

Spatio-temporal prepositions, progressive uses and egocentric frames of reference

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We explore a generally disregarded but interesting phenomenon concerning space, time, and prepositional deployment to richer denotations.

Problem.

Spatio-temporal prepositions (P) like *hasta* ‘up to’ find an alternative but coherent use across progressive Spanish varieties. **This option**, unavailable in ‘conservative’ Spanish varieties, alternates nontrivially with standard P choices in more progressive ones like Central American Spanish (CAM). The possibility of distinct, systematic, coherent denotations challenges the received view dismissing these data as mere anomalies/coercion (Lope Blanch 2008), pointing instead to a grammar-specific capacity.

hasta shows deviant behavior in two particular instances:

- (i) stative locative verbs, to express the location of an object (trajector) relative to a designated landmark. This use is unavailable in IS and extends to verbs of spatial location in nondynamic predications like (2).
- (ii) temporal location, also unexpected for nondurative-happenings (copula, inceptive, terminative) (4)-(5).

In this use, P merely locates the eventuality named by the verb, without rendering extent readings, just as (1) does not yield extent reading of the location (=extend up to). This creates a striking contrast both with IS interpretation and English literal glosses illustrated in (3), (6).

- (1) *El semáforo **está** (20 metros) hasta la esquina.*
The light is_{loc} 20 meters up-to the corner

'The light is (20 meters) [from here] on the corner'

(2) *Sigue el obvio camino que **queda hasta** la salida.*

follow the obvious path that stays up to the exit

'Follow the clear path that lies at the exit'

(3) *La clases **son/empiezan hasta** la noche.*

The lessons are/begin until the night

'The lessons are/begin at night' cf. 'The lessons are/begin until night (IS reading)'

(4) *El proceso **inicia/comienza hasta** la primaria.*

the process begins/starts until the primary

'The process begins/starts in elementary school'

(5) *Esto acaba **recién hasta que** se cuenten todos los votos.*

This ends only until that se count all the votes

'This ends once all votes are counted'

(6) *Estará **abierta hasta** las 4.*

beLOC.FUT open until 4.

'It will be open by 4'

cf. 'It will be open until 4 (IS reading)'

Both patterns apparently violate general principles regulating the occurrence of directional/projective boundary Ps in the expression of location. Being a right path/interval boundary P, *hasta* does not operate bounding a path of motion in (2) (*ir hasta la esquina* 'go up to the corner') or on verb-denoted event extension (*extenderse hasta la esquina* 'extend up to the corner'), and temporal uses do not invite a durative reading or an iterative semelfactive reading (repeated punctual events) creating an interval P can impose a boundary to, as expected under standard conditions(cf. *las clases empezaron hasta 2020* 'lessons started until 2020').

General intuition: location (of object/event) is far away from the speaker. Measure does not apply to the verb-described event, but something else (perspective).

Hypothesis: Preserving the same (right-boundary) semantics, CAM would deploy Ps like *hasta* to impose a condition (final point on the path) on a fictive interval from which the relative position of the object is estimated. In temporal uses, the same function applies, establishing a perspectival time interval (0,1) from a 0 point in time set by the speaker and 1 at the location of the event described by the verb. Importantly, the idea is strictly amenable to the abstract *preparatory phase* long argued for IS cases amenable to (6) (Bruccart 2012: 23). A well-known condition on directional P uses (7) subsumes both circumstances.

- (7) **ENDPOINT CONDITION** Directional Ps are allowed in such situations if the described location is understood as the endpoint of a hypothetical journey – a line of sight, a walking distance, or a route – from an implicit point of view (Cresswell 1978, Zwarts 2005:742) ((7)a) (*a fictive path*).

(7) dovetails with *hasta* being associated with a distinct predication benefitting from its projective nature **iff** this introduces a contextually-determined point of view from which location is estimated. Crucially, the semantics of locative constructions exploiting the directional P (cf. (9) transparently mirrors the additional variable introduced by the *from* adverbial in (7)a-b at the same time that conforms to the ‘distance’ flavor reported both in early studies (Dominicy 1982 i.a.) and by native speakers in experimental tasks (Author 2021). The entailment is grammatically evident; notably, it is strong enough to render the adjunct redundant (9), allowing it only if P (*hasta*) is dropped. Moreover, the fictive path can be modified by measure phrases as in (1).

- (8)
a. *The house is behind/outside/across the woods (from here)*
(Zwarts 2005(3))
b. *The car is one mile from the garage/to the east.*

- (9) *La casa está (hasta) detrás del lote (*?desde aquí).*
‘The house is behind of the lot (from here)’

In temporal uses, *hasta* can be dropped but not without a cost: losing this *preparatory phase* or ‘waiting time’ flavor noted in the descriptive literature available, if

not expressing an opposite relation. This would account for an important set of data not captured by elided negation or coercion solutions in existing accounts. Namely, in (10), adding a negative operator yields the opposite meaning (cf. *hasta ahora [no] logré entender/ desocuparme* ‘until now I didn’t understand you/get free’); whereas the addition of yet another repair component fails just as well (*hasta ahora [no] logré [sino] entenderte* ‘Until now I only got to understand you’) with an additional problem: the natural and quite telling systematic combination with the adverb *recién* ‘just now’ (cf. Méndez 2003).

- (10) (*recién*) *hasta ahora te entiendo / logré desocuparme.*
 just-now until now DAT understand I-achieved free-me
 ‘**Only now** I understand you/I got free’

Proposal.

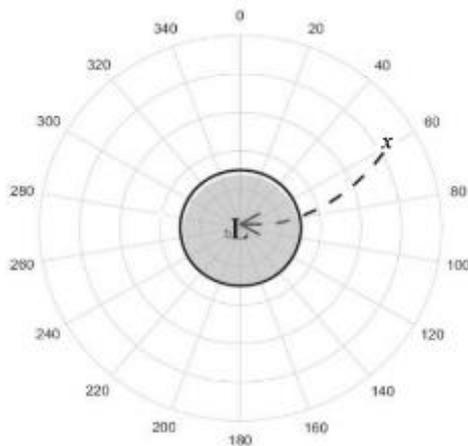
In progressive varieties spatiotemporal Ps could be made sensitive to complex ontological types of predication in ways which, although puzzling to conservative varieties, are particularly economic in terms of grammatical realization of a richer, more complex sense of location (notably, introduce perspective, skipping the addition of *from here* adjuncts), and, importantly, without requiring ad-hoc solutions proposed in the literature (multiple lexical entries, P ambiguity, elided NEG operators, coercion). By incorporating an extra value into the locative function (a zero-point defined by the observer’s position), location becomes twice-relative: the object is located in space/time relative to the (region defined by the) Landmark L (the corner in (1)), which is in turn relative to a zero-point *x* from which location is calculated; i.e., the viewpoint of the speaker. This would be a crucial step forward in the analysis, as it incorporates the premise that directional/projective Ps express directions on an interval/axis that can be defined either by inherent properties of the ground (allocentric view) or by the relative position of an observer (egocentric view) (Herskovits 1986 *i.a.*).

From here, the proposed analysis falls out: in both IS and CAM the use of *hasta* is equally accommodated by a birelational function AT-END-OF (Jackendoff 1990) where P imposes its distinctive locative condition (right boundary) on a path (interval). Yet, CAM differs in allowing this right boundary to be set on *an abstract interval* with its endpoint at *L*, which sets the *origo* relative to which the object is situated. *L*, in turn, is situated from a perspectival point out of the conceptual space of the landmark *S(L)*

– i.e., the region where the object is located – defined here as x (the zero-point of the perspectival interval) that instantiates the ‘from here’ flavor. Polar coordinates (Zwarts & Gärdenfors 2016), defined in the figure (11), efficiently capture the need for a convex hull so that all the intermediate points i are correctly contained within the relevant space S ; hence, all $i (i \in [0,1]) \subset S$, convexity is satisfied.

For temporal uses, *hasta* would be used to define a right boundary on an abstract path (‘waiting time’) ending at L (the point in time introduced by P). Happenings would be seen as objects located on temporal conceptual space under equal conditions. That P = right boundary on a perspectival path explains: (i) eventuality is not being interpreted as having any duration (lack of iterative repair in (2), (5), (10)); (ii) P not computed in relation to the interval described by V, but to a prefix interval ending at the reference time introduced by P (=prefix perspectival path). **SOLUTION:** intersect the P’s traditional definition (*terminus on time/places/quantities*, DRAE 2020), with perspectival egocentric frames of reference under EPC.

(11)



With x at $I[0]$ and $I[1]$ at L , I determines a function on the $[0,1]$ interval within a convex conceptual space S . That L is found at $I[1]$ and not $I[0]$, or at any intermediate value i so $[0 < i < 1]$, directly follows from the denotational properties of P: right boundary = b at the maximal value of the interval $I[1]=L$. $I(S(L))$. r_L estimates the relevant region containing b , so that $r(I(0)) > r_L$ and $r(I(1))=0$. (11) allows for the possibility that the fictive path could ultimately be a directed spatial curve to accommodate cases where the trajectory can be shaped in non-optimal ways, subject to the perception of the speaker/observer.

References

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