESSARY PARTS, and NECESSARY ROLE), we predicted LD to be preferred over RD by default.

[4] One anonymous reviewer pointed out to us that oral stimuli with controlled intonation contour should be preferred over potentially ambiguous written ones. We fully agree with his/her appreciation, and, indeed, we have included oral stimuli in a follow-up experiment in progress conducted with Lisa Brunetti.

4 Results

The 168 informants produced 7056 target answers. All analyses were performed with Rstudio (Version 0.98.1091 – © 2009-2014 RStudio, Inc.), running an R language version 3.1.2 (64 bits).

4.1 Descriptive statistics

On average, informants rated RD higher (5.43) than LD (4.94), and they preferred RD over LD in all bridging types, with the exception of EPITHETS and NECESSARY ROLES, as can be appreciated in Figure 2.

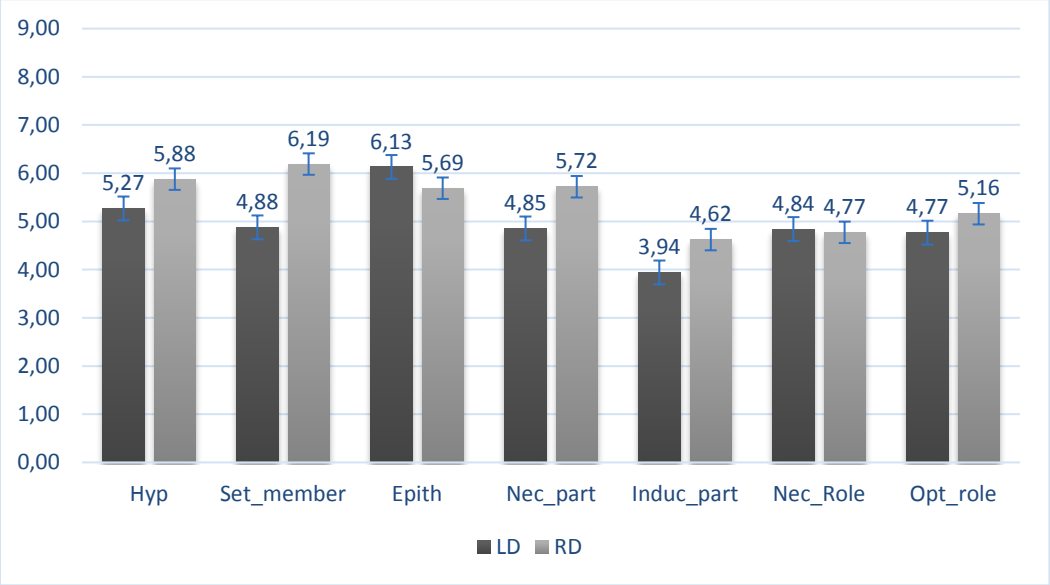

Figure 2. Means for LD and RD regarding bridging type.

The normalized values (z-scores) are presented in
Table 1, where the best ratings for RD are for HYPONYMS, SET MEMBERSHIP and NECESSARY PARTS, and LD only outscores RD clearly for EPITHETS and very slightly for NECESSARY ROLES.

Table 1 Normalized means by dislocation and bridging type.

	Hyp	**Set_member**	**Epith**	**Nec_part**	**Induc_part**	**Nec_Role**	**Opt_role**

LD	0,025	-0,120	0,389	-0,146	-0,500	-0,136	-0,191
RD	0,295	0,425	0,170	0,208	-0,230	-0,177	-0,010

4.2 Significance tests

To test the significance of our results, we conducted t-tests for each bridging type regarding dislocation: at $p<0.05$, the differences between LD and RD was significant for all bridging types, except NECESSARY ROLES; at $p<0.001$, differences were significant for HYPONYM, SET MEMBERSHIP, NECESSARY PARTS and INDUCIBLE PARTS. Thus, RD is preferred for all bridging types, except EPITHETS, for which the preference is reversed, and NECESSARY ROLES, for which there is no preference

When the related bridging types were compared, NECESSARY PARTS vs INDUCIBLE PARTS showed significant differences for both LD and RD, and NECESSARY ROLES vs OPTIONAL ROLES for RD only ($p<0.001$). Overall, the types with closer bridging relationships (NECESSARY PARTS and NECESSARY ROLES) receive higher ratings than their counterparts with less tight relationships (INDUCIBLE PARTS and OPTIONAL ROLES).

To confirm the t-tests, we build a linear model with the z-score as answer variable and the type of dislocation and bridging as dependent variables. The differences were found to be highly significant ($p<0.001$) for both LD and RD, and INDUCIBLE PARTS, NECESSARY PARTS, NECESSARY ROLES and OPTIONAL ROLES, and significant ($p<0.01$) for HYPONYM and SET MEMBERSHIP.

Finally, to control for individual variation, we build a linear mixed-effects model with the variable value as answer variable, the variable participant as a random factor and the bridging and dislocation types as independent variables. The model yielded highly significant effects ($p<0.001$) for all bridging types, and a significant effect ($p<0.05$) for dislocation type.

5 Discussion

The experiment shows that speakers consistently distinguish RD and LD uses, as the significance test show. Moreover, generally RD scores are significantly higher than LD scores overall, even in bridging cases typically suited for LD, namely those involving poset relations (HYPONYM and

SET-MEMBERSHIP). Hence, Catalan seems to prefer RD as the unmarked dislocation mechanism, which confirms original claims by Laca (1986), Solà (1990, 1995) and Vallduví (1992) that RD was, among other things, a purely focalization mechanism which removes nonfocal material from the final sentence position where sentence stress and focus are assigned.

Regarding bridging types, according to the received view discussed in 2.2, we expected that the closer the bridging relation between the antecedent and the dislocate, the better RD would be. If we take EPITHET (*John-that idiot*) as the closest one, since it is a variant of identity relation, and INDUCIBLE PARTS (*kitchen-coffee maker*) and OPTIONAL ROLE (*death-murder*) as the more distant, we cannot confirm such an expectation, as we remarked in 4.1.

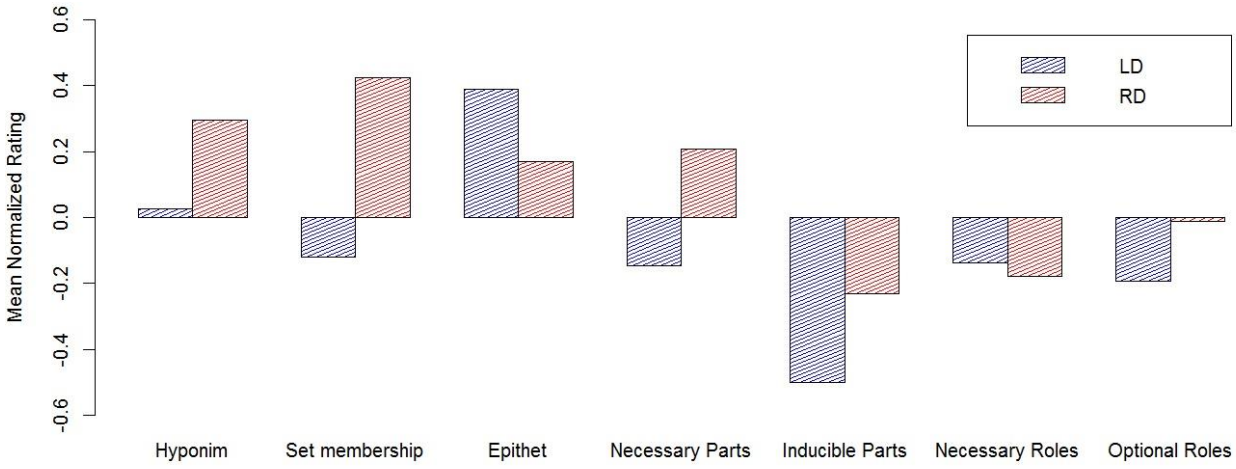

Figure 3. Normalized means for dislocation type across bridging types.

Just to reinforce the argument, consider the normalized means in Figure 3 (corresponding to the values in
Table 1): LD only rates better than RD with EPITHET, and NECESSARY ROLE, which are under any point of view, closer bridging relations than INDUCIBLE PARTS or HYPONYM. Yet, these two later relations show a clear preference for RD.

Moreover, the role of poset relations with LD is not particularly clear, either. We have described in 2.2 that poset relations have been claimed to underlie the licensing of LD (Ward and Prince 1991; Vallduví 1992). As explained in Section 3, among the seven bridging types studied, three of them can be analyzed as poset relations: HYPONYM (*fruit-watermelon*), SET MEMBERSHIP (*Italian cities-Florence*), and EPITHET (*John-that idiot*). Yet, a contradictory result follows, for LD only rates best in the latter, epithet, which is a kind of identity relation, and hence better

suited for RD. Moreover, the two other poset relations have a clear preference for RD. Overall, even though we didn't place poset relations as a condition in our experiment, the results cast doubts on the validity of the Discourse Condition on Preposing in Topicalization by Ward and Prince (1991: 173), which Vallduví (1992) endorses for Catalan LD.

We speculate that LD in Catalan may be subject to a requirement stricter than the Discourse Condition on Preposing in Topicalization, based on the poset relation. In other words, LD requires an overt contrast between the referent in the dislocated phrase and another referent. Thus, the prediction is that (10b), in which the watermelon is explicitly contrasted with the melon, would be higher rated than (10a), which was an item in our experiment and in which, although there is a poset relationship, there is no explicit contrast. We leave it for future work testing this contrast.

(10) a. Avui he menjat fruita de postres. La síndria, me l'he acabada tota.
'Today I've eaten fruit for dessert. The watermelon, I have eaten it all.'

b. Avui he menjat fruita de postres. La síndria, me l'he acabada tota; en canvi, el meló ni l'he tocat.
'Today I've eaten fruit for dessert. The watermelon, I have eaten it all; in contrast, the melon I have not even touched.'

6 Conclusions

In this article, we have shown that Catalan dislocation constructions fall into the realm of bridging phenomena, but in a very different way from what has been generally assumed in the literature. While it is clear that LD and RD are clearly perceived as different for all categories, the preferences are always on the RD side, against common assumptions on the narrower distribution of RD: RD enters into all bridging relations more easily than LD, with the exception of EPITHET. Overall, the data show that Catalan speakers can use RD for a wider range of uses than assumed in previous works (Vallduví 1992, 1994; Vallduví and Engdahl 1996; Villalba 2000, 2009, Bott 2007). Henceforth, our study confirms from an experimental point of view the insights in Mayol

(2007), Escandell-Vidal (2009), Villalba (2011), and Villalba and Mayol (2013), which call for a more flexible approach to the informative functions of RD.

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