

DISSERTATION ABSTRACTS

# The meaning of space in Catalan Sign Language (LSC): Reference, specificity and structure in signed discourse

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## 1. Summary

This dissertation is concerned with the semantic and pragmatic properties of sign space in Catalan Sign Language (*Llengua de Signes Catalana*, LSC). It offers a description and analysis of how spatial locations are integrated in the discourse grammar of LSC concerning the dynamic nature of discourse and taking into account dynamic semantic theories. The main achievements of this dissertation are three-fold:

(i) It shows that spatial locations are integrated into the grammar of LSC and, even more, that they denote specificity. Arguments are presented to fully support the r-locus view, which are implemented and formalised under a theoretical framework. As proven, the establishment of spatial locations are associated with meaning and correlate with a semantic phenomenon, namely that of scope. The analysis offered here proves that features like specificity and topicality can be attributed to spatial locations.

(ii) It analyses how spatial locations are set, given the dynamic nature of discourse. The establishment of spatial locations has been mainly studied within the scope of sentences, but their discourse behaviour has not been considered. Using a small-scale LSC corpus, it is shown that spatial locations consist in abstract points established in space independently of the direction towards the horizontal plane manual signs may take, which are categorically interpreted within the linguistic system.

(iii) It applies a dynamic semantic theory, such as classical Discourse Representation Theory (Kamp & Reyle 1993), to a visual-spatial language like LSC. Due to its face-to-face interaction, LSC uses sign space as well as deictic pronominal elements in the development of discourse. In this work, deictic uses and sign space are incorporated to the semantic representation.

## 2. Overview of the book

**Chapter 1** introduces the main objectives and goals of the dissertation and presents an overview of sign language research, which shows that formal semantics and pragmatics is the interface which is still at a very incipient state of research. LSC is an understudied language, but the few works available are overviewed, as well as a brief description of its sociolinguistic status. As for the methodological part, the small-scale LSC corpus built for the purposes of this work is presented. This small-scale LSC corpus consists of three types of data, namely semi-spontaneous, videos recorded for other purposes, and elicited data. This data was used at a preliminary stage in order to have a general sense of how LSC spatial locations are used in different language situations and what they encode for. This provided a picture within which specific data questions and intuitions were framed. Afterwards, elicitation tasks were undertaken and felicity judgments were also asked from our native informants. The annotation conventions are based on the guidelines established in Nonhebel, Crasborn & van der Kooij (2004), and ten linguistic tiers have been systematically annotated.

**Chapter 2** is devoted to presenting a broad revision of sign space, which is the main theme of this dissertation. After a description of the scope that sign space has in the three-dimensional extent in front of the signer's body in western sign languages, the relationship between the use of space and modality of language is presented. The two main opposing views concerning the analysis of space, namely the spatial mapping view (Liddell 1990) and the r-locus view (Lillo-Martin & Klima 1990) are contrasted, clearly favouring the r-locus view. However, the lack of formalisation of the latter view is noted and it is indeed one of the aspects this dissertation covers. The different syntactic and semantic analyses attributed to index signs are also presented, together with some provision of evidence of the linguistic status of sign space coming from acquisition and from cases of emergence of new SLs, namely Nicaraguan Sign Language and Al-Sayyid Bedouin Sign Language. Finally, the proposal underlying this dissertation is presented.

**Chapter 3** is concerned with the use of space of non-descriptive locations. Unlike descriptive locations which make a freer use of space, non-descriptive locations are categorically realised in the different areas within the three spatial

planes, which are standardly projected with respect to the body of the signer. A detailed description of the three spatial planes used in non-descriptive locations in LSC is offered. Localisation mechanisms directed to the different parts of spatial planes contribute to the establishment of a grammatical morpheme (p) that consists in an abstract point in space. The set of mechanisms employed in LSC to establish this spatial morpheme and hence to localise discourse referents are presented. It is shown that the direction in space towards the horizontal plane where (p) is established is irrelevant for the grammar of LSC. What is important is that the spatial point is categorically defined and interpreted within the linguistic system (Wilbur 2008). I argue that this abstract point in space functions as a clitic pronoun (Fischer 1975). This spatial morpheme is invariably established in the ipsilateral or contralateral direction without implying a contrastive meaning in the grammar of LSC. However, concerning the frontal plane, the features [low] and [up] are grammatically relevant when attached to (p). The clitic morpheme used by default has the feature [low], and the notation used here is (p). The marked feature [up] is used to denote concrete meanings, namely locatives, nouns denoting entities in a higher position in the social hierarchy, absence in the physical context, as well as non-specificity. As for the notation, (p)[up] is used for this marked use. The matrixes of features spatial locations have are outlined, and body-anchored locations are also included.

**Chapter 4** offers new evidence in favour of the r-locus view, according to which spatial locations stand for the representation of discourse referents. This chapter introduces the theoretical framework used in this dissertation, namely dynamic semantics. Spatial locations in LSC are associated with discourse referents, as understood in dynamic semantics. This is implemented under the specific formalisation of Discourse Representation Theory (Kamp & Reyle 1993). Discourse referents attached to narrow scope quantifiers, exemplified by non-argumental NPs, donkey sentences, distributivity and quantification contexts, genericity and reference to kinds, do not occupy a spatial location in LSC. Only discourse referents attached to wide scope quantifiers (i.e. those discourse referents not bound by any operator) are formally represented by spatial location (p) in LSC actual signing. Hence the phenomenon of establishing discourse referents in LSC space is directly associated with the establishment of variables into the model. Interestingly, only a specific set of discourse referents can be localised in space; specifically, only those which appear in the main universe of discourse in the semantic representation.

**Chapter 5** analyses the connection between spatial locations and the expression of definiteness. It shows that definiteness is not formally encoded in LSC sign space and that both asserted and presupposed discourse referents are established in LSC space. Although (in)definiteness distinctions can be expressed with a restricted set of determiners and a specific nonmanual marking, the establishment

of the discourse referent in sign space does not distinguish between definite and indefinite NPs. The features of localisation of (p) are the following. First, objects referred to by means of weak familiarity (Roberts 2003) do not have an explicit linguistic antecedent, but they have a corresponding discourse referent in the common ground. The pronominal form in weak familiarity contexts does not deictically refer to the present object, but rather to the discourse referent they are linked to. This shows that all references are anaphoric to the discourse model and that even deictic uses are anaphoric to the entities present in the discourse model. Second, the localised discourse referent is not marked as definite or indefinite, and both asserted and presupposed discourse referents are localised in space. However, for presupposed discourse referents, the establishment of (p) is better explained in terms of familiarity in the discourse model. Hence, (p) does not distinguish (in) definiteness and this is analysed with respect to the status of the discourse referent in the model.

**Chapter 6** is devoted to the expression of specificity in LSC in relation to sign space. The phenomenon I analyse here is the possibility of establishing spatial locations on the upper frontal plane as opposed to being localised on the lower frontal plane. This distinction is related to the expression of (non-)specificity. In LSC two kinds of localisation on the frontal plane are found, namely a strong and a weak localisation, which correlate with specific and non-specific marking, respectively. Strong localisation is instantiated by the feature [low] which is formally marked by the default spatial location (p), while weak localisation is instantiated by the feature [up], formally marked as (p)[up]. The data analysis and the correlation with the expression of specificity are taken as evidence of good motivation for the localisation pattern presented in this dissertation. The results favour a distinction between a strong localisation, which uses more co-occurring mechanisms directed to the lower part of the frontal plane and a well-established spatial location, and a weak localisation, which uses fewer mechanisms that do not necessarily overlap and are directed to an upper part of the frontal plane. This distinction motivated by the data has a direct correlation with the semantics of the language, and more concretely with specificity marking. On the one hand, strong localisation is associated with specificity, which can be explained by the three properties specificity encompasses, namely wide scope, partitivity, and identifiability. On the other hand, weak localisation is associated with non-specificity, and this is also explained by three properties, namely narrow scope, non-partitivity, and non-identifiability. It is important to note that the arguments provided in Chapter 4 concerning narrow scope and binding by an operator were instantiated in the language with lack of spatial location establishment. However, only isolated sentences were treated then. Once connected discourse is considered, the binding by an operator denoting specificity is instantiated in LSC grammar with a weakly established location. The

formalisation offered to explain this distinction is framed within the distinction between main and subordinate variables in a Discourse Representation Structure: whereas main variables represent a specific interpretation and they are expressed with spatial locations strongly established on the lower frontal plane, subordinate variables represent a non-specific interpretation and they are expressed with spatial locations weakly established on the upper frontal plane. Hence the main/subordinate Discourse Representation Structure distinction which is associated with wide and narrow scope respectively is overtly encoded in the LSC use of space.

**Chapter 7** builds on the principles concerning (p) identified in the previous chapters and presents fine-grained hypotheses which enhance the analysis of LSC spatial locations, specifically on the horizontal plane, by offering a discourse structure perspective. The achievements of this chapter are two-fold. First, it is shown that lower spatial locations correspond to discourse prominence, defined as variables with backward looking properties as well as forward looking properties, independently of the scope of the quantifier attached to the variable. Previously, I have defended that variables attached to narrow scope quantifiers correspond to a lack of spatial location establishment, as presented in Chapter 4, or also to an upper established location when denoting non-specificity, as presented in Chapter 6. However, here it is shown that variables attached to narrow scope quantifiers which are linked to a prominent discourse referent at a specific point in discourse behave like wide scope ones and establish a lower spatial location. The second achievement is related to the nature of spatial locations. (p) is an abstract point in space which does not correspond to an exact point nor it is related to a specific direction on spatial planes. In connected discourse, locations associated with the most prominent discourse referent can be shifted on the horizontal plane, showing that the exact direction on planes is irrelevant for the nature of (p). What is relevant is that the spatial location (p) is associated with a discourse referent from the model independently of the direction of the referring term on the horizontal plane in sign space.

**Chapter 8** provides a summary of the main findings and contributions of this dissertation. Moreover, it presents interesting issues raised along these lines that should be accounted for in future research.

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