Subordinate and independent clauses in diachrony

Iker Salaberri,[a] Anne C. Wolfsgruber,[b] Annemarie Verkerk[c]

[a] Department of Linguistics and Basque Studies, University of the Basque Country, Spain <iker.salaberri@ehu.eus>
[b] Institut für Romanistik, Humboldt-Universität zu Berlin, Germany <anne.wolfsgruber@hu-berlin.de>; Institut für Romanische Philologie, Freie Universität Berlin, Germany <anne.wolfsgruber@fu-berlin.de>
[c] Department of Language Science and Technology, Universität des Saarlandes, Germany <annemarie.verkerk@uni-saarland.de>

This paper provides a critical overview of previous research on the diachronic behavior of subordinate *vs* independent clauses. It is shown that most prior studies present considerable issues: the terms 'clause' and 'subordination' have been used with different meanings depending on the conceptualization of grammar, and the phenomena that have been analyzed are hardly comparable with each other. Additionally, most studies have either performed a quantitative analysis of one single language or compared a selective number of changes and linguistic features in a few languages from a qualitative point of view. Accordingly, the need for empirical studies drawing on large-scale cross-linguistic databases is highlighted. Moreover, on the basis of the papers gathered in this issue, we formulate the generalization that subordinate clauses may, in some cases, develop asymmetries with respect to independent clauses either through innovation or through preservation of archaic features, perhaps as a communicative need to formally distinguish different kinds of clauses. However, a general tendency is for subordinate clauses to change much in the same way as independent clauses.

KEYWORDS: linguistic typology, language change, comparability, clause, subordination.

1. Introduction

During the last decades, studies on comparative and historical linguistics have frequently been concerned with the diachronic evolution of different types of clauses. In this context, it has often been stated that subordinate clauses tend to preserve conservative morphosyntactic features, whereas independent clauses tend to innovate new forms. Data have been adduced from various areas of grammar: first and foremost word order has been observed to change in embedded clauses at slower rates than in independent clauses in Biblical Hebrew (Givón 1977: 191-234), Niger-Congo (Hyman 1975: 124-125, Givón 1979: 259-261, 2001: 246-248), Germanic (Hock 1991: 330-336, Crowley & Bowern 2010: 231), Chadic (Frajzyngier 1996: 165-173), Canadian French (Poplack

1997: 293, 296-297), Mon and Palaungic (Jenny 2020: 35), among other languages (Lightfoot 1982: 154-155). This is illustrated below by Biblical Hebrew, which according to Givón (1977) was, at the time at which most relevant manuscripts were written, in the process of shifting from verb-initial to verb-medial order. This change is apparently more advanced in independent clauses (1a), which display preverbal elements more frequently than subordinate clauses (1b), which more often follow verb-initial order (spelling and transliteration of the examples are adapted, glosses added).[1]

(1)   a.   וַתְּשָׁא הָוַח־תָא עַדָּי סָדָאְהָו
           Wǝ-haː-ʔaːdaːm   *yaːdaʕ*   *ʔet*   *ħawwaː*   *ʕiʃt-o*
           and-DEF-man   know.3SG.M.PST   DO   Eve   wife-3SG.M.POSS
           'And Adam knew his wife Eve' (*Genesis* 4.1, Givón 1977: 192)
   b.   סַיַמַה וּלְּקִ־יְכ־חֹן עַדֵּיַו
           Way-yeːdaʕ   *noaħ*   *kiː*   *qalluː*   *ham-mayim*
           and-know.3SG.M.PST   Noah   SUB   be.light.3PL.M.PST   DEF-water
           'And Noah knew that the water had sunk down' (*Genesis* 8.11, Givón 1977: 192)

The same claim applies to the emergence of innovative morphology in root clauses as opposed to the preservation of obsolete morphology in embedded clauses in languages such as Armenian (Bybee *et al.* 1994: 231-233), Basque (Aldai 2000: 48, Mounole 2014: 7, 312, fn. 339), Cairene Arabic (Mitchell 1956: 83-85), Spanish (Klein-Andreu 2016) and Tokyo Japanese (Matsuda 1993, 1998). As an example, Matsuda (1998: 3) points out that in Tokyo Japanese an inflectional suffix conveying potentiality, *-are*, is being replaced, via analogy, by an innovative suffix, *-e*, with the same meaning. Apparently, this ongoing change is found by the author to have advanced further in independent clauses (2a), where *-e* is found more often, than in embedded clauses (2b), where *-are* is the most frequent marker (glossing of the examples is added, and the relevant morphemes are marked in deitalicized script).[2]

(2)   a.   アタシモ 着物   切れるよ   一人で
           Atasi-mo *kimono*   *ki-r-e-ru-yo,*   *hitori-de*
           1SG-too kimono.ACC   wear-LS-POT-PRS-FIN   myself-by
           'I can put on a kimono myself, too' (Tokyo Japanese, Matsuda 1998: 3)
   b.   やっぱり 一番   正しく   生きられるのわ
           Yappari *itiban* *tadasiku*   *iki-r-are-ru-no-wa*
           after.all most righteously   live-LS-POT-PRS-SUB-TOP
           裁判官かな
           saibankan-kana
           judge-perhaps
           'After all, it is a judge who can live in the most righteous manner' (Tokyo Japanese, Matsuda 1998: 3)

The data discussed so far suggest a number of things: (i) there seems to be cross-linguistic evidence that subordinate clauses tend to preserve conservative linguistic forms, at least in some cases of change; (ii) the purported conservatism of subordinate clauses involves different processes of change, including word order shift and analogy; (iii) this applies both to past and to ongoing cases of change. These premises do not, however, fully correspond to the reality of the world's languages, for reasons that are discussed in Sections 2 and 3.

This paper is structured as follows: Section 2 briefly assesses a number of recent studies that have been published on the contrast between independent and subordinate clauses in language change. Section 3 is dedicated to discussing some basic considerations that should be borne in mind before tackling the topic at hand. In Section 4, the contributions of this Special Issue are summarized, and finally, in Section 5, a few conclusions and lines of future research are drawn.

2. On the apparent conservatism of subordinate clauses

A number of causes have been adduced to account for the conservative nature of subordinate clauses. The first of these is based on pragmatics and discourse. Hooper & Thompson (1973), for example, argue that discourse-pragmatic operations such as topicalization and focalization occur more frequently in main clauses.[3] Consequently, word order permutations are more common in independent clauses, which implies that information-structural word-order change is more likely to occur there than in subordinate clauses. According to Givón (1979: 48-49), the degree of presupposed background underlying each sentence is lowest in main, declarative, affirmative and active sentences, which is why they are syntactically less complex and occur more frequently in discourse than subordinate clauses. Therefore, the latter are more resistant to change. As pointed out by Matsuda (1998: 6-7), however, this explanation does not account for the fact that some cases of delayed change in embedded clauses, such as the aforementioned analogical replacement of potential markers in Tokyo Japanese, do not seem to be related to discourse and pragmatics at all. Moreover, it might not be true for all languages that the amount of background information is highest in subordinate clauses; see Berge (*this issue*).

A second explanation that has been put forward draws on psycholinguistics. Bybee (2002: 2) argues that embedded clauses are processed differently in contrast to main clauses, namely as indivisible units, i.e.

'chunks'. This property of subordinate clauses implies that they are more difficult to process and less likely to be manipulated and, accordingly, less likely to shift. The problem here is that substantial psycholinguistic evidence for this statement – at least any evidence that we are aware of – is lacking. Bybee (2002: 13) claims that more conservative forms are less productive, e.g. in conjugation patterns of verbs, but this account is based on frequency rather than language processing. In fact, the question seems to be more complex: some studies argue that it is the relative order of independent and subordinate clauses that facilitates processing of complex sentences, rather than the nature of the clauses themselves (Holmes 1973, Gries & Wulff 2021), whereas others show that some kinds of subordinate clauses are more difficult to process than others (Gordon & Lowder 2012, Vasishth *et al.* 2013). Accordingly, in view of the current state of knowledge, it does not seem possible to state that subordinate clauses are generally more difficult to process.

Thirdly, the apparently divergent behavior of subordinate clauses has been claimed to be connected to register or style. Matsuda (1998: 7) argues that formal linguistic registers tend to be more hypotactic, as opposed to informal registers, which are commonly more paratactic. This implies that subordinate clauses occur more frequently in formal registers. Given the fact that formal registers are generally also less prone to using innovative speech forms, the conservative character of embedded clauses must be understood as a by-product of speech style. As pointed out by the author, this does not necessarily mean that subordinate clauses are generally more conservative *per se*. Furthermore, there may also be differences within the class of subordinate clauses concerning their compatibility with different registers.

However, it remains to be seen whether register is the only factor involved here. Languages with very differentiated registers tend to be used in writing, and it has been shown that the medium in which communication occurs and, specifically, the development of writing systems can change languages in many ways[4] (Mithun 1985, Koch & Oesterreicher 1985, Dąbrowska 2020), including a tendency towards more hypotaxis and more rigid word order.[5] In this sense, it has been stated that, in some cases, written language may retain grammatical features which have already been (long) lost in oral language (Joseph & Janda 2003: 140-141, Campbell 2020: 375). Therefore, it could well be that the medium of communication is at least as relevant a factor as speech register, as well as the intertwinings between both, when discussing clause types in diachrony. This is related to yet another matter: historical linguistic data should be handled with caution in view of the fact that written languages do not necessarily reflect the properties of (corre-

sponding) spoken languages; this is the so-called 'written language bias' of linguistics (Linell 2005: 29-35, Moreno Cabrera 2008).[6]

Fourthly and finally, Lightfoot (1989: 327, 2006: 125-136) relates the diachronic contrast between root and embedded clauses to language acquisition. The author argues that, in order to acquire a grammar, a child needs to be exposed to grammatical processes,[7] which enable locality restrictions and other grammatical rules to become evident to the child. Since main clauses tend to be the locus of grammatical processes, a child does not need to be exposed to subordinate clauses – at least not entirely; Lightfoot (2006: 125) claims that the 'topmost' elements of embedded clauses, namely complementizers and the subjects of infinitival clauses, are indeed relevant to acquisition – in order to acquire the grammatical rules of a specific language. This is the so-called 'degree-0 learnability' of human language. The idea here is that children learn the divergent features of subordinate clauses from cues available to them in independent clauses. For example, in Dutch independent clauses a 'verb-raising' rule causes finite verbs to move from clause-final to second position, whereas in subordinate clauses finite verbs remain in final position. However, if the verb at issue has a so-called separable prefix, such as *opbellen* 'to call up', only the root, in this case *bellen*, raises to second position in main clauses, whereas the prefix remains in final position, i.e. at the same place where finite verbs remain in embedded clauses. This is (apparently) a cue that children use to learn that finite verbs do not move to second position in embedded contexts (Lightfoot 2006: 126-127).

According to this view, one might state that subordinate clauses are somehow irrelevant to language change, which is why they can, at least for some time, preserve linguistic features different from those of independent clauses. Plausible as this proposal may be, it remains to be seen whether the causes of linguistic change can be reduced solely to the process of first language acquisition. In fact, in many languages in which a construction has been reanalyzed, the source construction is often retained in parallel, and this is, in theory, a hindrance for language acquisition. Moreover, the framework provided by Lightfoot provides no testable hypotheses as to what can change and what cannot. Finally, Lightfoot's approach is strongly centered on European languages. For a critical view of this framework, see Harris (2003: 530).

We hope to have shown by the discussion carried out so far that explanations concerning the conservative character of subordinate clauses are, for different reasons, intricate, which suggests that more research on the topic is necessary. Also, a few basic principles need to be laid out in order to formulate testable hypotheses based on empirical data and

which can be applied cross-linguistically. To sum up so far, there seems to be evidence that discourse, pragmatics, processing factors, register and style, medium of communication and the way first languages (L1s) are learned all matter in explaining the alleged conservatism of subordinate clauses; nevertheless, there are vast differences between different types of subordinate clauses, morphosyntactic parameters, and languages in how relevant these explanations are.

3. Evaluating clauses in diachrony

3.1. Defining comparative terms

The first issue worth considering before addressing clauses in language change concerns the delimitation of the comparative terms to be used, in this case 'clause' and 'subordination'. The idea here is that, if one aims at performing a cross-linguistic analysis of a given linguistic phenomenon and at deriving typologically valid generalizations, comparative definitions of these concepts need to be used (Haspelmath 2010). Nevertheless, the concepts 'clause' and 'subordination' have, despite their frequent use in the literature, numerous definitions that vary depending on the conceptualization of grammar – if they are defined at all. In fact, most of the sources cited in Sections 1 and 2, namely Hooper & Thompson (1973), Givón (1977, 1979), Matsuda (1993, 1998), Bybee *et al.* (1994), Bybee (2002), Frajzyngier (1996) and Crowley & Bowern (2010) do not explicitly delimit these concepts, and thus it is impossible to know exactly what they are referring to. Only Hock (1991: 313) refers to 'clause' as follows: "the basic organization of sentences is in terms of a 'noun phrase' (NP, the subject of the sentence) plus a 'verb phrase' (VP), the 'predicate'", whereas Lightfoot (1982: 75) claims that 'subordinate clauses' are "islands from which nothing can be moved except via one of the two escape routes, COMP position or the subject of an infinitive".

The first of these two definitions is in line with a delimitation of 'clause' that has been proposed particularly for the purpose of cross-linguistic comparison: Haspelmath (2021: 41) defines 'clause' as "a combination of a predicate (full verb or nonverbal predicate) and its arguments plus modifiers". In a similar vein, Lightfoot's definition of 'subordinate clause' focuses on form, with no reference to the function of subordinate clauses. However, the function of subordinate clauses is just as important for the purposes of cross-linguistic comparison as their actual formal (morphosyntactic) realization.[8] The fact that some

languages have embedded clauses does not mean that independent and subordinate clauses exist as formal units in the grammars of all world languages. In fact, there is no specific set of formal criteria defining subordinate clauses as a distinct kind of clause (Cristofaro 2003: 15) and, consequently, there are no formal cross-linguistic criteria to distinguish between subordinate and independent clauses.

Therefore, and in line with Langacker (1991: 498-501) and Cristofaro (2003: 30-31), subordination can be considered not as a formal part of grammar, i.e. not as a subtype of clause, but rather as a function of language, specifically, that of non-assertion. Subordinate clauses are thus distinguished from independent clauses by two features (Cristofaro 2003: 49-51): (i) lack of assertiveness, that is to say, the event denoted by a subordinate clause cannot be asserted in view of the event denoted by the independent clause; (ii) lack of illocutionary force, i.e. subordinate clauses cannot be interrogated, commanded or asserted, even though there are exceptions.[9]

Both these properties can be used as cross-linguistically valid tests to determine whether a given grammatical construction is an instance of subordinate clause.[10] A common test for assertiveness is negating the part of a sentence that is open to challenge, that is to say, the independent clause. Accordingly, if a given sentence is negated and the resulting reading of the sentence is infelicitous, then this must mean that the negated part cannot be an instance of independent clause or, stated differently, that it must be subordinate (3a-c).

(3) a. *Alarms ringing, the burglar fled*
     b. *It is not the case that, alarms ringing, the burglar fled* (only *the burglar fled* is negated)
     c. #*It is not the case that, alarms ringing, the burglar fled* (only *alarms ringing* is negated)

Sentences (3b) and (3c) are the externally negated counterparts of (3a). The latter sentence consists of an independent clause (*the burglar fled*) and a subordinate clause (*alarms ringing*), which means that theoretically the external negation can be interpreted as negating the former or the latter or both. The felicitousness of (3b), where only the independent clause is understood as being negated, indicates that the negated part is not an instance of a subordinate clause. In turn, the infelicitousness of (3c) suggests that the part of the sentence understood as being negated must be an instance of subordinate clause. The infelicitousness of (3c) also entails that a third theoretically possible reading – namely the one where both the independent and subordinate clause are understood as being negated – is disallowed.

Illocutionary force typically refers to the speech act that is associated with an utterance, i.e. to the purpose with which an utterance is expressed (Austin 1962: 98-99). Instances of speech acts are stating, questioning and commanding, among others, which are frequently coded by declarative, interrogative and imperative linguistic forms respectively, although exceptions certainly occur as well. It follows from this that, if a kind of clause bears no illocutionary force, it cannot be used to state, question or command. Therefore, in most cases a cross-linguistically suitable test are tag questions, which combine negation and interrogation (4a-c).[11]

(4)   a.   *Alarms ringing, the burglar fled*
      b.   *Alarms$_j$ ringing, the burglar$_i$ fled, didn't (s)he$_i$?*
      c.   **Alarms$_j$ ringing, the burglar$_i$ fled, didn't they$_j$?*

Examples (4b) and (4c) are the tag-questioned versions of (4a), which, like (3a), consists of an independent and a subordinate clause. In (4b) the tag question is understood to refer only to the part *the burglar fled*, and the result is grammatical. This suggests that *the burglar fled* has illocutionary force and that, therefore, it must be an instance of independent clause. Inversely, the ungrammaticality of (4c), where the tag-questioned part is *alarms ringing*, indicates that *alarms ringing* cannot be an example of independent clause, that is to say, it must be regarded as subordinate (Cristofaro 2003: 32).

To summarize so far, any studies aiming at making claims concerning different kinds of clauses in language change should, as a first step, delimit the comparative terms being used. This should be done by means of cross-linguistically valid, testable criteria in line with the ones that have been laid out in this subsection. In any case, formulating testable criteria is a complex issue, and a step into making clear what is meant by terms like 'subordination', without solving all the issues, is already a step in the right direction. For examples of delimitation of comparative terms, see particularly the papers by Mendoza *et al.* and Talamo *et al.* (*this issue*).

3.2. Comparability of linguistic phenomena

A second issue, to be taken into account before making cross-linguistically valid generalizations concerning distinct clause types in diachrony, involves the fact that the phenomena under analysis should be mutually comparable. As briefly mentioned in Section 1, some of the research on this topic involves word order shift (Givón 1977, 1979, Lightfoot 1982, Hock 1991, Frajzyngier 1996, Crowley & Bowern 2010,

Jenny 2020), whereas other studies investigate grammaticalization of tense-aspect-mood categories (Bybee *et al.* 1994: 231-233), reanalysis of evidential markers (Campbell 1991: 285-299), loss of null referential pronouns (Vance 1997: 294-321, Axel 2007: 307-314) and even loss of prosodic features (Hock 2021: 188-190, 509), among other topics. The analyzed phenomena are concerned with rather different levels of linguistic analysis and can, therefore, hardly be compared with each other in general terms.[12] Consequently, the fact that a given kind of change tends to yield more conservative linguistic forms in a specific kind of clause should not necessarily lead, in the absence of evidence from other kinds of change, to the generalization that this kind of clause is more resistant to change.

Moreover, one should bear in mind that different linguists conceive differently of some of the phenomena that have been used to study clauses in diachrony. In some cases, it is not even clear whether these phenomena exist as distinct processes of change. This is true particularly of grammaticalization: the conception of grammaticalization and of the mechanisms involved in it differ according to e.g. Hopper (1991: 22), Hopper & Traugott (2003: 1-2), Heine (2003: 579), Boye & Harder (2012: 28-29), Detges *et al.* (2021), Walkden (2021) and Gildea & Barðdal (2023), among many others. As a consequence, the significance of studies using grammaticalization as a testing ground for the diachronic nature of clauses is not always clear.

In addition, another problem related to the comparability of linguistic phenomena concerns the fact that the objects of study have been treated categorically. For instance, Hock (1991: 330-336) argues that in Germanic languages subordinate clauses have preserved a verb-final order inherited from the proto-language, whereas main clauses have innovated verb-medial orders. However, this does not mean that absolutely all main clauses are verb-medial in old Germanic languages, nor that all subordinate clauses are verb-final. In fact, exceptions to these generalizations are abundant. Therefore, it seems more appropriate to adopt a continuous, gradable approach to the phenomena under study, as is done, among others, by Biagetti *et al.* (2023) and Levshina *et al.* (2023) for word order; see also Talamo *et al.* (*this issue*).

Finally, it should be pointed out that it is not always easy to pinpoint what exactly it means for a particular area of grammar to be 'innovative' or 'conservative'. Many of the studies cited so far take a single instance of change as indicative of the innovativeness or conservatism of a whole kind of clause or even an entire language, but this is not necessarily so. For example, Hock (1991: 331-332) treats Old English subordinate clauses as conservative for preserving verb-final word order.

In turn, Jucker (1990) and Stockwell & Minkova (1991) argue that Old and Middle English main clauses preserve verb-second order for a longer time than subordinate clauses, and Walkden (2013) shows that subordinate clauses are the first to lose null subjects in Old English.[13] Therefore, it would be preferable for rates of change to be observed directly for each language and for each locus of change. This could be done by means of statistical analysis, as is carried out by Jing *et al.* (2023) concerning word-order change in Indo-European, or by means of diachronic corpora, if possible. A further issue is that typological tendencies such as the preference for agent-initial order may conceal differences in rates of word-order change (*ibid.*). Therefore, cross-linguistic tendencies also need to be taken into account.

3.3. Scope of analysis

A third major issue, perhaps related to the first two, that should be looked into before evaluating the performance of distinct clause types in terms of language change is the fact that previous studies have focused either on very specific grammatical features or on a very small number of languages, or both. This is true of most of the wide-scope studies cited so far, and yet the implications have often been generalized to all languages (e.g. Givón 1979: 259, 2001: 246, Lightfoot 1982: 154, Campbell 1991: 293, Hock 1991: 332, Bybee *et al.* 1994: 230-231, Bybee 2002: 12, Crowley & Bowern 2010: 231), except in a few papers on individual languages (Jucker 1990, Stockwell & Minkova 1991). Few studies have looked into more than a few languages, and even then, attention has usually been given to a single language family or family branch.

This state of affairs is problematic for a number of reasons, particularly the fact that it has led to contradictory claims. The view that subordinate clauses are conservative has been explained in detail in Sections 1 and 2. In turn, some scholars argue that innovative patterns emerge in embedded contexts and only later extend to root clauses. This point has been made in studies on reanalysis (Campbell 1991: 285-299), word-order change (Jucker 1990: 31-42, Stockwell & Minkova 1991: 399-400) and the loss of null referential pronouns in languages such as Old English (Walkden 2013: 163-164), Old High German (Axel 2007: 307-314), Middle French (Vance 1997: 294-321, Ledgeway 2021, among others) and Old Russian (Luraghi & Pinelli 2015). The purported innovative character of embedded clauses in losing null referential pronouns is here illustrated by Old Russian, where the lack of such pronouns is more frequent in main clauses (5a) than in subordinate clauses (5b) (the subject pronoun in (5b) is written in deitalicized script for emphasis).

(5) a. Пошё-л-ø   ес-ми   за   мор-е   индъиск-ое
     Poshë-l-ø   *jes-mi*   *za*   *mor-je* *indijsk-oje*
     go-PTCP-M.SG   be.PRS-1SG   beyond   sea-N.LOC Indian-N.LOC
     'I have gone beyond the Indian sea' (Afanasy Nikitin's *A journey beyond the three seas*, 15th c., Luraghi & Pinelli 2015)

   b. И   соудъя ву-спроси-л-ø   черниц-а   Семён-а:
     I   *soudĭja* *vŭ-sprosi-l-ø*   *černĭc-a*   *Sjemon-a:*
     and   judge   PFV-ask-PTCP-M.SG monk-ACC.M Semën-ACC.M
     комоу   ж   ведомо,   что   ты
     komou   *ž*   *vjedomo,*   *čto*   ty
     who.DAT.M.SG   PART   known.NOM.N.SG   SUB   2SG
     пашешу   тее   земли?
     pašešu   *tjeje*   *zjemli?*
     plough.PRS.2SG   DEM.ACC.F.PL   land.ACC.PL
     'And the judge asked monk Semën: Who is aware of the fact that you plough those lands?' (14th-15th c., Luraghi & Pinelli 2015)

In turn, a third view states that language change ensues at equal rates in all environments affected by the change, which implies that languages evolve at equal rates in independent and subordinate clauses (Kroch 1989: 206, 2001, Salaberri 2018, Jing *et al.* 2023). Kroch (1989) supports this view with data from innovations such as the rise of the *do*-auxiliary in Middle English, the use of the definite article with possessive noun phrases in Portuguese and the loss of verb-second word order in the history of French. The idea here is that, while surface manifestations of a change may be divergent in independent and subordinate clauses, there is in fact no difference between contexts concerning rates of change because contexts merely reflect a single underlying change in grammar. Stated somewhat differently – i.e. without adopting a bistratal or two-level (deep *vs* surface) view of grammar –, the order in which different contexts are affected by change and rate/speed of change are two very different things, and it is only the latter which gives us information on innovativeness/conservativeness. In fact, some changes may be related to functional and stylistic factors, i.e. they are probably due to reasons strictly independent of grammar. This and related ideas are discussed in more detail in Section 4.

In general, it can be stated that there is a lack of comprehensive studies on the diachronic nature of clauses concerning the manner of change (reanalysis, extension, etc.), the locus of change (word order, null subjects, morphology, etc.) and the languages undergoing the change. This is despite the fact that the increasing availability of grammatical descriptions and access to digital corpora would enable such comparative research. This Special Issue is meant to fill that gap in

research by gathering papers on areally and typologically diverse languages and on a variety of linguistic phenomena.

Specifically, the questions which the papers gathered in this Special Issue address are the following, some of which are interconnected:

(a) What evidence is there that specific kinds of clauses are more innovative or conservative in the face of language change?

(b) To what extent do divergent conceptions of 'clause' and 'subordination' condition our understanding of language change in different clause types?

(c) What are the causes for the divergent change of different clause types?

(d) Does the diachronic behavior of clauses vary depending on the language, historical period of a language, language family, language area, mechanism or kind of change under discussion?

(e) Does contact between languages influence the way in which change ensues in different kinds of clauses?

(f) How does frequency affect language change in different clauses?

(g) How can different statistical analyses help model the diachronic behavior of various kinds of clauses?

4. Contributions to this issue

The papers gathered in this Special Issue cover a broad range of languages, language families, linguistic areas, methodologies and topics. Concerning sampled languages, there are studies on Indo-European (Talamo *et al.*), Slavic (Mendoza *et al.*), Semitic (Bjøru & Pat-El), Selkup (Behnke & Budzisch), Eskaleut (Berge), Enggano (Zobel & Hemmings) and Kanakanavu (Cheng). Two contributions focus on word order (Talamo *et al.*; Mendoza *et al.*), two on voice and case alignment (Cheng; Zobel & Hemmings), two on markers of subordination (Bjøru & Pat-El; Behnke & Budzisch) and one on verbal mood (Berge). The papers analyze present-day languages, recent or ongoing changes, as well as changes that took (or must have taken) place in the distant past. The data used vary depending on the aims and methods: some contributions draw on parallel corpora (Talamo *et al.*; Mendoza *et al.*), others on language descriptions (Berge; Zobel & Hemmings), others on historical records (Bjøru & Pat-El; Behnke & Budzisch), whereas yet others use data collected in the field either by the authors themselves, or by other linguists (Cheng; also Zobel & Hemmings).

In their paper *A quantitative approach to clause type and language change in two Indo-European corpora*, Luigi Talamo, Annemarie Verkerk

and Iker Salaberri put to the test the claim that subordinate clauses are more conservative than main clauses by looking at the relative order of subject, object and verb and the prevalence of null subjects in main and adverbial clauses in 45 Indo-European languages. The authors adopt a two-sided methodology combining qualitative analysis, which draws on linguistic features as described in descriptive grammars, and quantitative analysis, which is based on data from two annotated corpora that include considerable numbers of Indo-European languages: Universal Dependencies (UD) (Marneffe *et al.* 2021) and the Corpus of Indo-European Prose (CIEP) (Talamo & Verkerk 2022). Moreover, rates of change are modeled using phylogenetic comparative methods, and the two variables under study (verb position and rate of null subjects) are analyzed by using a gradient rather than a categorical approach. The authors argue that there are no significant differences in rates of change between main and adverbial clauses, even if the latter can in some cases develop asymmetries with respect to the former. This paper thus adds to the growing body of empirical cross-linguistic data on the diachronic behavior of subordinate and independent clauses.

The next paper, *Capturing an oxymoron in the wild: Directive subordination in Slavic* by Imke Mendoza, Barbara Sonnenhauser and Björn Wiemer, looks into the criteria that can be used in order to tell apart main from subordinate clauses in a set of Slavic languages, here represented by Polish, Russian and Slovene, in which it is rare for the two kinds of clause to be marked differently. The authors draw on randomly selected corpus data and use two features, namely relative order of the constituents of the clause and occurrence of clause-initial connective elements in order to test whether they can be used to determine an independent *vs* subordinate contrast. This bottom-up approach does not yield any relevant differences concerning the use of connectives and word order in main and subordinate clauses. The authors conclude that word order is not helpful in establishing clause-type distinctions, which is in line with the studies drawing on empirical comparative data. This finding is relevant because it suggests that, while asymmetric structures can arise in clause combining, this does not necessarily mean that some kinds of clauses are more innovative or conservative than others. The authors also plead for bottom-up approaches drawing on gradable concepts as a way of gaining further insights into the object of study.

Øyvind Bjøru and Na'ama Pat-El, then, in their article *How a subordinate marker changed the West-Semitic TAM*, deal with the refunctionalization of a purportedly original subordinating verbal suffix *-u* as a marker of indicative mood in West Semitic languages. Importantly, the authors argue that this change must have occurred in subordinate

clauses first and must have spread from there to main clauses, because before this case of repurposing occurred, *-u* must have been confined to subordinate clauses, as illustrated by East Semitic languages. This change thus runs counter to aforementioned claims on the conservative nature of subordinate clauses. In fact, the authors argue that it is precisely the preservation of archaic grammatical material in subordinate clauses which fosters that kind of material being repurposed for different functions and, eventually, prompts the spread of these new functions to other kinds of clauses. The Semitic data thus suggest that both main and subordinate clauses can be the locus of innovation as well as preservation of conservative forms. Accordingly, if asymmetries arise, this is usually motivated by a new functional use.

In the same line of thought, another article, *Adverbial clauses in Selkup over time: A study of temporal and purpose clauses* by Anja Behnke and Josefina Budzisch looks into the development of subordinating strategies across the documented history of Selkup, a Uralic language of western Siberia, with a focus on temporal and purpose clauses. The authors show that in present-day dialects of Selkup it is possible to connect temporal and purpose adverbial clauses with main clauses either through syndesis or through asyndesis; in the latter case, various non-finite forms are available, including converbs, action nouns, infinitives and participles, which are expressed by means of suffixes attached to the verb. Moreover, an innovative subordinating strategy involves clause-initial subordinators borrowed from Russian heading finite adverbial clauses, although native subordinators are also used for this purpose. A diachronic overview of the corpus data suggests that the innovative strategy seems to be increasing, at least in temporal clauses. This case of contact-induced change thus illustrates the fact that contact can also drive innovation of new forms in subordinate clauses.

Another contribution, namely *Innovation in Eskaleut dependent moods* by Anna Berge, is concerned with the emergence of innovative mood forms in dependent clauses in Eskaleut languages. In this language family, clause chaining is indicated by means of verbal mood and person inflection, which means that the rise of new verbal moods entails the availability of new coordination and subordination strategies. The author argues, on the basis of a number of descriptions of Eskaleut languages, that the system of dependent moods is the main locus of innovation; in fact, all of the forms innovated by subgroups of the language family after the split of the proto-language seem to involve dependent moods. It is proposed that the innovativeness of dependent moods in Eskaleut is due to the fact that they are much more frequent in natural discourse than independent moods. Moreover, dependent moods consti-

tute the main strategy for expressing verbal modification in a family of languages with few independent adverbs and no independent adjectives. The Eskaleut data thus show, as opposed to previous claims (cf. Section 2), that dependent clauses do not always encode background information, and it is precisely this ability to express new information that fosters the emergence of innovative forms. In general terms, this paper adds to the body of data that go against the claim that subordinate clauses are conservative.

In their article *Morphological conservatism in Enggano subordinate clauses*, Erik Zobel and Charlotte Hemmings look into case alignment in Enggano, an Austronesian language spoken in southwestern Indonesia. Some kinds of Enggano subordinate clauses are argued to reflect an ergative-absolutive alignment that is generally observed in conservative Austronesian languages and which therefore could be assumed to have been general in earlier stages of Enggano. By contrast, in this language other kinds of subordinate clauses and main clauses reflect a nominative-accusative alignment that may, in turn, be considered an innovation. This state of affairs is typologically uncommon since split ergative systems tend to involve ergativity in main clauses. Furthermore, it suggests that Enggano main clauses have, as the result of a complex series of changes, innovated a new pattern, whereas some subordinate clauses have remained conservative. This paper thus adds to the studies cited in Sections 1 and 2 that show that subordinate clauses may, in some cases, develop asymmetries with respect to other kinds of clauses. Moreover, the data indicate that historical changes undergone by languages may affect different kinds of subordinate clauses in different ways, since some Enggano subordinate clauses (e.g. relative clauses) have aligned with main clauses in innovating a nominative-accusative pattern.

The final paper *On the rise of an unusual Austronesian voice system: Perfective-like verb forms in Kanakanavu* by Yi-Yang Cheng argues, in a similar vein as some of the other papers gathered in this issue, that subordinate clauses can be the site of innovations. This is illustrated on the basis of data from Kanakanavu, an Austronesian language spoken in Taiwan. The author analyzes patient-voice verbs marked with the suffix -*ai*, which occur only in main clauses, in contrast with other patient-voice constructions, which occur in both main and subordinate clauses. It is argued, as opposed to previous studies on the topic, that those constructions not bearing -*ai* originated in subordinate clauses and later spread to main clauses via insubordination, but without fully replacing constructions marked with -*ai*. Moreover, it is pointed out that not all subordinate clauses must have changed equally: patient-voice constructions other than those bearing -*ai* apparently originated in nominaliza-

tions that were later reanalyzed as (pseudo-cleft) relative clauses and then as main clauses. This study thus also pleads for a more fine-grained analysis when addressing distinct clause types in diachrony, in addition to showing that the conservative character of subordinate clauses should not be taken for granted.

5. Concluding remarks and avenues for future research

A tentative generalization that can be made on the basis of the sources discussed in this paper is that subordinate clauses may, indeed, develop asymmetries with respect to their independent counterparts, either through preservation of conservative traits, or through creation of new forms. This claim has been made repeatedly on the basis of data from a growing number of languages. However, the data also show that independent clauses can just as well innovate new traits, preserve older forms as opposed to ongoing change in subordinate clauses, or innovate jointly with subordinate clauses. All three possibilities, or any combination thereof, can also occur at different stages of one and the same language. A specific instance of innovation or preservation cannot, therefore, be used as a diagnostic for diverging types of change in different kinds of clauses. Rather, rates of change should be compared, and the few studies that have done so find no difference between subordinate and independent clauses (Jing *et al.* 2023, Talamo *et al.*, *this issue*). Nevertheless, this finding needs to be supported with more data from many more languages, and it should thus be characterized, for the moment, as preliminary.

In view of the former, it seems that, for now, there is no empirical support for the recurrent claim that subordinate clauses are conservative in the face of language change. The question, then, is why different kinds of clauses sometimes develop different features and which functional and stylistic factors are responsible for the development of divergent features, a question future studies should look into in more detail. One reason may involve the fact that having different grammatical patterns in different kinds of clauses is useful in order to formally distinguish clause types. In languages such as Dutch and German, for example, clause type seems to be a relevant factor that needs to be marked by means of word order, among other means. Moreover, this implies that subordinate clauses are often doubly marked, namely by means of word order as well as clause-initial subordinators. Perhaps this is related to Kuryłowicz's first law of analogical change, which states that single marking of a morphological feature is replaced by double marking, as

argued by Hock (2021: 244). However, it seems that double marking cannot be the sole reason for the divergent diachronic change of distinct clause types, particularly considering that other cases of asymmetries between clauses discussed in this paper do not entail double marking. Clearly, more research is necessary in this respect.

Some of the papers gathered in this issue make the point that subordinate clauses do not change uniformly. Accordingly, a future line of study in this direction might be to look at how particular clause subtypes evolve or, perhaps even more specifically, at how different constructions change. Moreover, it has been pointed out that the cases analyzed involve a variety of mechanisms and phenomena of language change. An additional future line of study thus might be to assess the similarities and differences between mechanisms of change concerning clauses in diachrony. Finally, it has been observed that clearer insights into the research questions are gained when the objects of study (subordinate clauses, independent clauses, word order etc.) are conceived of as gradable rather than categorical. Therefore, future studies should adopt gradable approaches to the concepts under analysis.

Author contributions

IS: conceptualization, data collection, writing, review and editing. ACW: writing (review and editing). AV: writing (review and editing). All authors contributed to the article and approve the submitted version.

Abbreviations

1, 2, 3 = 1st, 2nd, 3rd person; ACC = accusative; DAT = dative; DEF = definite; DEM = demonstrative; DO = direct object; F = feminine; FIN = finite; LOC = locative; LS = linking sound; M = masculine; N = neuter; NOM = nominative; PART = particle; PFV = perfective; PL = plural; POSS = possessive; POT = potential; PRS = present; PST = past; PTCP = participle; SG = singular; SUB = subordinator; TOP = topic.

Notes

[1] As argued by Givón (1977), many factors in addition to clause type are probably involved in this process, including referentiality, definiteness, tense-aspect-mood, volition and polarity. We leave these out of the discussion for the sake of simplicity.

[2] Here, again, other factors than just clause type are likely to be at play. For an overview, see Matsuda (1993).

[3] Ross (1973: 397) takes a similar stance via his 'Penthouse Principle', which states that '[n]o syntactic process can apply only in subordinate clauses'.

[4] A reviewer points out that writing is used much less commonly than other registers and that, therefore, it is unlikely to have a general impact on grammatical change. Here we can only refer to the cited sources, which argue for the contrary. Perhaps it is not so much the development of writing as conformance to the grammatical rules of an Indo-European language with a long written tradition that has an impact on the grammar of languages. This seems to be the case for Mohawk, which has changed under the influence of the English written medium (Mithun 1985). This open question remains for future research.

[5] Another issue related to the impact of using writing systems on language change involves standardization. Standardization processes have been argued to slow down or even halt cases of language change or, alternatively, to favor conservative patterns at the expense of innovative ones; see Laitinen (2004: 253-259) for an example involving grammaticalization in Finnish.

[6] Admittedly, the oral-written contrast is much more complex than can be given credit here. For discussion of some relevant factors see the contributions gathered in Bech & Möhlig-Falke (2019).

[7] Lightfoot (1989, 2006) fails to specify what he means by 'grammatical processes', even though he frequently uses the term 'movement (operation)'.

[8] In fact, functional factors may be the drivers of differences between clause types. For details, see Sections 3 and 4.

[9] A reviewer argues that 'non-assertion' is much too broad a concept, as it also includes all kinds of non-clausal elements (e.g. noun phrases), and also too narrow, because questions and commands are not assertive but are not instances of subordination. They suggest that subordinate clauses should rather be defined as the kinds of clauses that can be focused or the answer to a question, whereas independent clauses can be regarded as clauses with their own illocutionary force. While we agree with many of these points – non-clausal elements such as noun phrases fall beyond our analysis, which focuses on clauses –, we are not convinced by the proposed alternative: independent clauses can just as well be focused or the answer to a question, as in: A. *What is everybody up to?* B. *Lily is playing and David is cooking*, and subordinate clauses can (rarely) bear illocutionary force, as in: A. *I wonder whether there is any salt on this table.* B. *Sure, here you go!*, where A has used the subordinate clause *whether there is any salt on this table* in order to express a request, i.e. the subordinate clause bears illocutionary force (cf. also note 11).

[10] In fact, different tests for assertiveness and illocutionary force may apply in different languages. In this paper we illustrate these using English examples, but that does not mean that some constructions that are ungrammatical in English are unacceptable in other languages.

[11] For a few exceptions concerning the cross-linguistic validity of tag questions as a test for subordination see Green (1976). For some examples of subordinate clauses with illocutionary force see Mendoza *et al.* (*this issue*).

[12] This claim does not apply equally strongly to all phenomena under consideration: reanalysis has been argued to take place at different levels of grammar (e.g. Detges *et*

al. 2021).

[13]   The discussion concerning the question whether in the history of English subordinate clauses are conservative or innovative is complex, particularly for word order. Factors such as polarity and finiteness have been argued to play a role in word-order change, among others (Van der Wurff 1999: 241-242, Moerenhout & Van der Wurff 2000: 518-527, 2005: 92-96, 100-105). This again shows how difficult it is to make generalizations about the diachronic nature of clauses.

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Appendix

The supplementary materials for the papers gathered in this Special Issue can be accessed via the following link to the Github repository: <github.com/IkerSalaberri/Supplementary-materials-for-Special-Issue-Comparative-approaches-to-the-DB-of-clause-types-.git>. The distribution and use of the appendix data are licensed, upon publication, by a Creative Commons Attribution 4.0 International license.