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Adverbial causal clauses as relative clauses: on *siccome* ‘because/since’ from Old to Contemporary Italian

Emanuela Sanfelici
University of Padova
Emanuela.Sanfelici@unipd.it

Sira Rodeghiero
University of Padova
Sira.Rodeghiero@unipd.it



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Abstract

This paper investigates to what extent adverbial causal clauses and relative clauses can be reduced as one and the same phenomenon. Whereas causal clauses have always posed a challenge for a unified account of relativization and adverbial subordination in theoretical studies, typological research has long demonstrated that causal clauses are diachronically connected to relative clauses as well as to adverbial subordinates that have been theoretically analysed as relative clauses. We argue that at least some causal clauses are underlyingly relative clauses over situations (see Arsenijević 2021). Our claim is supported by the diachronic development of the Italian subordinator *siccome* ‘because/since’, an unverbated form morphologically composed of two items, the comparative-simulative wh-pronoun *come* ‘how’ and the demonstrative adverbial pronoun *sì* ‘so’. We demonstrate that the causal subordinator is derived from the comparative-simulative one via a three-stage diachronic change which is formally captured in terms of type of movement and null elements (Kayne 2005, Cinque 2020b). In so doing, our paper extends a relative clause analysis to causal clauses and adds a novel path to the diachronic development of causal clauses.

Keywords: relative clauses, causal clauses, comparative clauses, Italian, diachrony.

1. Introduction

A unified account of adverbial subordination and relativization has been advanced since the Seventies, according to which temporal, conditional and comparative clauses are underlyingly relative clauses (Geis 1970, Larson 1985, 1990, Donati 1997, Bhatt & Pantcheva 2006, Haegemann 2006, 2010, Arsenijević 2009, Hall & Caponigro 2010, Poletto & Sanfelici 2021). Temporal, conditional and comparative adverbial clauses have been shown (i) to involve a gap and (ii) to relate to an argument in the matrix clause, as relative clauses do, giving rise to the intersective reading illustrated in (1). Moreover, (iii) their subordinators are often morphologically identical to relativizers (Geis 1970, Larson 1990, Donati 1997, Bhatt & Pantcheva 2006, Haegemann 2006, 2010, Arsenijević 2009, Hall & Caponigro 2010).

- (1) When I meet my friends, I have fun.
 ≈ ‘In the TIME/MOMENT(S) in which I meet my friends, in SUCH TIME/MOMENT(S) I have fun’

A challenge for this view is posed by causal clauses. Causal clauses indeed lack the intersective reading available in the other adverbial clauses (Cecchetto & Donati 2012) and there often is no morphological overlap between causal subordinators and relativizers.

- (2) John took the umbrella because/since it was raining.
 ≠ ‘For the reason for which it was raining, for the same/such reason John took the umbrella’

Consequently, the literature has been hesitant to extend the relative clause analysis to causal clauses (e.g., Cecchetto & Donati 2012, but see Arsenijević 2021).

However, typological studies have demonstrated that adverbial causal clauses are semantically and morphologically linked to other adverbial clauses, e.g., temporal ones. Cause and temporal relations are often coded by means of the same morphology in various languages (Thompson, Longacre & Hwang 1985). Diachronically, causal clauses usually emerge out of purpose and temporal clauses as the result of diachronic reanalysis (Heine & Kuteva 2002: 246, 291, Cristofaro 2003: ch.6). Hence, due to this morphological overlap and semantic similarity, it is tempting to extend the same analysis advanced for temporal clauses to causal clauses as well.

This paper proposes that at least some adverbial causal clauses are relative clauses over situations, as in Arsenijević (2021). This proposal is supported by the diachrony of *siccome* ‘because’ in the history of Italian. *Siccome* is morphologically composed of two items, the comparative-simulative wh-pronoun *come* ‘how’ and the demonstrative adverbial pronoun *si* (< Lat. *sic*) ‘so’. We will show how, throughout

the history of Italian, *siccome* changes from being a similitive-comparative item in Old Italian¹ (3) to a causal subordinator in Contemporary Italian (4).

- (3) [Si-ccome lo vermine consuma il legno e
so-as DET worm consume.PRS.3 SG DET wood and
le tarme le vestimenta] così consuma la invidia il
DET moth.PL DET cloth.PL similarly consume.PRS.3SG DET envy DET
corpo de-ll' uomo
body of-DET man
'As the worm consumes the wood and the moths consume the cloths, likewise
the envy consumes the human body.' (Anonimo, *Fiore di virtù*, III; first half
14th cent.)

- (4) [Si-ccome piove], Gianni non verrà
So-as rain.PRS.3SG Gianni NEG come.FUT.3SG
'Since it rains, Gianni will not come.'

We will argue that the diachronic change *siccome* underwent is the result of the conventionalization of a pragmatic implicature (Grice 1975, Traugott 2004) and the Merge-over-Move principle proposed in van Gelderen (2004). In so doing, this paper extends the relative clause analysis to causal clauses introduced by comparative-similitive expressions. In addition, it adds a novel path in the development of causal clauses by uncovering a diachronic link between comparative and causal clauses. Indeed, while previous typological literature has reported that the use of similitive markers is usually extended to also mark temporal clauses of immediate anteriority or temporal overlap (Treis 2017: 91, 133), this paper demonstrates a grammaticalization path from similitive to causal markers.

The structure of the paper is as follows. In section 2 we briefly review the arguments in favor of a unified approach to relative clauses and some adverbial clauses. In so doing, we illustrate Cinque's (2013, 2020a,b) analysis of relative clauses and extend it to adverbial clauses. Finally, we outline Cecchetto & Donati's (2012) proposal for causal adverbial clauses, thereby highlighting the theoretical challenges for a unified treatment of causal and relative clauses. Section 3 is devoted to the semantic and syntactic properties of *siccome* 'because/since' from Old to Contemporary Italian. We show that *siccome* originates as a subordinator introducing similitive comparative clauses and eventually develops into a causal marker. After having illustrated the diachronic development of the meanings encoded by the

¹ We refer to Contemporary Italian as the standard language spoken in Italy nowadays. We follow the traditional philological literature in labeling Medieval Florentine and Tuscan "Old Italian" (Salvi and Renzi 2010). We follow the spirit of the *Grammatica dell'italiano antico* in contrasting Medieval Florentine/Tuscan and Contemporary Italian and considering them two stages of Italian (Renzi 2004; Salvi and Renzi 2010). As for the other stages of Italian, we refer to the classification proposed in the MIDIA corpus (<https://www.corpusmidia.unito.it/>). Data on Contemporary Italian are taken from our introspection as native speakers as well as from the CORIS corpus (<https://corpora.ficlit.unibo.it/TCORIS/>). For the purpose of the Italian Academy, the first author is responsible for Sections 1, 2.1, 3.2, 3.3, 4 and 5. The second author is responsible for Sections 2.2 and 3.1.

subordinator, we zoom into causal clauses introduced by *siccome*, by focusing on three aspects: the syntactic conditions in which the causal interpretation arises; the internal syntax of the clause; the external syntax of causal clauses in terms of position relative to the matrix clause. In Section 4 we illustrate our proposal according to which *siccome* causal clauses are relative clauses on the null nominal SITUATION (Arsenijević 2021). We formalize the diachronic change from Old to Contemporary Italian in terms of upward reanalysis (van Gelderen 2004, Roberts 2007). Section 5 concludes the paper, highlighting some possible open issues as well as further development.

2. Adverbial subordinate clauses: theoretical premises

2.1 Causal clauses as relative clauses

Since the '70s, various studies have claimed that a large number of subordinate clauses are derived through strategies of relativization and are therefore underlyingly relative clauses. This analysis has been put forward for complement clauses (Manzini & Savoia 2003, Aboh 2005, Caponigro & Polinsky 2008, 2011, Arsenijević 2009, Kayne 2010) and various adverbial clauses, namely locative and temporal adjunct clauses (Geis 1970, Larson 1987, Demirdache & Uribe-Etxebarria 2004, Haegeman 2010), conditional clauses (Bhatt & Pancheva 2006, Arsenijević 2009), comparative clauses (Donati 1997). We focus on adverbial clauses. The above-mentioned adverbial clauses share various properties with relative clauses. As in relative clauses, these adverbial clauses involve a gap, namely a constituent related to an argument in the matrix clause, which can be either covert or overt, namely phonologically null as in free relative clauses or lexically realized as in lexically-headed relative clauses, respectively. Temporal clauses modify a temporal argument (5a), locative clauses a spatial one (5b), comparative clauses modify a degree or a quantified argument (5c), modal clauses modify a manner argument (5d), and finally, conditional clauses modify the topic situation argument (5e). As illustrated below, these clauses display the typical interpretation characteristic of relativization, which, following Cecchetto & Donati (2012), we label *intersective reading*.

- (5) a. When Gianni arrives, Elena will be gone.
 ≈ Elena will be gone at the time at which Gianni arrives.
- b. Gianni saw Elena where he expected her the least.
 ≈ Gianni saw Elena at the place at which he expected her the least.
- c. Gianni ate more cookies than Elena.
 ≈ The quantity of cookies eaten by Gianni is greater than the quantity of cookies eaten by Elena.
- d. Gianni will ski how Elena taught him.
 ≈ Gianni will ski in the same way/manner Elena taught him.
- e. If you leave, I will be very sad.
 ≈ I will be very sad in the situations in which you will leave.

In Indo-European languages, adverbial clauses are often introduced by *wh*-items which, in most cases, are morphologically identical or similar to those found in relative clauses. To illustrate, temporal, locative, and modal clauses are introduced by the *wh*-item found in relative clauses in various languages, for instance, English and Italian: *when*, *where*, *quando*, *dove*. In comparative clauses, Italian displays the *wh*-item *che* ‘that’ or *quanto/i/e* ‘how much/many’. Finally, various Romance varieties and some English ones exhibit a *wh*-item introducing the protasis of conditional clauses (Kayne 1991, Bhatt & Pancheva 2006). Like relative clauses, adverbial clauses have the same distribution as DPs or PPs (e.g., Bresnan & Grimshaw 1978, Larson 1987, a.o). They usually yield island effects, as relative clauses do, since *wh*-movement applies (Donati 1997, Larson 1987, Caponigro 2003, Bhatt & Pancheva 2006, a.o.).

Causal clauses, however, seem to be an exception to this pattern. As noted in Caponigro (2003) and Cecchetto & Donati (2012), causal clauses exhibit two main differences that tease them apart from the above-mentioned adverbial clauses: (i) their reading; (ii) the morphology of subordinators. Causal clauses do not display the intersective reading exhibited by the adverbial clauses in (5). This was illustrated in (2). Another property highlighted in Cecchetto & Donati (2012) is the usual lack of correspondence attested in various languages between relativizers and causal subordinators. An example is provided by English in which the *wh*-item *why* cannot introduce adverbial causal clauses.²

Cecchetto & Donati (2012) account for these two peculiarities by suggesting that causal clauses do not involve relativization. The authors propose that in relative clauses, as well as in adverbial clauses like those in (5), the intersective reading arises from the presence of a trace in the TP/vP layer, and thus from the movement of the *wh*-phrase from this portion of the clause to the left periphery. For the authors, relativization involves two ingredients: the raising of the *wh*-element, which leaves a copy in the embedded clause, and the labeling of the structure by the *wh*-element itself. While the lack of correspondence between relativizers and causal subordinators is accounted for in terms of labeling, the intersective reading, which according to the authors is “the defining feature of relativization” (Cecchetto & Donati 2012: 57), is captured in terms of movement of the *wh*-item. We focus on the latter aspect. Rizzi (1990, 2001) demonstrated that *perché* ‘why’ behaves differently from the other *wh*-items. For instance, while subject inversion is obligatory with other *wh*-items in questions, like *dove* ‘where’, *come* ‘how’, *quando* ‘when’, it is not with *perché*, where the subject precedes the verb. In addition, while other *wh*-items are sensitive to the sentential negation, *perché* is not. This contrast has been captured in Rizzi (2001) by claiming that *perché* is directly merged in the left periphery, while the other *wh*-items move there, thereby triggering inversion and intervention effects.³ Cecchetto & Donati (2012) extend this analysis to adverbial causal clauses. While in comparative and temporal, conditional, locative clauses the *wh*-items move from the TP/vP layer to the left periphery, the subordinator introducing causal clauses is directly merged in the left periphery of the clause and, thus, no movement of the *wh*-item is involved. As a consequence, no intersective reading arises in causal clauses.

² Notice, however, that there are languages that allow for “why” free relative clauses (see Caponigro et al. 2021, Mantenuto & Caponigro 2021).

³ Alternatively, *why* CPs may involve a short movement of the element *why*, which moves locally in the left periphery, as argued by Shlonsky and Soare (2011). The important point is that also under such an analysis, the *wh*-item does not leave a trace within the IP/vP.

A different approach is taken by Arsenijević (2021), who argues that all adverbial subordinate clauses are derived by a generalized strategy of relativization and are therefore underlyingly relative clauses. In his terms, relativization involves a derivation in which one argument in the subordinate clause is abstracted, turning the clause into a predicate over the respective type, which combines with an argument of the same type in the matrix clause and figures as its modifier. Focusing on causal clauses, the author proposes that they modify “the situation argument in the matrix clause which is targeted by a speech act, content or attitude predicate” (Arsenijević 2021: 3). The subordinate clause is a relative clause and modifies the situation of the matrix clause. As a result, the matrix proposition is generically asserted in the domain of the restricted situation, i.e., for the situations in which the subordinate proposition obtains. To illustrate, the causal clause in (6) provides the restricted situations for the matrix proposition to be asserted.

- (6) adapted from Arsenijević (2021: 4)
 John stays late because he has a deadline.
 ≈ For the actual situation, in which John has a deadline, in the same situation he stayed late.

Since the subordinator modifies a more abstract argument, i.e., the situation in Kratzer’s (2010) terms and not the reason argument, as previously suggested (see (2)), the intersective reading, typical of relative clauses, is obtained in (6) as well. Hence, under such an approach, the relative clause analysis can be extended also to causal clauses.

We depart from Arsenijević’s proposal in claiming that the hierarchical structure plays a role in the derivation of the causality interpretation, in line with cartographic works (Haegeman 2010). Moreover, we propose that the relation involved in causation is not simply correlation as in (6). Rather, in our case-study, the similarity in manner between the events in the two clauses is enriched by the implicature that correlation between events taking place in the same manner involves a causal relation.

2.2 Causal subordinators in typology and diachrony

Causality has been claimed to be a central notion relating two propositions. Indeed, causal relations are usually encoded morphologically in many languages of the world (Kortmann 1997, Cristofaro 2003). For instance, all European languages exhibit at least one adverbial subordinator for the expression of causation. In addition, cause is also the semantic relationship which exploits the greater number of subordinating conjunctions (Kortmann 1997: 147–150).

Crosslinguistically, causal relations are often coded by means of the same morphology used in relative, purpose and temporal clauses (Thompson, Longacre & Hwang 1985). For instance, in classical Indo-European languages causal subordinators are old adverb derived from the theme of the relative, e.g., Sanskrit *yátra*, Greek *hōs*, Latin *ut*, or, more often, the causal form of the neuter singular of this pronoun, regardless of the root (**yo-*, **kwo-*, and **so-/to-*), like in Sanskrit *yád*, Avestan *yat*, Greek *hóti*, *hóte*, Latin *quod*, *quom* (Baños 2011). In Ngizim, a Chadic language, the complementizer *gáadà* can introduce purpose and causal clauses (Schuh 1972: 380). Likewise, Hutchison (1976) notices a similar relation in Kanuri, a Nilo-Saharan

language, having the morpheme *ro* expressing both purpose and reason relations. Moreover, the literature has long noticed that causal subordinators usually develop from temporal and purpose connectives as the result of diachronic reanalysis (Heine & Kuteva 2002: 246, 291; Cristofaro 2003: ch.6). Likewise, temporal and causal relations can be encoded by the same morphology as in the case of English *since*.

Diachronically, forms used to express purpose or temporal meanings may be extended to cover causal relations. For instance, in Homeric Greek, the subordinator *hōs* introduced purpose and temporal “when” clauses, while it was extended to introduce causal clauses in Classical Greek (Cristofaro 1998). Romance languages exhibit several causal subordinators derived from temporal expressions referring to a point in time after the point of reference, such as ‘after’, ‘since’, ‘already’ and even ‘when’ (in the meaning of ‘at that point’, ‘and right after that’). An example is provided by the Romance causal subordinators originated from Latin *post* ‘after’ or its comparative variant *postiu* ‘more after’:⁴ Spanish *pues (que)*, Portuguese *pois (que)*, Occitan/Catalan *pus (que)*, *puix (que)*, French *puisque*, Italian *poiché*. Another source of causal subordinators is represented by aspectual-temporal adverbs meaning ‘already’. Causal connectors of this sort are found in some Romance languages. For instance, they are found in Spanish (*ya que*), Portuguese (*já que*), Catalan and some Occitan varieties (*ja que*), Italian (*giacché*), while they are absent in French. The same grammaticalization process from temporal to causal subordinator is also attested in German *weil*.

Finally, few studies, focusing especially on European languages, report another lexical source for causal subordinators, namely modal expressions (Kortmann 1977: 195–197, Hualde & Pérez Saldanya 2019). In Romance languages, the modal subordinator originated from the Latin adverb *quomodo* ‘how, as, like’ can also introduce causal clauses. This is illustrated for instance in Spanish and Portuguese *como*, Catalan *com que*, French *comme*. The same observation holds for Basque, in which the interrogative word *nola* ‘how’ can be used to introduce subordinate clauses with causal interpretation (Hualde & Pérez Saldanya 2019). Likewise, the form etymologically related wh-item ‘how’ introduces causal clauses in Serbo-Croatian *kako* (Arsenijević 2021: 24) and in Polish *jako że* (Jędrzejowski accepted).

Grammaticalization research suggests that the changes just outlined result from the enrichment of the original meaning of the items with context-dependent pragmatic meanings that the speakers and addressees regularly associate with the item. This process is known as conventionalization of pragmatic implicature (Hopper & Traugott 2003), inference (Bybee, Perkins & Pagliuca 1994), context-induced reinterpretation (Heine, Claudi & Hünnemeyer 1991), or metonymization (Traugott & Dasher 2002). Conventionalization of implicature, the terminology adopted in this study, is conceived of as a gradual diachronic process that leads a contextual-dependent inference to be conventionalized, and thus no longer cancelable. As noted by Grice (1975) and Traugott (2004), conversational implicatures may become conventionalized. When an item or a structure used in a specific context gives rise to the same invited inference often enough, it may become a generalized invited inference, which is normally associated with the meaning of the item/structure but it can still be cancelled. These inferences may become conventionalized and the

⁴ As noted by Ernout & Thomas (1953: 350, 360-2), Latin *postquam* may exhibit both temporal and causal readings.

inference formerly associated with the item/structure becomes part of its semantics. At this point, the item/structure may be ambiguous between its original and its newly grammaticalized meanings or the original meaning may be lost. In either case, when the newly grammaticalized meaning is recovered, it cannot be cancelled. Such a process has been claimed to be the mechanism at the basis of the change from temporal-simultaneity to causal meaning (*weil*) in German (Kortmann 1997, Hopper & Traugott 2003: 90–92), as well as the change from the temporal *since* to the causal *since* in English (Kortmann 1997, Hopper & Traugott 2003: 80–81, Hetterle 2015: 254). The meaning of simultaneity has become enriched inferentially by the implicature that the simultaneous events are causally related. Likewise, the meaning of past temporality has been enriched by the implicature that sequence of events implies causality. Conventionalization of implicatures has also been invoked as a possible scenario leading from purpose to causal meaning via the implicature that the intended outcome of the purpose clause was actually achieved (Schmidtke-Bode 2009). While studies on the grammaticalization process of temporal to causal expressions are quite numerous, the diachronic path from modal to causal meanings still deserves investigation. Indeed, it is still open how the change from modal to causal expressions fit into this picture. Our paper addresses this issue, by adding a new path in the grammaticalization process of causal clauses, thus uncovering a diachronic link between simulative-comparison and causality. This diachronic change will be formally captured adopting the relative clause analysis of causal clauses.

3. Our study: the diachrony of *siccome/sì come* CPs

This section illustrates the diachrony of *siccome/sì come* CPs through the history of Italian. Section 3.1 provides an overview of the meanings encoded by *siccome/sì come* CPs. We show that the causal meaning available in Contemporary Italian arises from a simulative-comparative interpretation. These two interpretations are not uniformly distributed diachronically: comparative and causal meanings of *siccome/sì come* are indeed attested in different periods with different frequencies. In particular, three chronological periods are individuated. In Section 3.2, we describe the different syntactic, semantic, pragmatic properties exhibited by *siccome/sì come* CPs. Section 3.3 demonstrates that the causal interpretation was restricted to specific contexts in the early stages and was extended to other contexts after the grammaticalization process was completed.

To understand the development of the subordinator, we explored its diachrony through a survey of MIDIA, a corpus of about 800 written Italian texts ranging from the 13th and the first half of the 20th century. Since *siccome* is a morphologically complex form composed of the wh-pronoun *come* ‘how’ and the adverbial pronoun *sì* ‘so’, we searched for the lexical item *siccome* as well as for its non-univerbated variant *sì come*.⁵ We extracted 874 instances of *siccome* and 1865 of *sì come*, and we identified the semantic relations they expressed. 53 occurrences over a total of 2739 were not classifiable. Therefore, we plotted the results obtained from the remaining 2686 occurrences. In addition to our introspective judgments as native speakers, data on Contemporary Italian were collected by investigating the CORIS corpus as well as its

⁵ In the MIDIA corpus we searched for *come*, as lemma, preceded by the lemma *sì*.

later updates. The CORIS corpus contains circa 150 million words from written texts dated 1980-2000. Its following updates (monitor corpora) are added every three years in order to record innovations and modifications of the language. For our search, the monitor corpora cover the age ranges between 2001 and 2017. 1000 sentences containing *siccome* were analyzed.⁶

3.1 The meaning of *siccome/sì come* in diachrony

Throughout the history of Italian *siccome/sì come* expresses both complement and adverbial relations. We here focus on the latter ones and we limit our investigation on *siccome/sì come* introducing a clause, leaving aside DPs and AdjPs.⁷

When the clause is merged in an adjunct position, a temporal, comparative-simulative, and causal interpretation is available. The temporal interpretation of *siccome/sì come* is very scarcely attested throughout the history of Italian. The total number of occurrences in which *siccome/sì come* introduces a temporal CP amount to 9 instances in the entire MIDIA corpus: seven occurrences in the 14th century, three in the 15th century and one in the 18th century. In all the 9 examples, the dependent event is factual and takes place either simultaneously or immediately before the main event, as in (7).

- (7) E [si-ccome si scontraro con gli
and so-as CL.RFL meet.PST.3PL with DET
occhi] si punsono il cuore d'
eye.PL CL.RFL sting.PST.3PL DET heart of
amoroso disire
loving desire
'And as their eyes met, they stung their hearts with a loving desire [...]'
(Alberti, *Istorietta amorosa fra Leonora de' Bardi e Ippolito Bondelmonti*;
15th cent.)

Given the scarcity of attestations in which the subordinator exhibits a temporal reading, we do not further discuss these cases and we restrict our focus on the comparative-simulative and causal interpretations.

Siccome/sì come introduces a comparison in which two events or propositions are compared with respect to some manner or degrees of some properties, as in (8). Conversely, when the dependent event provides a motivation for the main event to occur, the subordinator encodes a causal relation between the dependent and the main events as in (9).

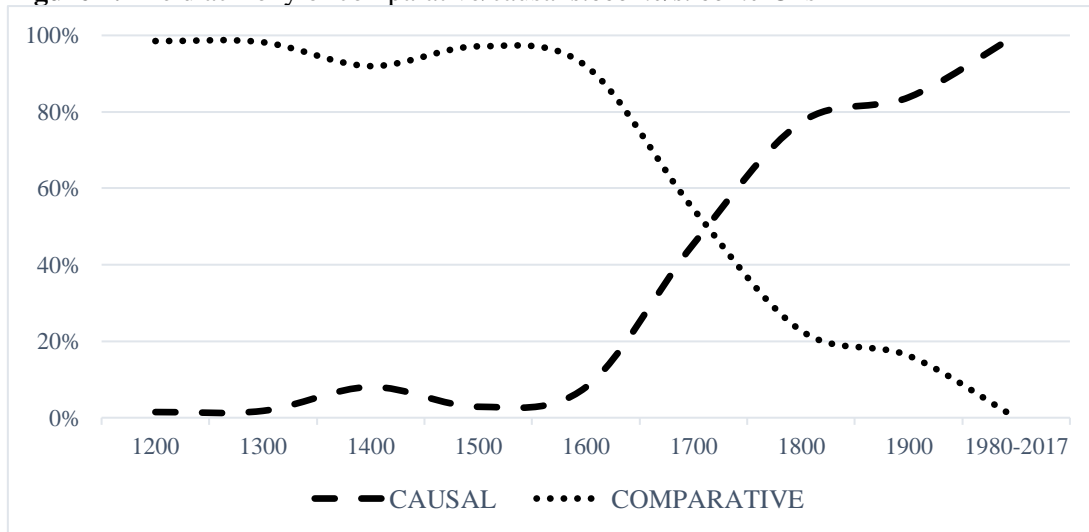
⁶ Our query consisted of the following elements: the form “siccome”, Time Slice set on “All”, Subcorpus “All”, and Concordance Option set to 1000 lines.

⁷ *Siccome/sì come* can also introduce a complement clause. This is rarely found and ranges from a maximum of 21 instances found in the 14th-century texts to a minimum of 1 occurrence in 17th and 20th century texts. An example is of complement clause introduced by *siccome/sì come* is: *ricordandomi sì come io potea morire di questa ispada* ‘remembering that I could die from this sward’ (Anonimo, *Tristano Ricciardiano*, XIII). In Contemporary Italian, this option is only available with *come*.

- (8) Veleni de la terza generatione uccidono per
 poison.PL of DET third generation kill.PRS.3PL by
 loro freddeça, [si-ccome fa l' oppio]
 their coldness so-as do.PRS.3SG DET opium
 'Third generation poisons kill by their coldness, as opium does.'
 (Gregorio d'Arezzo, *Fiori di medicina*; mid-14th cent.)
- (9) ma [si-ccome ero stanco], prima di
 but so-as be.PST.3SG tired before to
 tornare indietro, mi fermai un poco
 go.INF back CL.1SG stop.PST.1SG DET little
 per riposar-mi.
 to rest.INF-CL.1SG
 'but since I was tired, before going back, I stopped a little to rest.'
 (Fucini, *Le veglie di Neri*; 1890)

In order to investigate how the comparative and causal interpretations were distributed in the history of Italian, we calculated how many comparative and causal readings were found in the 2686 occurrences from the MIDIA corpus and in the 1000 occurrences from the CORIS corpus. Figure 1 illustrates the results.

Figure 1. The diachrony of comparative/causal *siccome/sì come* CPs



Three macro-periods can be individuated on the basis of Figure 1. (i) Stage 1: From 13th to mid-14th century, *siccome/sì come* exhibits almost exclusively a comparative-simulative meaning. (ii) Stage 2: Between mid-14th to the end of 17th century, the main value of the subordinator is still comparative, but in few occurrences a causal interpretation is attested. (iii) Stage 3: From the end of the 17th century, we witness an increase of the occurrences with a causal interpretation and a concomitant decrease of the occurrences with a comparative reading. This trend reaches a turning point during the middle of the 18th century. From this point onwards, the instances of *siccome/sì come* with a causal meaning exceed those with a comparative reading until, in the 20th century, the causal value becomes the only one attested.

Therefore, we conclude that *siccome/sì come*, originally introducing a comparison between the dependent and the main events, slowly acquired a causal reading.

3.2 Properties of comparative and causal *siccome/sì come* CPs

The question we now address is whether, in the history of Italian, comparative and causal clauses introduced by *siccome/sì come* exhibit different properties. The aim is to detect whether the two readings are restricted to specific syntactic, semantic and pragmatic conditions.

Throughout the history of Italian Causal and comparative clauses introduced by *siccome/sì come* have always differed with respect to four properties as illustrated in Table 1.

Table 1. Diachronically stable properties in comparative and causal *siccome/sì come* CPs

Properties	Comparative CPs	Causal CPs
(i) Factuality	Factual and non-factual	Only factual
(ii) Finiteness of the predicate	Finite and non-finite	Only finite
(iii) Semantic relation between the dependent and main predicates	Closely related	independent
(iv) (non)-at issue	At issue	Non at issue

While the dependent event in comparative clauses may be both factual or not (10), it is only factual in causal CPs. Likewise, while the dependent predicate may be non-finite in comparative clauses (11), it must be finite in causal CPs.⁸

- (10) a. Villani, *Nuova Cronica*, 7.25; first half 14th cent.
 e diede indulgenza e perdono, [sì come
 an give.PST.3SG indulgence and absolution so as
 d
 andasse oltremare], a chi fosse contro
 go.SBJV.3SG overseas to whom be.SBJV.3SG against
 a-l detto Federigo;
 to-DET mentioned Federigo
 ‘And he granted indulgence and absolution to those who were against
 the above-mentioned Federigo, as if they were going overseas.’
- b. Grossi, *Ildegonda*, III, XLVI; 1820
 e [si-come un serpente mortifero toccasse]
 an so-as DET snake deadly touch.SBJV.3SG
 d
 toccò la ciocca de-lle amate chiome
 touch.PST.3S DET lock of-DET beloved hair

⁸ The comparative hypothetical clause introduced by *siccome/sì come* can be coordinated with the comparative marker followed by *se*, as in [...] *così come se nella matricola della detta arte fosseno scritti e siccome fosseno artefici dell’arte predette* [...] ‘[...] as if they were enrolled in the above-mentioned art and as if they were authors of the above-mentioned art [...]’ (*Statuti delle Arti dei fornai e dei vinattieri di Firenze*, 1364).

‘And she touched the lock of the beloved hair as if she touched a deadly snake.’

- (11) a. Cecco D’Ascoli, *L’acerba*, 1; ante 1327
 Ciascuna intende sol Dio contemplando
 each understand.PRS.3SG only God contemplating
 tutte le cose manifeste e certe [sì come
 all DET things manifest and sure so as
 nui ne-llo specchio guardando]
 we in-DET mirror looking
 ‘By contemplating only God, everyone understands all the manifest and sure things as we (do) looking in the mirror.’
- b. Bartolomeo da San Concordio, *Il Catilinario*, XXIII; first half 14th cent.
 E intrassono a Cicerone [si-ccome a
 an enter.SBJV.3PL to Cicero so-as to
 d
 salutar-lo]
 greet.INF-CL.ACC.3SG.M
 ‘[They ordered that...] and [that] they should approach Cicero as they were greeting him.’

A comparative-similative interpretation always arises when the predicate of the subordinate clause is identical, semantically similar or closely related to the predicate of the matrix clause (12). Likewise, it is strongly favored when the dependent predicate is a generic, habitual verb of the type *solere/usare* ‘to be used’ (13).

- (12) a. Collenuccio Pandolfo, *Filotimo*; 1497
 [sì come non posso far dotto l’
 so as NEG can.PRS.1SG make.INF learned DET
 ignorante], così né il brutto bello
 ignorant so NEG DET ugly beautiful
 né il pusillanimo terribile posso
 NEG DET coward terrible can.PRS.1SG
 fare
 make.INF
 ‘As I cannot make the ignorant person learned, so I cannot make the ugly person beautiful nor the pusillanimous terrible.’
- b. *Ordinamenti di Giustizia del Popolo e Comune di Firenze*, IV; 1292-1324
 e con loro dimori e manuchi
 and with them live.SBJV.PRS.3SG and eat.SBJV.PRS.3SG
 e dormia [sì come i Priori
 and sleep.SBJV.PRS.3SG so as DET Prior.PL
 dimorano e fanno];
 live.PRS.3PL and do.PRS.3PL
 ‘And he lives and eats and sleeps with them, so as the Priors live and do.’

c. Gozzano, *I colloqui*, p.71; 1911

O	mio	carino	tu	mi	piaci
Oh	my	darling	you	CL.1SG	like.PRS.2SG
[si-ccome		piace		a-l	mar
so-as		like.PRS.3SG		to-DET	sea
una	sirena]				
DET	siren				

‘Oh, my beloved one, you please me so, as the sirens please the sea...’

(13) a. Verri, *Le avventure di Saffo*, book 1, ch. 4; 1782

Saffo	era	accorsa	quel	giorno,
Sappho	be.PST.3SG	run	that	day
[si-ccome	soleva	a-lla	festività]	
so-as	use_to.PST.3SG	to-DET	festival	

‘Sappho had run to the festival that day, as she was used to do.’

b. Leopardi, *Storia del genere umano*; 1827

laddove	insino	a-l	diluvio	gli	uomini	[...]
where	until	to-DET	Flood	DET	men	
si	erano	pasciuti	de-lle	erbe	e	de-lle
CL.RFL	be.PST.3PL	fed	of-DET	herb.PL	and	of-DET
frutta	che	la	terra	e	gli	arbori
fruit.PL	that.REL	DET	earth	and	DET	tree.PL
somministravano	loro	spontaneamente	[...]	[si-ccome		
provide.PST.3PL	them	spontaneously		so-as		
usano	di	sostentar-si	anche	oggi	alcuni	
use.PRS.3PL	to	sustain.INF-CL.RFL	also	nowadays	some	
popoli,	e	particolarmente	quelli	di	California.]	
people	and	particularly	those	of	California	

‘[...] where until the Flood men [...] had fed themselves with the herbs and fruits that the earth and trees spontaneously provided to them, as even nowadays some peoples, and particularly those of California, use to sustain themselves.’

Conversely, when the predicate of the dependent event is not semantically close to the predicate of the main event, a causal interpretation is strongly favored (14).

(14) a. Tozzi, *Con gli occhi chiusi*; 1913

e,	[si-ccome	dovunque	era	trattato	così],
and	so-as	everywhere	be.PST.3SG	treated	so
non	se	la	prendeva.		
NEG	CL.3SG	CL.ACC.F	take.PST.3SG		

‘and, since he was treated like this everywhere, he did not resent it.’

b. Foscolo, *Viaggio sentimentale di Yorick*; VII; 1804-1806

[Si-ccome	un	Inglese	non	viaggia	per
So-as	DET	Englishman	NEG	travel.PRS.3SG	to

vedere	Inglesì],	io	m'	avviai	a-lla
see.INF	Englishmen	I	CL.1SG	set_out.PST.1SG	to-DET
mia	camera.				
my	room				

‘And since an Englishman does not travel to see Englishmen, I set out for my room.’

Causal and comparative clauses also differ in terms of (non)-at-issueness: the former being non-at issue, while the latter can be at issue. In Contemporary Italian, causal clauses introduced by *siccome/sì come* cannot be (i) fragment answers to ‘why/which reason’ questions and cannot be (ii) in the scope of focus particles or negation (Salvi & Renzi 2001, Frenguelli 2002, Dardano 2020). In these respects, they differ from causal clauses introduced by *perché* ‘because’ (15a-17a). Likewise, *siccome/sì come* CPs also differ from comparative clauses introduced by *come* ‘how’, which can be fragment answers to ‘how’ questions (17b) and can be in the scope of focus particles and negation (18b-19b) (Salvi & Renzi 2001, Dardano 2020).⁹

- (15) a. Per quale motivo sei arrivato tardi?
 Perché/*siccome ero in palestra
 ‘Why did you arrive late?
 Because I was at the gym.’
- b. Come hai cucinato il pollo?
 Come mi aveva consigliato mia mamma.
 ‘How did you cook the chicken?
 As my mum suggested me.’
- (16) a. Sono venuto a cena da te non perché/*siccome ne avevo voglia, (ma perché mi hai invitato).
 ‘I came for dinner at your place not because I wanted to (but because you invited me)’
- b. Ho cucinato il pollo non come mi aveva insegnato mia mamma (ma come diceva la ricetta)
 ‘I cooked the chicken not as my mum told me (but as the receipt suggested)
- (17) a. Sono venuto a cena da te solo perché/*siccome hai insistito tanto.
 ‘I came for dinner at your place only because you insisted so much.’

⁹ A reviewer correctly noticed that, to establish the at-issueness of causal *siccome* clauses, their use with the negation or focus marker has been contrasted with *perché* and *come* clauses. S/he suggested to add a comparison with comparative-simulative *siccome* clauses, because it may be something about the conjunction *siccome* or the general underlying structure that is responsible for the effect. Although we agree with the reviewer, we cannot pursue this option, since in Contemporary Italian the comparative-simulative *siccome* is not used anymore. A possible implementation may be to test the (non)at-issue status of the form *così come* ‘so as/how’ in Contemporary Italian. (17b) can include the adverb *così* and the sentence would still be in the scope of the focus particle. As for the previous stages of Italian, the comparison is illustrated in (18).

- b. Ho cucinato il pollo solo come mi aveva insegnato mia mamma.
‘I cooked the chicken only as my mum told me.’

We searched the MIDIA corpus for the occurrence of *siccome/sì come* preceded by negation and focus particles: precisely, by the lemma *non* ‘not’ and *solo/soltanto/solamente* ‘only’. The search returned zero occurrences for causal *siccome/sì come*. The only instances in which the element was part of a focalization structure involved *siccome/sì come* as a comparative subordinator.¹⁰

- (18) *Ordinamenti provvisioni e riformagioni del Comune di Firenze; 1355-1357*
 Li ufficiali de-lle castella de-l detto Comune
 DET officer.PL of-DET castle.PL of-DET mentioned Commune
 non possano per alcuno modo spendere o
 NEG can.SBJV.3PL for any way spend.INF or
 fare spendere o diliberare che si
 make.INF spend.INF or approve.INF that CL
 spenda per inanzi, o che si dea
 spend.SBJV.3SG for onwards or that CL give.SBJV.3SG
 o che si paghi, alcuna cosa de-lla pecunia
 or that CL pay.SBJV.3SG any thing of-DET money
 de-l detto Comune se non [sì come si
 of-DET mentioned Commune if NEG so as CL
 diliberrae una volta o più] [...]
 approve.FUT.3SG one time or more
 ‘The officers of the castles of the mentioned Commune cannot in any way
 spend or cause to be spent or approve that anything of the money of the
 mentioned Commune be spent henceforth, or given or paid, except as it
 shall be approved once or more [...].’

Although the very scant number of attestations in the MIDIA corpus related to *siccome/sì come* CPs should be treated with caution, on the basis of these data, we conclude that the content of causal *siccome/sì come* CPs is not at issue, since non-at-issue content cannot be focalized (at least, the entire content, Simons et al. 2016), while it can be at issue in *siccome/sì come* comparative CPs as it can be focalized.

In addition to the above-mentioned four properties (see Table 1), causal and comparative clauses also differ with respect to other three properties, which, differently from the former ones, are subject to a diachronic change: (v) sharing of the event participants, (vi) temporal relation between the dependent and the main event, and (vii) positioning of the subordinate clause relative to the matrix one.

While in comparative clauses the predicates of the dependent and main events are usually semantically related one another, participants are not necessarily shared between the two events (see example (14)). In contrast, the occurrences of causal

¹⁰ Likewise, both negation and focus particles could precede comparative clauses introduced by *come* and causal clauses introduced by *perché*: in the MIDIA corpus we found in 94 and 151 instances, respectively.

clauses extracted from the MIDIA corpus show that in the first and second stage (from 1200 to the end of 1600), the dependent and the main event almost always share their participants, namely the agent/theme or the patient. In particular, from a syntactic point of view, the subject or the direct object of the causal clause is co-referential to the subject or direct object of the matrix clause, as it is shown in (19).

(19) a. Arrigo Simintendi da Prato, *Volgarizzamento delle Metamorfosi*; first half 14th cent.

la	saetta	[...]	[sì	come	egli
DET	arrow		so	as	they
erano		congiunti],	passò	l'	uno
be.PST.3PL		joined	pass.PST.3SG	DET	one
e	l'	altro	a	un'	otta.
and	DET	other	to	one	time

‘Since they were joined together, the arrow [...] pierced them both at once’.

b. Bartolomeo da San Concordio, *Il Catilinario*, XXIII; first half 14th cent.

Poi	che	Tullio	si	pose	a
After	that	Tullius	CL.RFL	put.PST.3SG	to
sedere,	Catilina	[si-ccome	era	apparecchiato	ad
sit.INF	Catiline	so-as	be.PST.3SG	prepared	to
infignere	tutte	cose,]	con	faccia	chinata
fake.INF	all	thing.PL	with	face	bowed
domandò	a’	Padri	che	egli	non
ask.PST.3SG	to	Father.PL	that	they	NEG
credessono	mattamente	niuna	cosa	di	lui,
believe.SBJV.3PL	foolishly	any	thing	of	him

‘Then, when Tullius sat down, Catiline, since he was set to fake everything, with bowed face, asked the Fathers to not foolishly believe anything about him, [...]’

However, from the mid-18th century, many instances do not involve sharing of participants, as it is illustrated in (20).

(20) Buzzati, *Il deserto dei Tartari*, ch.19; 1945

[Si-ccome	Francesco	non	arrivava],	Drogo
So-as	Francesco	NEG	arrive.PST.3SG	Drogo
e Maria	si	salutarono	con	esagerata
and Maria	CL.RFL	greet.PST.3PL	with	exaggerated

cordialità
cordiality

‘Since Francesco did not arrive, Drogo and Maria greeted each other with exaggerated cordiality [...]’

Concomitantly, non-referential subjects start to be found in causal CPs, a configuration which was not attested before the third stage.

- (21) Faldella Giovanni, *Le figurine*; 1875
 Tonia, [si-ccome domani è festa] mi
 Tonia so-as tomorrow be.PRS.3SG holiday CL.1SG.DAT
 piacerebbe che faceste sentire a-i vostri
 like.COND.3SG that make.SBJV.2PL taste.INF to.DET your
 forestieri un cappone nero, che dicono
 guest.PL DET capon black which say.PRS.3PL
 abbia la ciccia più saporita.
 have.SBJV.3SG DET meat more tasty
 ‘Tonia, since tomorrow is a holiday, I would like you to make your guests
 taste a black capon, which they say has the tastiest meat.’

A change occurred in the mid-18th century with respect to the temporal relation between the causal and the main events. Till stage 2, a causal interpretation of *siccome/sì come* was possible only when the dependent event was simultaneous to or immediately preceded the main event (see ex. (19)). Conversely, in all stages, in comparative clauses the dependent and the main event could be temporally independent (22).

- (22) a. Statuto degli oliandoli di Firenze; 1310-1313
 E passato il termine, decidino e
 and passed DET deadline decide.SBJV.3PL and
 sentenzino la questione [sì come vedranno che
 judge.SBJV.3PL DET matter so as see.FUT.3PL that
 sia giusto]
 be.SBJV.3SG right
 ‘And when the deadline is over, they decide and judge the matter as they
 will see that it is right.’
- b. Muratori, *Della perfetta poesia italiana*, 3.1; 1706
 Io nulladimeno continuerò a chiamar-la
 I nevertheless continue.FUT.1SG to call.INF-CL3SG
 poesia [si-ccome ho fatto fin-qui]
 poetry so-as have.PRS.1SG done up-here
 ‘I nevertheless will continue to call it poetry, as I have done so far’

Temporal simultaneity or immediate precedence holds as a condition for the causal reading to arise until about the mid-18th century. From then onwards, *siccome/sì come* begins to receive a causal interpretation even when the dependent and the main event are temporally independent (23).

- (23) Garibaldi, *Lettere a Speranza von Schwartz*; 1858
 [Si-ccome io dovrò navigare ancora],
 So-as I have_to.FUT.1SG sail.INF again
 progetto di dar-vi l’incarico
 plan.PRS.1SG of give.INF-CL.2PL.DAT DET responsibility
 de-lla mia figlia.
 of-DET my daughter

‘Since I will have to sail again, I plan to give you the responsibility of my daughter.’

The last property that differentiates causal and comparative *siccome/sì come* CPs regards their position relative to the host clause. We took the position of the main predicate as the benchmark to establish the position of the subordinate clause. Hence, adverbial clauses could be found to the left or to the right of the host clause.

Figure 2. The position of comparative/causal *siccome/sì come* CPs relative to the host clause

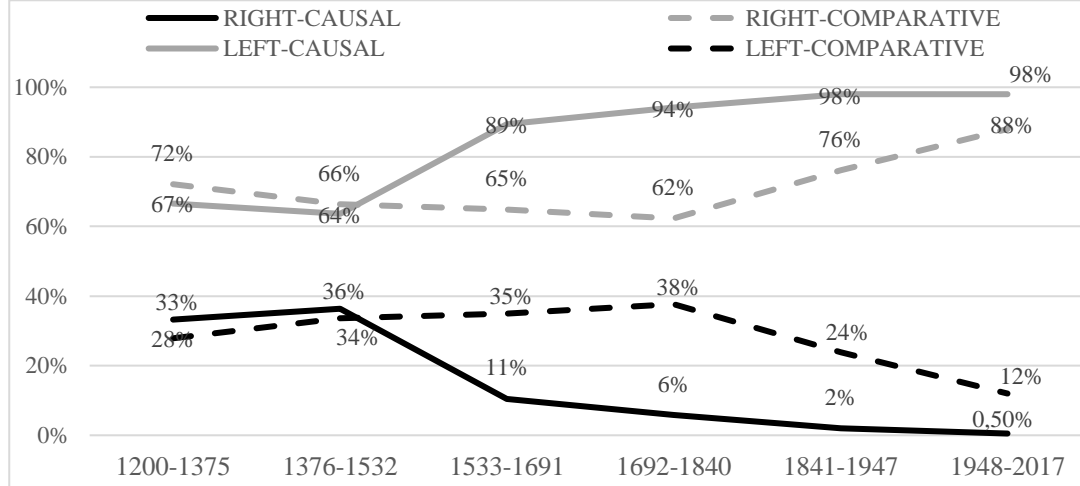


Figure 2 shows that, overall, comparative CPs tend to be found to the right of the host clause, while causal CPs tend to be placed to its left. Interestingly, the right position of causal CPs is decreasing significantly from 1533-1691 to Contemporary Italian, when this option is almost absent. Conversely, comparative CPs are quite consistently found to the right of the host clause from 1841-1947. Hence, we can conclude that from 1533-1691 *siccome/sì come* CPs are differentiated in terms of position relative to the host clause, with causal CPs occurring to the left.

3.3 Interim conclusion

Section 3.1. showed that the diachrony of causal *siccome/sì come* CPs can be divided in three macro-periods. In Stage 1, *siccome/sì come* almost exclusively encodes a comparative meaning. In Stage 2 the subordinator exhibits mainly a comparative reading but a causal interpretation is also attested. Finally, the causal interpretation increases in Stage 3 and becomes the exclusive reading available in Contemporary Italian, while the comparative interpretation decreases and is eventually lost.

Up to the mid-18th century, a causal interpretation arises when (i) the event is factual, (ii) the CP is finite, (iii) the dependent and the main predicates are not semantically related, (iv) the content of the subordinate clause is non-at-issue, (v) a relation of simultaneity/immediate anteriority and (vi) sharing of participants between the dependent and the main event are respected, (vii) the subordinate clause is to the left of the main clause. Notice, however, that, in these contexts, a comparative interpretation of *siccome/sì come* is not excluded. Interestingly, when all these conditions are respected, a reading ambiguity can emerge and *siccome/sì come* can

receive both a comparative or a causal interpretation as illustrated in (24), in which the dependent event provides either the manner in which the matrix event takes place or the reason why matrix event occurs.

- (24) Vincenzo da Filicaia, *Lettere inedite a Lorenzo Magalotti*; 17th-18th cent.
 [si-come avete guarito lui de-l male
 so-as have.PRS.2SG cured him of.DET illness
 de-lla lonzeria], così dovete ora guarire
 of-DET lonzeria so must.PRS.2PL now cure.INF
 me [...]
 I.acc
 ‘so as/since you cured him from the illness of the lonzeria, so you must now cure me [...]

From the mid-18th century, the temporal contiguity between the dependent and the main events is not a necessary condition anymore, the dependent event does not always share its participants with the main event, and causal *siccome/sì come* CPs almost exclusively precede the host clause.

We can conclude that from the mid-18th century, the grammaticalization process of *siccome/sì come* is completed: the conditions licensing a causal interpretation are eventually lost.¹¹

4. Proposal

In this section we propose that causal clauses are relative clauses and formalize the diachronic change illustrated in Section 3. In so doing, we extend the proposal advanced for temporal and comparative adverbial clauses to causal clauses introduced by *siccome/sì come*. This extension is motivated by the diachronic development we documented in the previous Sections and by the morphological form of the subordinator, which clearly contains the wh-pronoun *come* ‘how’. Section 4.1 illustrates the theoretical assumptions on the syntax of relative clauses and their extension to causal clauses. Section 4.2 formalizes the diachronic change in the syntax of *siccome/sì come* CPs.

4.1. The syntax of relative clauses

As in the cartographic literature, our proposal incorporates two fundamental aspects: (a) the syntactic representation is “bare”, i.e., no bar level distinctions are expressed, as in Chomsky (1995: ch.4); (b) the syntactic representation obeys antisymmetry (Cinque 2013: ch.2). As in Cinque’s works, our analysis builds on Kayne’s version of c-command according to which specifiers are adjuncts and an XP in Spec,ZP can c-

¹¹ In the same period, causal and comparative relations become differentiated in writing. Whereas in the first and second period, *siccome/sì come* were interchangeably used to cover both comparative and causal relations, from the mid-18th century, *sì come* was only attested with a comparative meaning and ceased to encode a causal relation. The causal meaning was, and still is, expressed only by the unverbated form *siccome*. We leave an investigation of the difference in writing conventions (and their plausible morphological reflex) to future research.

command out of the ZP (Kayne 1994: 16, 25-26): “X c-commands Y iff X and Y are categories, and X excludes Y and every category that dominates X dominates Y” (p. 16). Although specifiers are adjuncts, for ease of exposure we continue using the label “specifier”, Spec,CP, Spec,FP, and Spec,DP to refer to an XP merged as an adjunct respectively to CP, FP, and DP.

The derivation of free RCs adopted is the one proposed in Cinque (2013, 2020b), and refined in Sanfelici (2023), which include the following aspects. We walk the reader through each step, focusing on those aspects which are relevant for *siccome/sì come* CPs.

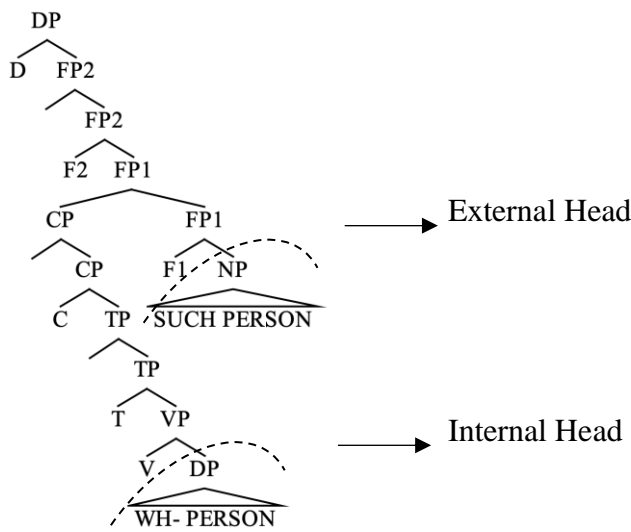
(i) Free and restrictive RCs are clauses embedded under a DP/PP/AdvP. We illustrate the derivation with RCs embedded under DPs. RCs are merged as CPs in the specifier of a prenominal functional projection FP1, above the projections which host attributive adjectives and numerals and below the projections hosting strong determiners (Kayne 1994, Cinque 2013: 172, 197).

(ii) RCs involve two non-distinct nominal elements (Hulsey & Sauerland 2006, Cinque 2013, 2020a,b), one merged inside the RC and the other merged outside the RC in the nominal spine, which is modified by the RC. Adopting Cinque’s terminology, we label the former “internal Head” and the latter “external Head”, thereby using the term Head with capital letter when we refer to the nominal phrase that the RC modifies and the one that is relativized.

(iii) The external Head in free RCs is a classifier-like element of the type PERSON, THING, PLACE, TIME, MANNER, DEGREE, etc., which is the smallest component of a nominal expression (Kayne 2005, Cinque 2020a,b). For ease of exposure, we label it NP. The external Head is modified by a modifier of the sort SUCH, which can be lexically realized in some languages. In Italian, the external Head is usually modified by Italian demonstratives, giving rise to the so-called light-headed relative clauses (Benincà 2010).

(iv) Since the internal Head is an argument of the RC-predicate and a nominal expression is an argument only if it is introduced by a category D (Szabolcsi 1987, Caponigro 2004, Longobardi 2008), the internal Head is a DP, more specifically an indefinite DP (Bianchi 1999, Cinque 2013, Poletto & Sanfelici 2018). This is captured in cartography by proposing an articulated structure as in (25) where the wh-element takes as complement an NP non-distinct from the external NP.

(25)

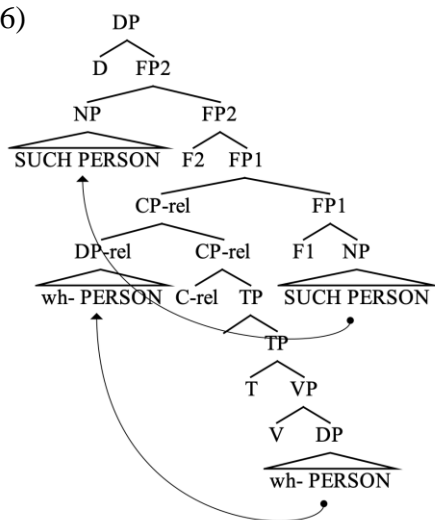


(v) The C^0 head is specified for a probing feature [$*Rel*$] and finds its goal in the internal Head, which has the feature [Rel]. The internal Head enters an Agree relation with C^0 and adjoins to CP. We follow Rizzi (2004) in proposing that the feature [Rel] is a criterial feature. After the internal Head moves to Spec,CP, a criterial configuration is created which involves: DP-relative, CP, C^0 . As in Rizzi (2015), the head and the specifiers involved in a criterial configuration agree for the criterial feature, which is shared onto their labels.

(vi) RCs can be derived via raising or matching (see Cinque 2020b). In the former case, the external Head remains in situ, while in the latter, the external Head raises to Spec,FP₂ (Cinque 2020b a.o.).

We exemplify the points (v) and (vi) in the tree (26). We illustrate only the case in which the external Head raises to Spec,FP₂.

(26)



With these premises, we turn to comparative and causal clauses. Following Kayne (2005) and Cinque (2020a,b), we propose that, whereas in comparative clauses the internal Head consists of the *wh*-item paired to a null nominal MANNER/EXTENT, in causal clauses, it is paired to a null nominal SITUATION. In so doing, we implement Arsenijević's (2021) proposal for causal clauses in our cartographic derivation.

On the basis of its etymology clearly connected to definiteness, we take the demonstrative *sì* to be the modifier of the external Head, thereby following Cinque's proposal for SUCH. Since *sì* is the modifier of the external Head and precedes the *wh*-pronoun *come*, we follow Cinque's (2020a,b) analysis and propose that the external Head moves to Spec,FP₂.

4.2. The syntax of *siccome/sì come* CPs in diachrony

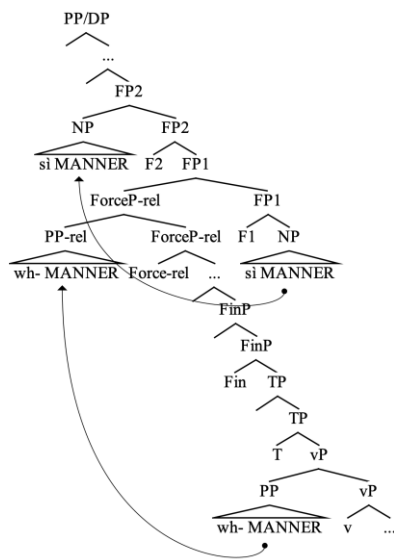
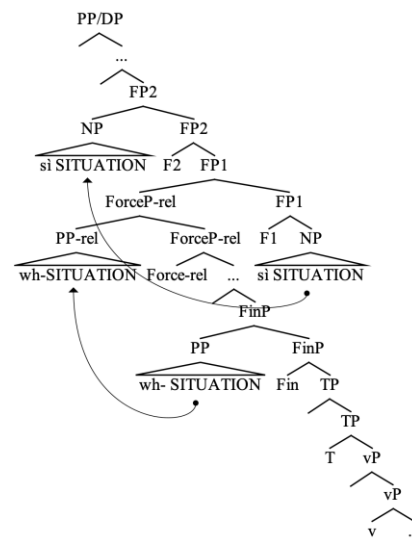
Through the diachrony of the lexical item *siccome/sì come* (Section 3), we showed that the causal reading of *siccome/sì come* arose from a comparative-similative interpretation. In addition, we demonstrated that the semantic change from a comparative to a causal marker occurred in specific contexts: (a) when the clause was a finite CP in an adjunct position, (b) the dependent event was factual, (c) temporally contiguous to the main event, (d) when the dependent event shared its participants with the main event and (e) mainly when the clause was to the left of the matrix CP. In these contexts, *siccome/sì come* could introduce both comparative and causal clauses. From the mid-18th century, conditions (c-d) were not respected and were eventually lost. Conversely, the position of causal CPs becomes fixed, preceding the main CP.

We claim that the diachronic extension of the meanings conveyed by *siccome/sì come* depends on two properties: (a) the type of null classifier paired with the *wh*-item; (b) the movement of the *wh*-phrase.

On the basis of Kayne's (2005) null classifier-like elements, the diachronic extension of the meanings conveyed by *siccome/sì come* can be phrased in terms of a change in the types of classifiers with which the *wh*-determiner can be paired. The extension is restricted to the specific contexts discussed in Section 3.3, which ends with *siccome/sì come* paired to two different null nominals: MANNER/EXTENT in the case of comparative clauses and SITUATION in the case of causal clauses.

Causal and comparative clauses involve two different syntactic derivations. The type of null classifiers determines whether the *wh*-phrase moves to the COMP domain from the vP/TP layer, as in the case of comparative *siccome/sì come*, or whether it is already merged in the CP and moves to a higher CP position, as in the case of the causal *siccome/sì come*. We follow Cinque (1999) in claiming that AdvPs and PPs have a fixed position within the clausal spine and extend this analysis to semantically-related CPs. Hence, we assume a unified merge position for manner adverbs and comparative CPs as well as for situation adverbials and causal clauses.

The final landing site of the *wh*-phrases in relative clauses is Spec,ForceP (Rizzi & Bocci 2017). In comparative clauses, the *wh*-phrase moves from a specifier position within the vP layer –the position where manner adjuncts are merged (Cinque 1999) – to Spec,ForceP. In causal clauses, the *wh*-phrase moves from a specifier position within the CP –the position where situation and speech acts adjuncts are merged (Cinque 1999)– to Spec,ForceP. We illustrate the different derivations in (27): comparative in (27a) and causal clauses in (27b).

(27) a. Comparative *siccome/sì come* CPsb. Causal *siccome/sì come* CPs

Our analysis captures the differences noted by Cecchetto & Donati (2012) between comparative and causal clauses and maintains their general proposal according to which the *wh-* phrase in comparative CPs moves from a position within the TP/vP layer to the left periphery, whereas it is externally merged in the COMP domain in causal clauses (see also Rizzi 2001).

As shown in Section 3.2, in the second stage various occurrences were ambiguous between a comparative and causal interpretation: the clause introduced by *siccome/sì come* provided the manner but also entailed the cause for the realization of the main event. The ambiguity arose in specific syntactic contexts: when the dependent event was (i) factual, (ii) temporally simultaneous or preceding the main event, (iii) with event-participants shared, (iv) when the subordinate clause was to the left of the main clause, (v) when the subordinate clause was not focalized. Conversely, from the third stage, this ambiguity possibly disappeared, as in the occurrences with meteorological predicates.

We capture this change by proposing that the original ambiguity results from an invited and then generalized pragmatic implicature which undergoes conventionalization in the history of Italian. According to Grice (1975) and Traugott (2004), when an item or a structure used in a specific context gives rise to the same invited and then generalized inference often enough, this inference may become conventionalized and the inference formerly associated with the item/structure becomes part of its semantics. At this point, the item/structure is ambiguous between its original and its newly grammaticalized meanings or the original meaning may be lost. The grammaticalization of causality from the similitive-comparison is formally captured by proposing a three-stage path, illustrated in (28).

(28) *Diachronic change of siccome in Italian***Stage I**

wh-MANNER/EXTENT
movement from vP/TP
to CP

Stage II

wh-MANNER/EXTENT
movement from vP/TP
to CP
pragmatic inference of
causality (in specific
syntactic contexts)

Stage III

wh-SITUATION
external merge in
CP
polarization of
morphological
forms

According to (28), in the first stage, only a similitive-comparative meaning is associated to *siccome/sì come*. The comparative wh-phrase which is paired to the null-classifier MANNER/EXTENT moves from vP/TP to the left periphery. Indeed, our data showed that between 1200 and 1350 circa, *siccome/sì come* almost exclusively introduced a comparative CP.

In the second stage, when the syntactic conditions were met, a pragmatic inference arose: the comparison between the manners in which the dependent and main event occurred sharing participants and in a temporal sequence such that the dependent event precedes the main event could be inferred to be a comparison between situations causally linked. Although the wh-determiner is paired to the null classifier MANNER/EXTENT, a causal relation arose as a pragmatic inference: the meaning of similarity in the manner/extent in which the events take place has become enriched inferentially by the implicature that correlation between similar manners/extents involves a causal relation. We propose that the implicature is computed in the derived position of the wh-phrase, namely in Spec,ForceP. As in Sportiche's (2014) analysis of RCs, the wh-phrase could be either reconstructed in its original position, where, in our case, it expresses a manner relation, but also in its derived position, where it entails a comparison over situations. Interestingly, our formalization captures the reading ambiguity we found in many occurrences from the second period, namely between 1400 to 1700 circa. When the event was factual, the subordinate was finite, the dependent event was temporally simultaneous or immediately precedes the main event, the event-participants were shared between the subordinate and the main clause, the subordinate clause was non-at-issue, not focalized and was to the left of the main clause, a pragmatic inference of causality arises. The temporal coincidence or similarity, the sharing of the event-participants, the position of the clause to the left, where backgrounded information is usually placed, favored the invited and then generalized pragmatic inference that two events which are similar in the manner, temporally related, affecting the same participants may be inferred to be causally connected.¹² These contexts, in which a causal interpretation could arise, do not

¹² A reviewer was very skeptical about this proposal. S/he criticized the addition of an implicature that becomes conventionalized and suggested to pursue an approach exclusively based on lexical meaning shift: "what about assuming that the grammar already has the silent head SITUATION for independent reasons [...] and over time "siccome" starts pairing up with SITUATION too, rather than just MANNER/EXTENT". As a matter of fact, our proposal contains this change: a lexical shift, which then correlates with a different derivation, is indeed proposed at Stage 3. However, an approach based exclusively on lexical meaning shift would not account for the change *per se*. More precisely, it cannot account for the fact that a causal interpretation could arise only when specific conditions were met and many instances were

instantiate independent properties of causal clauses. Indeed, as Cristofaro (2003) noted, causal clauses are temporally independent and do not impose any predetermination on the event-participants. Rather, these properties are felicitous conditions for the pragmatic inference to arise.

Around mid-18th century, the inference Manners>Situations becomes conventionalized. The conventionalization has the syntactic reflex that the *wh*-determiner is now paired with the classifier SITUATION. The conditions licensing the pragmatic inference of comparisons between situations causally connected become relaxed and are eventually lost. Thus, at stage 3, two derivations distinguish the comparative and causal adverbial clauses. In the former, the *wh*-phrase moves from the *wh*-phrase *vP/TP* to the left periphery. In the latter, the *wh*-phrase is externally merged in the left periphery. From around 1750, indeed, temporal coincidence or similarity as well as sharing of event-participants are not instantiated in many occurrences. The position of causal CPs is robustly to the left of the main clause in almost all the occurrences.

In conclusion, from a derivation in which *siccome/sì come* moves to the left periphery and the causal relation results from a pragmatic inference, Italian slowly develops a derivation with *siccome* paired to the null classifier SITUATION, which is exclusively externally merged and encodes causality. This diachronic change can thus be viewed as an instance of the Merge-over-Move principle proposed in van Gelderen (2004).¹³

Our analysis makes an interesting prediction regarding the positioning of the subordinate clause relative to the host clause. Since causal clauses modify a situation argument, they are assumed to be merged in the COMP domain, according to the cartographic approach. Conversely, since comparative clauses modify a manner argument, they are merged in the *vP* layer.

While for causal clauses their position to the left of the main clause may be the basic word order of merge, the positioning of comparative CPs to the left of the host clause is derived via topicalization or focalization of the comparative CP to the COMP domain (see also Valmala 2009). One possibility is to move the comparative clause via clitic-left dislocation. In this case, a resumptive pronoun may appear in the host clause as illustrated in (29).

ambiguous between a comparative and a causal interpretation in Stage 2 but not in Stage 3. Hence, although admittedly less elegant, we maintain our proposal.

¹³ Notice, however, that the status of Merge-over-Move has become quite problematic in most recent minimalist theories. For instance, Chomsky (2019: UCLA lectures) argues that, when possible, Move (Internal Merge) is favored as it requires investigating a smaller domain than External Merge. We thank an anonymous reviewer for having pointed this out. Since many diachronic changes have been captured in terms of the Merge-over-Move economy principle, the consequences of these recent proposals for diachronic syntactic phenomena should be properly and deeply considered in another paper.

- (29) a. Collenuccio Pandolfo, *Filotimo*; 1497
 [...] [sì come il capo ne le intelligenze
 so as DET head in DET intelligence.PL
 mistiche e sacre la cognizione e vita
 mystical and sacred DET cognition and life
 significa, e li piedi li effetti de l'
 signify.PRS.3S and DET foot.PL DET effect.PL of DET
 G
 animo], così le mani le operazioni umane
 soul so DET hand.PL DET action.PL human
 significano;
 signify.PRS.3PL
 'As the head in mystical and sacred intelligences signifies cognition
 and life, and the feet the effects of the soul, so the hands signify human
 operations.'
- b. Einaudi Luigi, *La terra e l'imposta*, 1.2; 1942
 [Si-ccome ne-l ricavare la rendita deve
 So-as in-DET derive.INF DET income must.PRS.3SG
 considerarsi ogni sorta di frutto], così
 consider.INF-CL every sort of profit so
 nelle deduzioni non deve lasciar-se-ne alcuna.
 in-DET deduction.PL NEG must.PRS.3SG leave-CL-CL any
 'As in calculating the income all sorts of profits must be considered,
 so in deductions none must be left behind.'

Although a full discussion on resumption is outside the scope of this paper, we tested a correlation. If causal and comparative clauses have the same syntax in Stage 2 as we proposed, they are both merged to the right of the host clause. Hence, the left-positioning of either comparative or causal CPs should involve a similar amount of resumption in both comparative and causal CPs. Conversely, in Stage 3 causal CPs are merged in the CP and, thus, precede the host clause. Hence, we expect the proportion of resumption in causal and comparative CPs to differ: more resumptives are expected in comparative than in causal CPs. The prediction is borne out. We looked at those occurrences in which both causal and comparative clauses were placed to the left of the main clause. We calculated how many times a resumptive was present or absent in the main clause. In Stage 2 both comparative and causal CPs are resumed by an adverb in the matrix clause with a similar frequency, when they appear to the left of the matrix clause. From 1300 to 1600, the percentages of a resumptive in the main clause are the following: causal clauses 1300=15%, 1400=50%, 1500=55%, 1600=45%; comparative clauses 1300=19%, 1400=47,5%, 1500=56%, 1600=43%. Example (32a) illustrates a comparative clause from Stage 2 resumed by the adverb *così*, while (30) shows a causal CPs always from Stage 2.

- (30) Filippo degli Agazzari, *Assempri*; early 15th cent.
 Adunque giusta cosa è che, [si-come da
 Therefore just thing be.PRS.3SG that so-as by
 molta gente fu onorato nel mondo
 many people be.PST.3SG honored in-DET world
 ingiustamente], così giusta cosa è che da
 unjustly so just thing be.PRS.3SG that by
 ·cento tanti demonii sia onorato
 hundred many demon.PL be.SBJV.PRS.3SG honored
 de-' nostri onori, cio-è di tutte le
 of-DET our honor.PL that-is of all DET
 pene de-llo -'nferno.
 pain.PL of-DET hell
 ‘Therefore, it is just that as he was honored in the world by many
 people unjustly, so it is just that he should be honored by a hundred
 demons with our honors, that is, with all the pains of hell.’

Conversely, in Stage 3 causal CPs are usually not associated to a resumptive in the matrix clause, whereas resumptives appear with comparative CPs as in (29) with the same frequency attested in Stage 2. Put differently, from 1700 the presence of the resumptive is dependent on the clause-type: it usually appeared with comparative clauses but not or less so with causal clauses. When the subordinate precedes the main clause, a resumptive is present in the main clause in less than 16% of the occurrences with causal clauses and in more than 53% of the occurrences with comparative clauses: causal clauses 1700=15,8%, 1800=15%, 1900=6%; comparative clauses 1700=53%, 1800=51%, 1900=52%.¹⁴

5. Conclusion

This paper addressed whether adverbial causal clauses are underlyingly relative clauses. By investigating the diachrony of the adverbial clauses introduced by the item *siccome/sì come* ‘as-so/since’ in the history of Italian, we proposed a unified account for relativization and adverbial causal subordination, according to which causal clauses are relative clauses over situations as envisaged in Arsenijević (2021). We demonstrated that causal *siccome/sì come* develops out of the comparative-similative marker along a three-step diachronic process. The change was formally captured by means of type of movement and null-classifier-like element paired to the wh-item. In the first stage, the comparative wh-phrase is paired to the null-classifier MANNER/EXTENT and moves from vP/TP to the left periphery. In the second stage, in specific contexts, a pragmatic inference arises such that the dependent event could be inferred to be causally related to the main event. While the wh-determiner is paired to the null classifier MANNER/EXTENT, the meaning of similarity in the manner/extent in which the events take place has become enriched by the implicature

¹⁴ As a reviewer correctly noticed, it would be necessary to provide a diachronic investigation of the item *così/sì*, as it may have played a crucial role in the change from comparative to causal adverbial *siccome/sì come* CPs. We leave this for future research.

that similar manners/extents involve similarity between situations causally related. The invited and then generalized implicature is computed in the derived position of the wh-phrase, namely in Spec,ForceP. In the third stage, this inference becomes conventionalized, with the syntactic reflex that the wh-determiner is now paired to the classifier SITUATION. The conditions licensing the pragmatic inference of causality become relaxed and are eventually lost. Thus, at this period, two derivations distinguish the comparative and causal adverbial clauses. Whereas in comparative clauses the wh-phrase moves from the wh-phrase vP/TP to the left periphery, in causal clauses the wh-phrase is externally merged in the left periphery. Although further research is needed, a similar derivation may be extended to other Italian adverbial clauses which encode some sort of causal relation and are diachronically derived from temporal clauses, like those introduced by *poiché*, *dal momento che*.

In so doing, our paper extends the relative clause analysis proposed in the theoretical literature for temporal, comparative and conditional clauses to causal clauses. In addition, it uncovers a novel link between comparative-similative and causal markers. Typological studies have indeed showed that causal markers are semantically and diachronically related to relative, temporal and purpose subordinators. Likewise, comparative-similative markers have been argued to develop into temporal markers encoding simultaneity or immediate temporal anteriority. We demonstrated that causal markers may originate from comparative-similative ones. While causality usually arises as a conventionalized implicature from temporal contiguity, our study shows that it also arises from correlation between situations. The change from similative to causal markers is attested in various Indo-European languages and Basque. Future research is needed to establish to what extent the change from comparative to causal marker is a peculiarity of Indo-European languages or is also attested in other typologically and geographically distant languages.

This paper opens new issues. For instance, it leaves unaddressed the role of univerbation and morphological neutralization. In the third stage, comparative and causal derivations are differentiated morphologically. While comparative clauses are introduced by the non-univerbated form *sì come*, causal clauses exhibit the univerbated form of the subordinator, *siccome*. The complete specialization of the two forms can be observed in various Venetan dialects where only causal *siccome* is followed by the complementizer *che* ‘that’, thereby resembling the diachronic path of the Polish *jako że* ‘because’ (Jędrzejowski accepted). While in Italian we assist to a polarization of the morphological forms, in French and Spanish causal and comparative-temporal relations are morphologically neutralized, being encoded by the same item, i.e., *comme*, *como*. Future research is needed to establish the competition between Italian *siccome/sì come* and the simple form *come* as well as their possible overlaps.

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