

Quantity, Causality and Temporality in Change Constructions

Author(s): Cristiano Broccias

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Quantity, causality and temporality in change constructions

CRISTIANO BROCCIAS

Università di Genova

0. Introduction

This paper investigates within a Cognitive Grammar framework three English constructions which are regarded as instantiations of a more general construction, the change construction. They evoke the notions of quantity, causality, and temporality, respectively, and it is apparent from the use of dynamic spatial prepositions such as *to* and *into* that they are construed as paths. The three English constructions are also compared with their Italian equivalents, thus allowing us to draw some general conclusions about the availability of change constructions in the two languages.

1. Three English constructions involving path construal

1.1. Quantification as a path

Quantification can be conceptualised as a path, as is shown by the bracketed prepositional phrases in (1)-(3) below.

- (1)
 - a. I love you [all the way **up to** my toes].
 - b. I love you [all the way **down** the lane as **far** as the river].
 - c. I love you [**across** the river and **over** the hills].
 - d. I love you [right up **to** the moon and back].

- (2) How do I love thee? Let me count the ways.
I love thee [**to** the depth and breadth and height
My soul can reach], ...
I love thee [**to** the level of everyday's
most quiet need], by sun and candlelight.
(Elizabeth Barrett Browning, *Sonnets from the Portuguese*, Sonnet 43,
ll.1-3 and 5-6)

- (3) I love you [**to** heaven/**to** the power of everything plus one]. (Stephen Fry,
The Stars' Tennis Balls, p.11 and p.19)

Let us consider the examples in (1), from a children's book by Sam McBratney (*Guess How Much I Love You*), as a matter of illustration. The intensity of the subject referent's love for the object referent is visualised as a path from the speaker (and hearer)'s location to some progressively farther and farther away landmark (or target). Similar considerations hold good for (2) and (3), which therefore illustrate that the pattern under scrutiny is, at least to some extent, productive in English.

1.2. Causality as a path

The examples in (4) demonstrate that causality can also be conceptualised as a path. For instance, (4a) implies a causal relation between the verbal event and the coming about of the librarians' astonishment. Crucially, such a relation undergoes path construal as is signalled by the spatial preposition *to*. In other words, the verbal event *led to* the psychological state denoted by the object of the preposition.¹

- (4) a. [S]he brazenly entered her name in the ledger as Erasmus Darwin ... [**to the astonishment** of the *librarians*]. (Alberto Manguel, *A History of Reading*, p.318)
- b. It was the Christmas season ... and Winifred got trapped in the carol singing, [**much to her annoyance**]. (Margaret Atwood, *The Blind Assassin*, pp.533-534)
- c. After that, they can kill everyone [**to their heart's content**], if that's what they want to do. (Margaret Atwood, *The Blind Assassin*, p.421)
- d. Clothes could always be purchased, naturally, but I would have to learn to wear them [**to effect**]. (Margaret Atwood, *The Blind Assassin*, p.285)
- e. Then Mrs Coulter spoke, [**to their surprise**]. (Philip Pullman, *The Amber Spyglass*, p.214)
- f. Eventually the hammer was formed [**to Iorek's satisfaction**]. (Philip Pullman, *The Amber Spyglass*, p.198)
- g. "Yes, that is what I heard," said the priest, [**to Will's relief**]. (Philip Pullman, *The Amber Spyglass*, p.105)

1.3. Temporality as a path

The last construction to be analysed here is exemplified in (5a), which is to be contrasted with (5b). Instead of the temporal preposition *until*, the prototypically dynamic spatial preposition *into* can be used to code temporality:

¹ Observe that this construction usually has a psychological deverbal noun (underlined in (1)) as the object of the preposition and that the psychologically affected entity (italicised in (1)) is usually expressed (but see (1d), where it is not since it has a non-specific reading).

- (5) a. She read well **into** the night.
 b. She read **until** late at night.

The three constructions exemplified above are also very interesting from a cross-linguistic point of view. As a matter of illustration, let us consider the translations of (1d), (2), a simplified version of (4a), and (5a):

- (6) Ti voglio bene {?? **fino alla/*alla**} luna, lassù, e ritorno.
 (to)-you (I)-want good until at-the/at-the moon there-up and return
- (7) Ti amo **fino** agli estremi di profondità, ...
 you (I)-love until at-the limits of depth
 Ti amo **entro** la sfera delle necessità quotidiane...
 you (I)-love within the sphere of-the needs everyday (adj.)
- (8) Si firmò come E. D. {**per lo/con/*allo**} stupore
 self (s/he)-signed as E. D. {**for the/with/*at-the**} astonishment
 dei bibliotecari
 of-the librarians
- (9) a. * Lesse (ben) **nella** notte.
 (s/he)-read (well) in-the night
 b. Lesse **fino a** notte fonda.
 (s/he)-read until at night deep (i.e. the dead of night)

The Italian data show that prototypically simplex spatial prepositions like *a* (cf. English *at*) and *in* (which is realised as *nella* if followed by the determiner *la*, as in (9a)) cannot be used. Further, a complex preposition like *fino a*² leads to variation in native speakers' judgements. (6) is very awkward (despite appearing in the Italian translation of McBratney's book). The occurrence of *fino a* in (7) sounds fine but may be influenced by both a non-spatial reading (cf. *Ti amo fino alla morte*, "I love you to death", lit. "until at the death") and the length of the prepositional phrase. Interestingly, the second occurrence of the original *to* (i.e. *to the depth*) has been replaced with an altogether different preposition, namely *entro* (cf. English *within*), which evokes a container-contained relationship. Similarly, *a* is impossible in (8), where English *to* can be translated as either *per* (cf. English *for*) or *con* (cf. English *with*). Finally, *fino a* is perfect in (9b) but because it retains its usual temporal meaning.

The three English constructions under scrutiny and their often awkward or impossible word-by-word renderings into Italian pose two interrelated questions,

² I have glossed *fino a* as *until at* rather than *up to* to explicitly point out the fact that *a* is not an intrinsically dynamic preposition like English *to*. That is, *a* is neutral to the distinction between motion (cf. English *to*) and lack thereof (cf. English *at*). Historically, however, *a* derives from the dynamic Latin preposition *a(d)*, which takes accusative case.

which I will address below. First, are the quantification as a path construction (QPC), the causality as a path construction (CPC), and the temporality as a path construction (TPC) related to other English constructions which similarly employ spatial conceptualisation and turn out to be (usually) impossible in Italian? Second, given that prepositions are relational predications and hence involve a trajector and a landmark (using Langacker's Cognitive Grammar terminology), what element is the trajector of a preposition like *to* in the examples above?

2. Change constructions

Starting with the former question, I propose that the QPC, CPC, and TPC are systemically related to the so-called resultative construction (see Goldberg 1995, Rappaport Hovav and Levin 2001 among many others), which I take here as also subsuming Goldberg's Caused Motion Construction (i.e. I do not distinguish in principle between states and positions, see also Broccias 2001). In more detail, both the QPC, CPC, and TPC, on the one hand, and the resultative construction, on the other, can be said to originate from the blending (in the sense of Fauconnier and Turner 2002) of two input spaces (or components), an event space and a change (or path) space. The former is coded by the verb and describes the involvement of an entity in an event E; the latter is coded by the *change phrase* (CP), which is a non-verbal phrase (corresponding to a prepositional phrase in the cases at hand), and depicts a change of state or position. The resulting clause is called a change construction (CC for short; see Broccias *forthcoming*). Consider (10) and (11):

- (10) He drank himself [to death]_{CP}. (*blend*)
Input 1 (event space): drinking event
Input 2 (change space): dying event
- (11) I love you [right up to the moon]_{CP}. (*blend*)
Input 1: loving event
Input 2: motion (to the moon) event

Both (10), a resultative construction, and (11), a QPC, can be analysed as stemming from the blending of two input spaces. (10) merges the drinking event with the event of somebody's dying (as a result of it). (11) merges the event of somebody's loving somebody else with a motion-to-the-moon event. The crucial difference between (10) and (11) involves the notion of causality. Whereas drinking is conducive to the subject referent's death in (10), no causal relation exists between the two constitutive components of (11). In other words, change constructions can be either causal or noncausal. Change constructions can be further subdivided into lexical and sublexical ones, as is shown in (12):

- (12) a. She punched him_i [to death]_i. (causal lexical CC)
 b. He fired the gun [into the supermarket]. (causal sublexical CC)

- c. She_i walked [into the room]_j. (noncausal lexical CC)

The CP *to death* is predicated of an overtly realised element in (12a) as indicated by the subscript index *i*. This is not the case in (12b), where the CP is understood as referring to the bullets “emitted” by the gun. Since the emitted substance (i.e. the bullets) are not specified in the syntax, I will refer to it as a sublexical entity (see Broccias 2001) and say that the construction is sublexically oriented. Finally, (12c) illustrates a noncausal lexical CC in that *into the room* is (usually) interpreted as simply specifying the location arrived at by the subject referent (see Broccias *forthcoming*: chapter 2 for details on the causative reading).

The paradigm in (12) obviously includes a gap since it does not contain any noncausal sublexical CC and hence poses the question of whether such a construction exists at all. My claim, which I will defend below, is that (a) the QPC and the CPC are indeed instantiations of the noncausal sublexical CC and (b) the TPC is a realisation of the noncausal lexical CC.

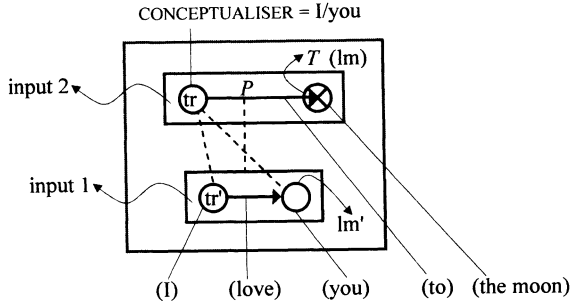
3. The quantification as a path construction as a change construction

It is worth observing that analogy may be insufficient to motivate the existence of the QPC. One could argue that a sentence like *I love you to the moon and back* has been modelled onto well-entrenched examples like *I love you to {distraction/tears/bits and pieces}*. The relevant prepositional phrases (which evoke an above-the-norm reading) may simply have been substituted with a *spatial* prepositional phrase. Still, if this were the end of the story, one would expect its Italian equivalent to be possible, given the existence of examples similar to the English ones such as *Ti amo alla follia* (lit. “I love you at the folly”, i.e. “I love you to distraction”). But, as was shown above (see (6a)), the use of Italian *at* is banned and that of *fino a* is problematic. It may well be the case that the greater productivity of the QPC in English as compared to Italian rests on the greater productivity of the (more general) blending mechanism illustrated in section 2 for change constructions. In other words, analogy may need to be supplemented by a readily available grammatical construction, that is a high activation potential for the change construction (intended as the grammatical output of the blending operation of section 2). This in turn may be related to the greater availability of dynamic prepositions in English (see section 6).

Although the dynamic preposition *to* in *I love you to the moon and back* explicitly signals a path (i.e. the prepositional phrase it heads counts as a change phrase), no causal relation exists between the verbal event and the change event (see section 2). Hence, the relevant change construction is to be classified as noncausal. It must now be decided what entity the change phrase is predicated of. Apparently, the change phrase is predicated of the subject and object referents: the speaker (*I*) invites the addressee (*you*) to scan along and thus measure a path so that the latter might compare it with the extension of love as a reified object. In other words, the non-spatial relation denoted by *love* is projected onto a path scanned by the speaker and addressee arriving at the location specified as the

preposition's complement. This has been visualised in (13) for a simplified version of the sentence under discussion.

(13)



(13) shows that *I love you to the moon* can be analysed as the blending of two input spaces (i.e. input 1 and input 2). Input 1 depicts an interaction between a trajector (tr'), *I*, and a landmark (lm'), *you*, which is symbolised as *love*. Input 2 is equated with a path scenario, where an entity (tr) moves along the path P (symbolised by *to*) thus ending up in the target (or landmark) T (i.e. the moon). Further, the parallel arrangement of the two components is intended to capture the lack of causality between them. The diagram explicitly indicates that the loving event (i.e. the bottom box) is projected onto (i.e. is conceptualised as) a path: a dashed correspondence line connects it to P . Finally, tr is equated with both tr' and lm' thus accounting for the interpretation that the change phrase is predicated of either.

I would like to contend that the lexical orientation for *I love you to the moon and back* is only an accident, due to the use of first and second person pronouns. If we substitute third person pronouns for them, as in *He loves her to the moon and back*, we are bound to conclude that the change phrase may not be predicated of either the subject or the object referent (or both). Rather, the conceptualisation of love as a path is due to the speaker or, in Cognitive Grammar's terminology, conceptualiser. Hence, we have an instance of what Talmy (1996) calls fictive (rather than factive) motion and Langacker (1990) subjective motion. The change phrase is predicated of the conceptualiser, who traces a mental path (see also Lee 2001: 45 for some related examples). I conclude that the change construction is noncausal and sublexical (in particular *conceptualiser-oriented*). Since the conceptualiser can be brought "on stage" by using non-third person pronouns, the sublexical nature of the construction may be blurred at first sight.

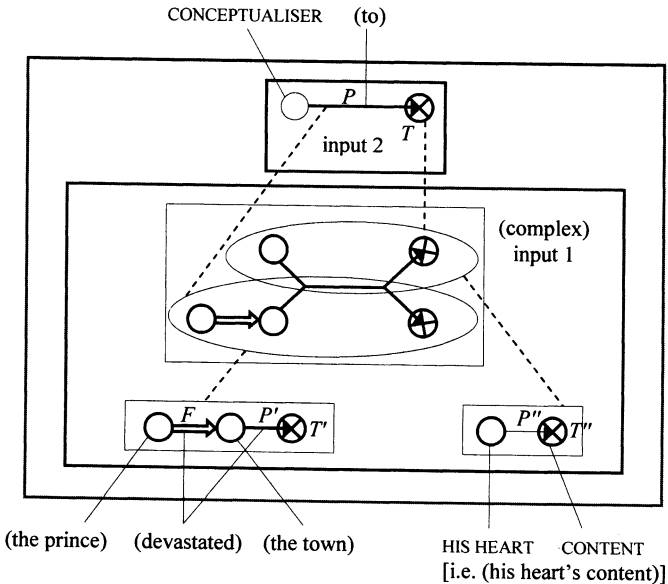
4. The causality as a path construction as a change construction

Let us now move to a more detailed analysis of the causality as a path construction, of which I will take (14) below as a representative example:

(14) The prince devastated the town [to his heart's content]_{CP}.

It was observed in section 2 that, differently from what is the case for the QPC, causality obtains between the verbal event (i.e. the prince's destruction of the town) and the complement of the preposition *to* in the CPC. Still, the trajector of the preposition *to* is not, as in "ordinary" resultatives like *She punched him to death* (see (12)), an argument of the verb. In (12), the referent of *him* moved, metaphorically speaking, *to death*. In (14), we cannot say that *the prince* moved *to his heart's content* (this is even clearer if we change the reference of the possessive determiner, as in *The prince devastated the town to my heart's content*). Further, the sentence is perfect in the passive (i.e. *The town was destroyed to his heart's content*) contrary to what happens with resultative cases (cf. *She_i danced the waltz [into the room]_i* vs. **The waltz was danced into the room*; see Rappaport Hovav and Levin 2001 for some discussion). I conclude that, although the blending of the event of the prince's devastating the town and that of his heart's becoming content is a causal one, such a merger is not symbolised syntactically (via the preposition *to*). Rather, the preposition *to* symbolises a path *P* onto which (subparts of the) events of the prince's devastating the town and his heart's becoming content are projected, as is visualised in (15).

(15)



(15) shows that (14) can be treated in similar fashion to *I love you to the moon and back*, that is, it can be said to originate from the noncausal blending of two input spaces (i.e. input 1 and input 2). They differ, however, in that input 1 in (15) is complex, being made up of two subcomponents (cf. the two boxes below). The

subcomponent in the left-hand corner depicts an energy flow (*F*) from *the prince* to *the town* resulting in the change of state of the latter (the final state is *T'* in the diagram). The causative verb *devastate* of course symbolises both force exertion and change (i.e. *P'*). The subcomponent in the right-hand corner describes the change of state of the prince's heart, which reaches the state diagrammed as *T''* (i.e. the state of being content). Observe that path *P''*, standing for such a change-of-state event, has not been emboldened because it is not symbolised syntactically (contrary to what would be the case in an "ordinary" resultative construction, see Broccias 2001 for details). Further, *his heart* and *content* have been capitalised (i.e. they have been treated as conceptual entities only) in order to show that they are symbolised not at the level of input 1 but only after the merger of input 1 with input 2. Finally, the existence of a causal relation between the two subcomponents in input 1 has been diagrammed by drawing them in sequential rather than parallel fashion.

The diagram in the middle in (15) visualises the fusion of the lower two subcomponents as involving the projection of *P'* and *P''* onto each other. This is intended to capture the intuition that the event of the town's destruction and that of the prince's heart's change of state were coextensive to some degree. Crucially, the devastation event is projected onto path *P* in input 2 (which is analogous to input 2 in (13)). That is, the event of the prince's devastating the town can be viewed as a path leading to an abstract region (*T*) which corresponds to *T''* (i.e. the final state achieved by the prince's heart). As was the case in the diagram in (13), the conceptualiser can be taken as the entity mentally tracing *P* and hence corresponds to the trajector of the preposition *to*.

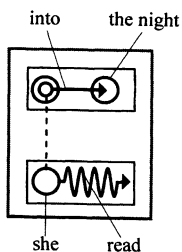
5. The temporality as a path construction as a change construction

The last construction to be detailed here is the TPC, which is exemplified in (16) and illustrated in (17a) for (16a). (17a) should be considered alongside (17b), which represents the semantic import of *She read until late at night* (see (5b)).

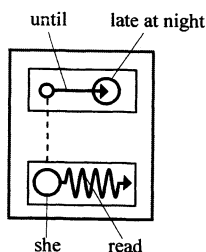
- (16) a. She read well into the night. (=5a)
 b. The chauffeur was relaxing **into** his monologue. (Ian McEwan, *The Child in Time*, p.140)

(17a) shows that the TPC is also a noncausal change construction (as indicated by the parallel arrangement of its two input spaces). Still, the TPC differs from the QPC and the CPC in that the blending of its two inputs also relies on the correspondence established between the trajector within input 1 (i.e. *she*) and the trajector within input 2 (the bigger circle in which it is inscribed depicts a source location *S*, standing for the location/state occupied by the trajector when the event designated by the verbal event starts). To put it differently, the TPC is not a conceptualiser oriented construction since the trajector of *into* is obligatorily (and not optionally as in the QPC) an argument of the verb.

(17) a.



b.



(17a) visualises our (metaphorical) conceptualisation of animate beings as entities moving through time (cf. *I'm halfway through this book*, where the spatial preposition *through* is employed to code temporality). I contend that this strategy is similar to the one we resort to when we use the *until* variant, see (17b). The *until* variant is analysed here as involving the correspondence of the trajector in input 2 with the whole input 1 (as indicated by the dashed line in (17b)) rather than a subpart of it, as in (17a). In other words, an event rather than an animate being is construed as moving along the time arrow.

6. The limited availability of change constructions in Italian

The virtual lack of the QPC, CPC, and TPC in Italian has been linked (see section 3) to the limited availability of change constructions in such a language. A motive must now be found for why Italian generally lacks change constructions. It is worth observing, first of all, that Italian does have some Resultative Constructions in Goldberg's (1995) sense (i.e. resultative constructions having to do with states rather than positions) with the simplex preposition *a* (see also Merlo 1989 and Napoli 1992 for some discussion). However, their productivity is severely restricted to a few cases like (18) below:

- (18) a. Ti amo alla follia.
 you (I)-love at-the folly
 'I love you to distraction'
- b. Lo hanno picchiato a morte/sangue.
 him (they)-have beaten at death/blood

As for Caused Motion Constructions (i.e. resultative constructions having to do with positions rather than states), it seems that simple prepositions like *a* and *in* (which, like *a*, is not inherently dynamic and hence may correspond to either English *in* or English *into*) cannot (usually) be used with non-punctual manner-of-motion verbs. Rather, the complex prepositions *fino a* and *fin dentro* are used. Consider the following data:

- (19) a. Camminò {fino al/*al} bosco.
 (s/he)-walked {until at-the/*at-the} wood

- b. {**Ha/*E'**} camminato **fino al** bosco.
 {(s/he)-has/*is} walked until at-the wood
- (20) a. I soldati **sono** corsi **alle** mura.
 the soldiers are run at-the walls
 b. Corsi **alla** stazione (in taxi).
 (I)-ran at-the station (in taxi)
 'I rushed to the railway station (by taxi)'
- (21) a. Il gatto è saltato **nella** scatola.
 the cat is jumped in-the box
 b. Ha zoppicato {**fin dentro/*in**} casa. (allative reading)
 (s/he)-has limped {until inside/*in} house

(19a) shows that the non-punctual manner-of-motion verb *camminare* (English *run*) can be employed in an allative construction only if the complex preposition *fino a* is selected. Interestingly, if auxiliary selection is anything to go by – i.e. selection of auxiliary *avere* (cf. English *have*) correlates with temporality, cf. {**Ho/*sono**} *letto fino a tarda notte*, lit. ‘{(I)-have/*(I)-am} read until at late night’ – we conclude that *fino a* has both a temporal “feature” and a spatial “feature” (i.e. the allative meaning conveyed by the construction).

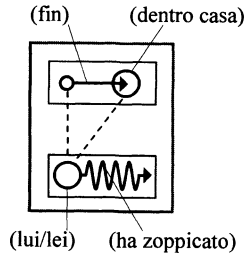
(20a) demonstrates that, in some cases, we do find manner-of-motion verbs used telically in conjunction with the simple preposition *a*. Auxiliary selection (i.e. the verb *essere*, cf. English *be*) reveals that such an example lacks temporal nuances (vs. (19a)). Nevertheless, (20a) may be a relic from Latin (cf. the infinitive form *ad muros currere*, lit. ‘to walls run’, quoted in Castigliotti and Mariotti 1966). Crucially, if we substitute *stazione* (‘railway station’) for *mura* as in (20b), the interpretation we get is that the subject referent went to the station quickly: (s)he may not have run at all but may have taken a taxi.

Finally, (21) illustrates that the simplex preposition *in* can be used only if the verb is to be interpreted punctually, as in (21a). The non-punctual verb *zoppicare* (cf. English *limp*) requires the complex preposition *fin dentro*.³ As was the case in (19), the use of *fino* also evokes a temporal interpretation. A simplified schematic representation for (21b) is offered in (22) (*lui=he, lei=she*).

The diagram in (22), which must be considered alongside the two in (17), captures the intuition concerning the spatial and temporal interpretation of *fino* in (21b). The whole input 1 (the lower box) is put in correspondence with the trajector in input 2 (the upper box), as was the case for English *until*, see (17b). That is, the event of limping lasted until the target (i.e. the interior of the house) was reached. Further, the trajector within input 1 has been linked to such a target in order to show that the subject referent ended up in such a location (i.e. the allative interpretation of the construction).

³ Final *-o* in *fino* is optional before the voiced plosive /d/.

(22)



I would like to propose that the nature of Italian simplex and complex prepositions motivates the limited productivity of change constructions in Italian. First, simplex prepositions like *a* and *in*, unlike English *to* and *into*, do not explicitly code a change (of state/position). Second, the complex preposition *fino* + simple preposition possibly evokes a complex scenario where temporality and spatiality intermingle (which may explain the non-perfect status of (6) above). These two factors may have prevented and may still be preventing the growth of Italian change constructions.

7. Conclusion

In this paper I have proposed that the availability of the English quantification as a path construction, the causality as a path construction, and the temporality as a path construction may be related to the postulation of a more general construction, the change construction, which in turn may depend on the existence of explicitly dynamic simple prepositions (contrary to what is the case in Italian). In more detail, the quantification as a path construction and the causality as a path construction have been analysed as instances of the sublexical noncausal change construction, where the preposition's trajector is to be equated with the conceptualiser. The two constructions differ however in that the latter includes a complex, rather than a simple, input 1 space. Finally, the temporality as a path construction has been regarded as an instance of the lexical noncausal change construction since the preposition's trajector necessarily (rather than optionally as in the quantification as a path construction) corresponds to the subject referent.

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Cristiano Broccias
Dipartimento di Scienze della
Comunicazione Linguistica e Culturale
Università di Genova
P.zza S. Sabina, 2
16125 Genova
Italy

cribroc@tin.it