A cartographic approach to spatial elements
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1. Goal: The goal of this talk is to show how a universal fine-grained structure of spatial constructions can explain some problems related to spatial elements in Spanish that haven’t been satisfactorily solved in the literature. The main question here will be to explain the difference between prepositions *a* (≈ at) and *en* (≈ in) in Spanish. For this we will answer the following questions:

a) Why *a*, which is generally used for directional cases, can appear in certain locative constructions?

(1) a. El vaso está {en/*a} la mesa
   The glass is {EN/A} the table
   b. El vaso está {en/a} el borde de la mesa
      The glass is {EN/A} the edge of the table

b) Why can’t *en* appear in directional contexts with verbs like *ir* (‘to go’)?

(2) Juan fue {a/*en} su casa
    Juan went {A/EN} his house

c) Why can *en* appear in directional contexts with verbs like *entrar* (‘to go inside/to enter’)?

(3) Juan entró {a/en} la biblioteca
    Juan entered {A/EN} the library

We will also see if this difference can explain the contrasts between:

a) Elements like *abajo* (≈ below), *arriba* (≈ on top of), *atrás* (≈ behind) and *alante* (≈ in front of), which we will call *a-* elements, and their *de-* counterparts: *debajo*, *encima*, *detrás* and *delante*, for explaining contrasts like:

(4) La caja está más {abajo/*debajo}
    The box is more {ABAJO/DEBAJO}

b) Elements like *aquí* (≈ here), *allí* (≈ there) and their –á counterparts *acá* and *allá*:

(5) La casa está más {allá/*allí}
    The house is more {ALLÁ/ALLÍ}

2. Background: Since Jackendoff (1983), it has been established that the structure of spatial Ps must be split into at least Path and Place. Following previous cartographic approaches to Ps (Koopman 2000, Svenonius 2006, 2010; Den Dikken 2010a, 2010b, Pantcheva 2011), we will propose a universal fine-grained structure underlying these elements. As those approaches do, we claim that this structure needs to be decomposed into a fine-grained set of syntactic projections beyond Path and Place. Each of these syntactic projections will encode a semantic component (see the syntactico-semantic isomorphism in Svenonius 2010). These projections are selectively present, but they
have to appear in the same order if present (following a *laissez-faire* approach as Starke 2004). Once the structure is built, the lexical items available in each language will give phonological content to it (following phrasal spell-out, Starke 2001).

3. Proposal: For explaining these differences I suggest the following structure:

\[
\begin{array}{c}
\text{Figure} \\
p' \\
\text{p} \\
\text{pP} \\
\end{array}
\begin{array}{c}
\text{TerminalP} \\
\text{p} \\
\text{Terminal} \\
\text{PlaceP} \\
\text{Place} \\
\text{AxPartP} \\
\text{AxPart} \\
\text{Ground-DP} \\
\text{...}
\end{array}
\]

The two projections on which we will focus are *AxPart* and *Terminal*. The former (from Svenonius 2006, based on Jackendoff 1996 and Marr 1982) gives a sublocation related to a referential location. We find this projection in elements like *in front of*, *behind*, *to the north of*… The latter, *Terminal* (from the central versus terminal coincidence opposition in Hale 1986 and Hale & Keyser 2002), gives the possibility to have two locations at stake in just one event. This projection is obligatorily present in directional constructions where the Figure establishes a spatial relationship with at least two points: a source and a goal. In cases like (1b) we see that *a* is possible in locative constructions when an *AxPart* is present: *the edge* is a sublocation related to a referential one (*the table*). As there are two different points, a *Terminal* projection can be present because it is possible to have two points with which the Figure establishes a spatial relationship. We can say then that, when *Terminal* is present in the structure, *a* is the lexical item chosen. We will argue that there is no *AxPart* projection in the construction with *en* in (1b).

As we have said that directionality needs *Terminal*, we can now explain why *en* is not possible in (2): if we choose *en* and not *a*, there will be a non-lexicalized *Terminal* projection in the structure. If we follow the Exhaustive Lexicalization Principle (2007), it is obligatory for every projection to be lexicalized. We will explain (3) saying that verbs like *entrar* lexicalize *Terminal* in the cases with *en*.

Finally, we will explain the difference between *a*- and *de*- elements and between *–i* and *–á* elements by saying that the *a*- and *–á* elements obligatorily lexicalize *Terminal* and this gives them different properties, like the possibility of being quantified and others that we will see.