Linguistic structures in social interaction

Moving temporality to the forefront of a science of language[*]

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In this introductory paper to the inaugural volume of the journal *Interactional Linguistics*, we raise the question of what a theory of language might look like once we factor time into explanations of regularities in linguistic phenomena. We first present a historical overview that contextualises interactional approaches within the broader field of linguistics, and then focus on temporality as a key dimension of language use in interaction. By doing so, we discuss issues of emergence and its consequences for constituency and dependency, and of projection and its relation to action formation within and across languages. Based on video-recorded conversational data from French and Garrwa (Australian), we seek to illustrate how the discipline of linguistics can be enriched by attending to the temporal deployment of patterns of language use, and how this may in turn modify what we understand to be language structure.

Keywords: interactional linguistics, temporality, emergence, projection, French, Garrwa

1. Just in time: Aspirations for a journal of interactional linguistic research

This new journal, *Interactional Linguistics*, emerged from a growing recognition that research concerning the structure and organisation of language as it is used in social interaction continues to grow in stature within the language sciences. As we show in this inaugural issue, the central concerns of linguists working from an interactional perspective converge with the central concerns of theories of lan-

guage more generally – why are languages the way they are; how can the universal or very widespread features of human language be explained; how can the diversity of languages be explained – yet these concerns are broached from the perspective of social interaction as the primary habitat of language use. To date, research presenting linguistic analyses from an interactional perspective has tended to be published in pragmatics and discourse analysis journals rather than in journals more centrally concerned with syntax, morphology, typology and phonology. Programs of research taking an interactional approach, often including a range of different languages, have tended to be published in edited books such as Heritage & Sorjonen 2018; Maschler et al. 2020; Ono & Thompson 2020; Sorjonen et al. 2017.

While the idea of a journal showcasing new research emerging from studies using interactional data had floated around for a number of years, the current journal had its advent at a meeting of interested linguists held at the 2019 International Pragmatics Association conference in Hong Kong. There it was agreed that it was time to launch a specialised journal that could showcase latest advances in the study of language in social interaction and develop an inclusive environment for the dissemination of such research. Therefore, in *Interactional Linguistics*, we embrace this wide scope so as to explore the use and functioning of linguistic structures (from sounds to longer stretches of talk) in social interactions of all kinds, be it within a single language, comparatively across languages, or in multilingual interactions. While this journal does not prescribe a particular approach to data collection and analysis, its focus is on research studying language in authentic everyday social encounters.

What does this mean in practice? Understanding language use as fundamentally interactional in nature implies locating it in the organisational infrastructure of social interaction as it plays out in real time. Rather than basing its view of linguistic structure on normative intuitions or decontextualised formal patterns, an interactional approach is concerned with linguistic structure deployed as part of the on-line temporal unfolding of turns at talk and of the related actions they implement. These temporally bound trajectories build on two fundamental organisational principles: emergence and projection. Linguistic trajectories *emerge* in time step-by step and *project* possible (or even probable) next items. It is this integration of *temporality* into the analysis of linguistic structure that sets interactional approaches apart from most other approaches to language. Thus, a key question is: *what might a theory of language look like once we factor time into explanations of regularities in linguistic phenomena?* This journal aspires to be a forum for empirical research furthering the development of such a theory.

In this paper, we first present a historical overview that contextualises interactional approaches within the broader field of linguistics (Section 2). We then focus

on *temporality* as a key dimension of language use. We specifically discuss issues of emergence and its consequences for constituency and dependency (Section 3), and projection and its relation to action formation within and across languages (Section 4). Using data from French and Garrwa (Australian), we seek to illustrate how the discipline of linguistics can be enriched by attending to the temporal deployment of patterns of language use, and how this may in turn modify what we understand to be language structure. We conclude with avenues for future research (Section 5).

2.   Where does interactional linguistics fit within linguistic theory?

We understand interactional linguistics as a linguistic approach that is concerned with exploring "the structure and organization of language as used in social inter-action" (Couper-Kuhlen & Selting 2018, p.3). Couper-Kuhlen & Selting (2018, Chapter 1) provide a detailed picture of its relatedness to conversation analysis, pragmatics, and linguistic anthropology (see also Ochs, Schegloff & Thompson 1996). In this section we summarise the development of interactional approaches to linguistics and the features of social interaction that have been shown to shape the structure of language.

2.1   Functional approaches to linguistic structure

As an approach to the analysis of linguistic structure, interactional linguistics can be considered a contemporary development from earlier functional and usage-based approaches to linguistic analysis, such as Cognitive Linguistics (exemplified by work beginning in the 1970s by Ronald Langacker, George Lakoff and Len Talmy – e.g., Croft & Cruse 2004), Pragmatics (e.g., Austin 1976; Grice 1975; Levinson 1983; Searle 1969, 1975), Usage-based linguistics (e.g., Bybee 2010), and 'West Coast Functionalism' (exemplified by the work of Wallace Chafe, John DuBois, Talmy Givón, as well as early work of Sandra Thompson and Paul Hopper, e.g., Hopper & Thompson 1980, 1984). All of these approaches take as their starting point the premise that linguistic structures, be they syntactic, phonological, morphological, or lexical, are shaped by the functions they serve in their actual use.

These approaches all came to maturity in the latter half of the 20th century (mainly in the 1970s-90s) as reactions to the predominance of generative approaches to linguistic theory. They saw as problematic the formal linguistic pre-occupation with only modelling knowledge of language ('linguistic competence') but discarding language use (i.e., 'performance'), as well as its reliance on gram-

maticality judgements and normative views of appropriate linguistic structures. They also pushed back on the Chomskyan notion that cognitive modelling of linguistic structure, at least the parts that constituted 'Universal Grammar', was separate from other cognitive systems, and unrelated to the ways people used language (see Newmeyer 2016, for a recent overview of the differences between formal and functional explanations of language).

Functional and usage-based approaches have also been significantly influenced by developments in descriptive and typological linguistics through the 20th century. Descriptions of languages had been written and published for centuries – if not millennia – prior to the Chomskyan turn in the mid 20th Century. The Western descriptive tradition generally took grammatical notions from classical languages such as Latin and applied them to analogous categories in other languages. While problems with the comparability of linguistic structures across languages have been well-documented, the use of a common metalanguage in language description has enabled comparisons of constructions across languages, resulting in typological observations about the ways in which languages are similar to and different from each other (e.g., Croft 2016; Haspelmath 2010). Such typological work itself is often descriptive, documenting generalisations about linguistic diversity and universality, and avoiding theoretical claims about the nature of language (Dixon's 'Basic Linguistic Theory' (Dixon 2010) is a key example of this approach; see also Dryer 2006).

Generative and typological approaches both seek to capture generalisations about what is similar and different across languages to better understand the workings of human language. However, interactional linguistics has argued that linguistic 'universals' in the typological sense, however, are not reflections of an adaptive feature of human cognition specific to language, but rather are evidence of the kinds of common environmental (including social and embodied) concerns, and species-specific cognitive capacities that have led humans to adopt similar communication strategies through language. Diversity is viewed as a natural consequence of human spread and cultural divergence (Evans & Levinson 2009). Dingemanse et al.'s (2015) cross linguistic study of the repair initiator *huh?*, which occurs in similar phonetic form for initiating repair in a huge diversity of languages, is a powerful illustration of this.

The increase in language descriptions developed by (mostly) European and North American linguists in the 20th Century, written in a common metalanguage, also led to a reflection on the hegemony of European languages, and English in particular, as the foundational sources of models of linguistic structure.[1] With its focus on features of social interaction that are theorised to be common

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1. See Evans & Levinson (2009) for a critique of language universals for this and other reasons.

across humans, interactional linguistics is well equipped to identify so-called 'universals' while accounting for linguistic diversity across the languages of the world.

Typological and usage-based linguistics have a history of convergent interests. Indeed many foundational usage-based/functional linguists (e.g., Joan Bybee, William Croft, Sandra Thompson, Tom Givón and Paul Hopper) are also well known for their descriptive and typological work. Their focus on empirical data and descriptive claims directed them to seek explanations for linguistic structure from outside of the linguistic system.[2] While maintaining a typologically informed perspective, these linguists departed radically from the generative linguistic program, using evidence from texts (initially written or spoken, and primarily monologic) to identify patterns of language use in different discourse genres, and to begin to build explanations for typological generalisations in terms of the ways people used language in the production of discourse. Some early examples of this work include Hopper & Thompson (1980) on transitivity, Hopper & Thompson (1984) on nouns and verbs as lexical categories, Du Bois (1987) on ergativity, Payne (1990) on verb initial languages, Mithun (1992) on 'basic' word order. In recent years, some of these explanations have become distinctly interactional, or dialogic, in nature (e.g., Traugott 2008).

While this work took language situated in discourse as its starting point, its approach to the data remained principally focused on completed and transcribed texts, thus viewing linguistic data well after the fact of production and often in written form as a result of transcription. This was certainly a consequence of the technology of the time. While audio and video/film recordings were possible throughout the 20th century – and indeed were used by pioneers of the study of talk-in-interaction such as Charles Goodwin (e.g., Goodwin 1981) – it was a laborious task to connect subsequent transcriptions back to the recordings. The result created an inevitable distance between the recording – the primary data under analysis – in which language is produced in real time, and the transcription – a rendering of the recording for the purpose of analysis. If, as a researcher, one is more frequently engaging with the text-based rendition of the recording rather than the recording itself, it is unsurprising that the view of linguistic structure as product rather than process remains entrenched.

Recent advances in recording, transcribing and annotating technology have revolutionised the way interaction can be studied. In the 21st century, we have been able to analyse high quality video and audio recordings of naturally occurring interactions between multiple people more directly, as transcriptions and

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2. This indeed was the trajectory of Mushin's development. Her first publication was a typological study of Australian language question words (Mushin 1995) and she has published on the typology of second position clitics in Australian languages (Mushin 2005, 2006, 2018a).

annotations can now be directly linked to recordings, enabling immediate play-back.

2.2 The study of language use in social interaction

In 1996 a foundational volume called *Interaction and Grammar* (Ochs, Schegloff & Thompson 1996) was published. This was a collection of studies that brought together three disciplines – functional linguistics, linguistic anthropology and conversation analysis – to explore grammar as

> …part of a broader range of resources – organizations of practices, if you will – which underlay the organization of social life, and in particular the way in which language figures in everyday interaction and cognition. In this view, the involvement of grammar in such other organizations as those of culture, action and interaction has as a consequence that matters of great moment are missed if grammar's order is explored as entirely contained within a single, self-enclosed organization.   (p. 2–3)

As noted in the above quote, the social interactional 'turn' in linguistics not only benefitted from advances in data collection and transcription methods, but centrally built on the concepts, methods and findings generated by more than two decades of research in conversation analysis. Some of the most relevant findings include the organisations of turn taking (Sacks, Schegloff & Jefferson 1974), action sequences (Schegloff 1968; Sacks 1987), action formation and ascription (Schegloff 1996a), as well as the interplay between linguistic and embodied behaviours in achieving social interaction (Goodwin 1981). Drawing on these findings, interactionally oriented linguistics have been able to develop insights into language structure as temporally organised and contingent on local context which can be identified through observations of recorded behaviour. This research thus distinguishes itself from contemporary functional, typological and usage-based linguistics by focusing on language as it is embedded *in situ* in naturally occurring social interactions, considering social interaction as "the primordial site for the use and the development of language" (Schegloff 1996b), and thus the context in which grammar is shaped.

A significant consequence of this was to move *temporality* to the forefront of investigations into linguistic structure (Auer 2000; Goodwin, 2002; Hopper 2011; Deppermann & Günthner 2015; Pekarek Doehler et al. 2015). Since its origins, modern linguistics has stressed the temporal nature of the linguistic sign (De Saussure 1972[1916]). However, as we have outlined above, the primary focus of linguistic research has been on the static, synchronically unchanging (yet diachronically developing) set of rules, forms, and/or form-function mappings

understood to represent the linguistic knowledge that individuals bring to the use of language. Various lines of usage-based research have called into question linguistic models that abstract language from its actual use and have provided ample evidence showing that language (and speakers' knowledge of it) is highly flexible, adaptive and contingent upon the local circumstances of its use (e.g., Hopper 1987; Langacker 1991; MacWhinney 1987). This body of research stresses that linguistic structure emerges from frequent combinations of units in use, a common theme in studies of grammaticalisation (e.g, Bybee 2010; Hopper & Traugott 2003). Interactional linguistics in turn foregrounds the fact that language use is fundamentally interactional in nature.

Importantly, it is now clear that frequency itself depends on social-interactional factors. Speakers' recurrent confrontation with precise local interactional environments and needs – as well their interlocutors' responses to their ways of talking and acting – may reinforce these ways or else weaken them. While there is growing evidence to date from both sociologically and psychologically oriented research that recurrent interactional experience grounds the longitudinal development of resources and procedures put to work by individuals (Berger & Luckman 1996; Clark 1996; for a recent discussion see Deppermann & Pekarek Doehler 2021), there remains still much to be discovered as to what social-interactional factors affect in what ways the frequency of use that may lead to the entrenchment of speaker's practices, and may ultimately result in chunking, routinisation and grammaticalisation.

The structuring effect of social interaction on language has been prominently put forward by usage-based models of child acquisition (see, e.g., Tomasello 2003; cf. Vygotsky 1962), by conversation analytic research into second language acquisition (Eskildsen 2012; Pekarek Doehler 2018), as well as by praxeological (Ochs, Schegloff & Thompson 1996; Schegloff 1996b) and dialogic (Linell 1998, 2009) conceptions which take language and social activity to be mutually constitutive. In research specifically concerned with grammar-in-interaction, ample evidence has been provided for how speakers deploy linguistic resources for dealing with the basic organisational principles of talk-in-interaction, i.e., the sequential-temporal deployment of turns and actions as well as the accomplishment, the coordination and the interpretation of social actions (see the early work by Duranti & Ochs 1979; Goodwin 1979; Fox 1987; Lerner 1991; Ford 1993). The label *Interactional Linguistics* (cf. Selting & Couper-Kuhlen 2001) is often used to refer to just this line of research (see Couper-Kuhlen & Selting 2018 for a recent comprehensive overview).

Key to such an approach is the understanding that social interaction rests on social coordination. Social coordination requires minute real-time mutual adaptations among participants and moment-by-moment synchronisation of their

respective conduct. Such coordination therefore centrally puts time into play: Temporal trajectories of actions are adapted in the very course of their production, are closely monitored for the production of responsive actions, and are both shaped and attended to in ways that allow anticipation of their course as well as of relevant next actions. As a resource for doing social interaction, linguistic structure may, to a degree that remains to be precisely determined, itself be adapted to and structured by that temporality (cf. Schegloff 1996b on temporally sensitive grammar).

To summarise, understanding language use as fundamentally interactional in nature means locating it in the organisational infrastructure of social interaction. Linguistic structure in interaction, because it is deployed in building turns at talk, is inextricably tied to the on-line temporal trajectories of turns and of the related actions these turns implement. Such trajectories build on two fundamental organisational principles: emergence and projection: Just like turns, syntactic trajectories *emerge* step-by step, and can be expanded, revised, aborted or co-constructed; just like the trajectories of turns and actions, syntactic trajectories *project*, at precise moments in time, possible (or even probable) next items, and, thereby, make their end-points anticipatable, typically as possible end-points of turns at talk. In the next section we examine how these principles impact our understanding of linguistic structure, thus supporting the development of an interactionally-grounded theory of language.

3.   Emergence, constituency and dependency

The emergent nature of grammar has prominently been put forward in the work of Paul Hopper (1987, and subsequent publications). Hopper (2011: 42) notes: "We must view utterances as a form of behaviour that unfolds in time, produced by a speaker in reference to listeners whose ongoing ratification of the utterance as it develops is inseparable from the act of production". Similarly, Auer (2000, 2005, 2009) foregrounds the on-line deployment of syntax. Both emphasise that the grammar of a turn *emerges* in real time and is processed in real time. This means that syntactic patterns can be co-constructed by more than one participant, can change trajectories before completion, can be extended beyond a first completion point, or retrospectively repaired – and this can all happen contingently on co-participants' conduct. This has been evidenced in earlier work such as Lerner's (1991) study on how conversationalists co-construct compound patterns such as 'if-then' clauses, and C. Goodwin's (1979) account of how a speaker may adapt a sentence-in-progress in response to co-participants' actions. More recently, emergence has gained much attention as it applies to the *incremental* design of turns

(e.g., Schegloff 1996b, 2000; Fox, Ford & Thompson 2002; Couper-Kuhlen & Ono 2007; Luke, Thompson & Ono 2012), as illustrated in the following segment, cited in Schegloff 2016, p. 243):

Extract 1.

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Don:  Okay then I gotta call somebody else. right away.
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Here, the speaker produces a syntactically complete unit, ending on final falling intonation with *else*, yet then extends that unit by adding the syntactically fitted *right away*. The syntactic trajectory of the turn at talk hence emerges in real time. Grammar in use is thus an object of continuous and locally contingent 'bricolage' on the part of speakers; and such continuous local adaptation in turn may lead to routinizations of frequent combinations in use (Couper-Kuhlen 2011). As we will see below this has profound consequences for understanding key properties of language, such as the grammar of complex sentences.

The shape of turn increments such as the above has been shown to be sensitive to overall grammatical patterns in individual languages (e.g., Couper-Kuhlen & Ono 2007; Luke, Thompson & Ono 2012). In Extract (2), from a bilingual Garrwa/Kriol[3] conversation, we see an emergence of linguistic structure that is produced incrementally by two different speakers. Kate and Daphne have been talking about an upcoming trip to a nearby town. Kate is planning to go, but Daphne is not. At line 1 Kate mentions that some collective of people are going to take her out of town to hunt for bush food, something Kate has been wanting to do.

Extract 2.
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```
1   Kat:  ↓D̠ey: godda g̠o: hh-hh, u-d↑k̠uyu jangan'
                They've gotta go        kuyu ja=ngana
                                        take FUT=1sgACC
2   Kat:    =yalu h̠unting:.
              yalu hunting
              3plNOM
              They're going to take me hunting
3           (3.0)
4   Kat:  Hun̠ting:=↑h̠un[ting.
5   Dap:             [K̠unybana   yaj̠ina.
                      Kunyba-na yaji-na
                      good-LOC    thing-LOC
                      (At) a good place
6           (2.3)
7   KS:   (Ja) w̠adamba jangana   ya̠lu, w̠arrngunanyi
              wadamba ja=ngana   yalu   warrnguna-nyi
              feed    FUT=1sgACC 3plNOM goanna-DAT
              They're going to feed me goanna,
```

3. Garrwa is a Northern Australian language of the Garrwan family (Mushin 2012). Like many Australian languages, children have not been learning Garrwa as a first language for several decades, and the community generally uses a local creole variety (a dialect of Kriol – (Dickson, 2021). Even among fluent Garrwa speakers such as those recorded here, conversational language tends to switch between these languages.

```
8        =nyin:bu̲nyi.= *k̲ang:a̲rroo-nyihh.*
          nyinbu-nyi    kangaroo-nyi
          echidna-DAT  kangaroo-DAT
          echidna, kangaroo.
```

Kate's turn in lines 1–2, starts in Kriol but then restarts in Garrwa *kuyu jangana yalu hunting* 'They're going to take me hunting'. This is a syntactically, prosodically and pragmatically complete clausal utterance and is followed by three seconds of silence (line 3). Kate's repetition of 'hunting' in line 4 without adding anything more is further evidence of the completeness of her action. She redoes the final part of her prior turn here, possibly as a reaction to a lack of recipient response.

Kate does not specify who will take her hunting, but Daphne shows no sign of having trouble with this referent.[4] Indeed her turn in line 5 – a noun phrase with locative case marking on both nominals *kunyba-na yaji-na* 'at a good place' – is evidence that she does know at least the set of people who are likely to be taking Kate hunting because with her turn she displays her knowledge that not only will those people take Kate hunting, but the kind of places they are likely to go. Daphne's turn thus incrementally adds a locative adjunct to the same clause that was begun by Kate and in so doing implements an independent action, providing an assessment of the location of the hunting that is likely to result in a successful hunting trip. Kate's subsequent turn in lines 7/8 aligns with this assessment by listing the kinds of good bush food that she will be able to eat with these people – the sort of people who know how to find a 'good place' for hunting.

Daphne's phrasal constituent in line 5 can only be understood as an emerging and cooperative building on Kate's initial claim that people were going to take her hunting. Thus Example (2) illustrates that for Garrwa speakers, incrementally adding a phrasal constituent (a noun phrase marked with locative case in Garrwa) extends the boundaries of the clause-so-far, so that what in retrospect could be analysed as a clausal structure is in fact patched together collaboratively on the fly.

The existing work on incrementation in interaction provides ample empirical evidence to demonstrate that the basic units of much linguistic analysis (i.e., clauses and phrases) may be usefully understood as situated interactional accomplishments that emerge in real time. This local emergence not only destabilises any static notion of 'units' – be they grammatical (such as the NP, Ono & Thompson 2020, or clause, Ewing 2019; Thompson 2019) or interactional (such as the turn constructional unit, Couper-Kuhlen & Selting 2018), but also may lead

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4. In these conversations, person reference is often left unspecified. This is a consequence of the vast amount of shared knowledge that speakers like Kate and Daphne, who live in small, highly-connected communities, develop, and is something that has been attributed to person reference in conversation among Aboriginal Australians more generally (Blythe 2009; Garde 2013).

to the routinisation of interactionally configured patterns, such as left dislocations (Geylukens 1992) or extraposition (Couper-Kuhlen & Thompson 2008), which may have "grown out of, or emerged […], from the sequential routines of mundane conversational interaction" (Couper-Kuhlen 2011, p. 424). Conversational routines may not only entail the sedimentation of frequently co-occurrent items or item-types as structural patterns (see also Pekarek Doehler, forthc.; Pekarek Doehler et al. 2015), but also to the 'emancipation' (Haiman 1998) of pieces from larger patterns. In this way, patterns of emergence can be seen as the foundation of grammatical change.

One example of this process comes from recent work on insubordination, i.e., "the conventionalized main-clause use of what, on prima facie grounds, appear to be formally subordinate clauses" (Evans 2007, p. 367). Traditional linguistic approaches have presumed that formally subordinate constructions have some hierarchically organised relationship with a main clause, even if that clause is not overtly expressed. Interactional approaches, however, recognise that, while in some cases clause-combining can be seen as emergent product of social interaction (cf. Lerner's 1991 compound TCU's), in other cases the incrementally added clauses appear to be free-standing, despite their starting with conventional markers of subordination (see Ford 1993 on free-standing *because*-clauses).

We illustrate this with an example from French where a relative clause is added post-hoc, so that what formally appears as a [main-clause + relative clause] pattern in fact emerges gradually along the temporal unfolding of turns and actions (Stoenica 2020; see also Clift 2007 for English).

Extract 3.
'Que Romain il nous a parlé' [Pauscaf 18]

```
01 DAV:    j'ai regardé le film safe.
           I've watched the movie Safe
02         *≈(0.6)*              #1
   geb     *raises his eyebrows*
   geb      ≈gazes into empty space
            toward his left ---> 1.04
```


#fig. 1

```
03 DAV:    que Romain  il nous a parlé une fois.=
           that Romain he has once told us about
04 GEB:    =euh≈avec [euh
               with
           --->≈gazes at DAV (till the end of the excerpt)
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05 DAV:                [avec eu[:h
                        with
06 GEB:                        [Statham?
07 DAV:   Statham ouais=
          Statham yeah
```

In Example (3), David informs Geb about having watched the movie *Safe*. His turn reaches a complex transition relevance place (Ford, Fox & Thompson 1996) marked by syntactic and pragmatic completion and final (here: falling) intonation. In line 03, however, David extends his turn, adding a relative clause as a post-gap increment (Schegloff 2016). Note that the relative pronoun here does not conform to traditional grammatical descriptions, as it does not carry indirect object case marking: *dont* 'of which' would be the standard form, not *que* 'which/ that'.

Decisive for understanding the working of the relative clause is the recipient's embodied conduct during the gap at line 02. While David's informing is met with silence, the recipient Geb displays trouble in an embodied manner (l. 02, Figure 1): He raises his eyebrows, which may suggest thinking or mark a question (cf. Chovil 1991), and deploys an out-of-focus 'middle-distance' look, displaying a 'thinking face' (Goodwin & Goodwin 1986, p. 58) that suggests cognitive search. Sequentially, then, David's added-on relative clause can be heard as his response to Geb's display of trouble. By adding a relative clause, Geb elaborates on the referent *'Safe'* that he had mentioned in his informing, and by the same token displays his orientation to David's facial expressions as indexing a problem with referent recognition. So, the incremental adding of a relative clause to a turn-so-far provides one practical solution for favouring referent recognition while minimising the disruption of repair by presenting the repair segment as syntactically continuous with the stretch of talk containing the repairable (Stoenica, Pekarek Doehler & Horlacher 2020, p. 318). In this light, relative-clause incrementation can be understood as a grammatical practice that allows speakers to maximise the compatibility between the principles of intersubjectivity (i.e., establishing mutual understanding) and of progressivity (Heritage 2007). Ultimately, thereby, two pragmatically independent actions are presented as linked (Stoenica 2020).

Observations like the above have potentially profound implications for our understanding of many features of language such as subordination (see also the papers collected in Laury & Suzuki 2011 and Maschler et al. 2020 on subordination and clause-combining in talk-in-interaction). Example (3) highlights that speakers do not simply implement pre-fabricated clause combinations, but that these may result from local adaptations in real time. At the same time, these local adaptations in turn prominently display how speakers orient to the existence of schematic clause-combining patterns when extending their own or others' turns. Most importantly, examples like this challenge the notion of relative clauses

(among other clause types) as inherently subordinate to a main clause. The body of work on free-standing relatives and other 'subordinate' clause types[5] shows that these are treated by both speakers and recipients as interactionally relevant units of talk that accomplish a precise action in their own right and with their own sequential implications. Their insubordinate status is hence reflected in their praxeological autonomy, in addition to the fact that they are not projected prosodically by prior talk. This matches earlier suggestions that syntactic independence vs. subordination may range on a continuum (Foley & Van Valin 1984; Matthiessen & Thompson 1988; Günthner 1996; Auer 1998), and that some occurrences of clauses that are marked as dependent are not part of clause-combining patterns at all but are cases of insubordination (Evans 2007). The specific contribution of the analysis of such patterns from an interactional vantage point lies in the fact that it can broaden our understanding not only of the spread/frequency of these patterns, but also of their functional motivations.

4.   Projection and word order typologies

Projection is the counterpart of emergence in the temporal unfolding of talk and actions. Social coordination is possible based on projection of one's own turn- and action-trajectories and anticipation of the trajectories of others. This was prominently put forward in Sacks, Schegloff & Jefferson's (1974) classic paper on turn-taking. They note: "Unit-types project, from beginnings, features of their construction, their direction and what it will take to complete them" (p. 719) – and that is exactly what allows for precision timing in turn-taking.

Projection operates on various levels of social interaction (Hayashi 2004; Auer 2005; Streeck & Jordan 2009). At the level of actions, a question, for instance, projects an answer as a relevant next action (Schegloff 1968). At the level of embodied conduct, gesture, gaze posture and the manipulation of material objects may foreshadow possible turn- or action-trajectories as well as possible next actions (Streeck 2009; e.g., Mondada 2007 on the role of pointing in turn-taking; Floyd et al. 2016 on the role of holds in sequence organisation). *Grammatical projection* relates to the fact that, at any point in its progression, the grammatical trajectory of an utterance – including its prosody – foreshadows what is likely to come next. Prosody may project turn-continuation at points of syntactic completion (Barth-Weingarten 2009) or foreshadow the occurrence of a next item in a list (Selting 2007). Non-lexical vocalisations, such as clicks, may foreshadow

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5.   e.g., free standing *if*-clauses – Laury 2012; Lindström, Laury & Lindholm 2019; free-standing *because*-clauses – Ford 1993; Couper-Kuhlen 1996, 2012; Günthner 1996.

incipient actions (Ogden 2013, Reber 2012). Most centrally, grammatical constituents have projective properties: in many languages, the occurrence of a determiner, for instance, makes expectable the occurrence of a noun (or an adjective + noun combination) as a next, the occurrence of an 'if'-clause makes expectable a 'then'-clause as a next (Lerner 1991), and so forth.

4.1   Grammatical projection and the social coordination of actions

Word order is key for configuring grammatical projection but may also pertain to action projection. In this way linguists analysing interaction have retained the typologists' interest in accounting for differences in word order patterns across languages, considering how the placement of predicates, for example, early or late in turn construction units (TCUs), has consequences for how participants are able to anticipate the trajectory of the current speaker's turn and action underway, and thus plan for their own contribution. Existing evidence suggests, for instance, that turns in which the predicate is placed early more readily provide the necessary information to allow for actions to be ascribed, but at the same time only weakly project turn completion while turns in which the predicate is placed late do not allow early projection for action ascription, but may strongly project turn completion (e.g., Auer 2005; Tanaka 2005)

Linguistic forms that enable both grammatical and action projection are often found early in turns, often at the beginning (see Schegloff 1996b and Deppermann 2013 on the importance of turn-beginnings). Sacks et al. (1974, p. 709) noted that for English, interrogative words occur sentence initially, thus projecting that the upcoming turn will likely be a question, and very possibly select a particular recipient as next speaker, etc. Even in languages where interrogative words are not fixed in initial position, there is some evidence that the variation in placement may have interactional consequences: turn-initial vs. turn-final placement of question-words in French affects response timing due to early vs. late projection of the turn's action, and hence early vs. late recognisability of the relevant next action, i.e., an answer (Pekarek Doehler 2020).

The organisation of syntax for projection applies to constructions larger than the word. For example, work across several languages has shown how the initial parts of canonical cleft constructions can become sedimented as interactional 'projector constructions' (e.g., Hopper & Thompson 2008 for English; Günthner 2006 and Günthner & Hopper 2010 for German; Maschler & Fishman 2020 for Hebrew; Pekarek Doehler 2011 for French). Here is an illustration:

Extract 4.

Hopper & Thompson (2008, Example 7)

```
ROY:        What you oughta do though ~Mar,
            ... [cook] all the fish.
MARILYN:        [Hm].
ROY:        .. Cause --
            .. well,
            we won't use it,
            .. if you don't cook it.
```

The *wh*-piece (in bold) projects more to come, but the subsequent stretch of talk is not syntactically tied to that piece: The *wh*-piece functions as a projector construction framing upcoming talk in some way (e.g., alerting the recipient to an incipient directive). The studies of English, German, Hebrew and French cited above all converge on showing that the initial parts of what are traditionally considered bi-clausal patterns occur in talk-in-interaction recurrently as syntactically independent pieces, that is, stretches of talk that are not syntactically related to subsequent talk; these pieces function as routinised resources for dealing with a central exigency of social interaction, namely projecting what comes next.

Constructions commonly associated with stance-taking seem to have sedimented in similar ways as projecting devices. Equivalents of 'I don't know' have been documented to not only function as epistemic hedges or parentheticals (e.g., Kärkkäinen 2003; see also Thompson & Mulac 1991), but also to accomplish interaction-organisational work, often in concert with precise bodily conduct (Pekarek Doehler 2019), for instance as a devices prefacing dispreferred[6] actions (Keevallik 2011; Helmer et al. 2016; Pekarek Doehler 2016, for Estonian, German and French, respectively). This is illustrated in Example (5) where Pat inquires why Marie said that he writes slowly (l.1). While Pat's question anticipates an answer as a relevant next action, Marie's delayed response (l.3), prefaced by both *ben* 'well' and *chais pas* 'dunno', cannot count as an answer as it merely reiterates that Pat writes slowly. That is, it offers a dispreferred response:

Extract 5.

Pauscaf_13_cam3_l. 68_ 0:01:05.5 t'ecris lentement

```
01 PAT    qu'est-ce qui te dit#quej'suis pas rapide?*
          what tells you that I'm not fast
     mar  >>gazes at PAT, smiling*
```

---

6. For an overview of preference organisation in conversation analysis, see Pomerantz & Heritage 2013.

```
  fig                      #fig.2
02        *&(0.5)
   mar    *gazes down, smiling--->
           &shifts back in her chair--->
03 MAR    ben chais#pas t'écris*&le:nteme:nt.
          well dunno    you write slowly
          ------------------->*gazes at PAT,
                               smiling--->>
          -------------------->&
```



```
  fig                   #fig.3
04 PAT    mais- tu m'as posé des questions.
          but    you asked me questions
```

The dispreferred nature of the response is further indicated by the speaker's gaze aversion during the delivery of *ben chais pas* (see Kendrick & Holler 2017 and Rossano 2012 on gaze aversion with dispreferred responses). More than being an epistemic hedge, the *chais pas* (here: in conjunction with the *ben*) projects that the response will not comply with the terms of the question. This concurs with Auer's argument that "Grammar is a conventionalized set of formal ways of making projections possible" (Auer 2009: 180): As a basic feature of human social

interaction, projection leaves its imprint on the structures of the resource used for such interaction.

4.2   Typological issues in projection

So, once we focus on the production of talk in real time, the order of linguistic elements can be seen to help or hinder the projection of an action underway and possibly of the relevant next action. This is one way in which speakers use grammar as a resource for the social coordination of their mutual actions. Languages naturally differ in how they configure grammatical projection. Research on projection and ordering preferences that include the presence and absence of explicit references to arguments and predicates is enabling the development of new typologies of word order. These are ones that are embedded in an understanding of the temporality of linguistic structure. Under this approach, SVO and verb second languages, such as English and German respectively, have also been classified as 'early projecting' languages, while verb final languages like Japanese have been classified as 'late projecting'. These characteristics of ordering have been shown to have predictable consequences for other features of turn construction.

For example, Japanese is usually described as a canonical example of an SOV language according to traditional typological methods for determining word order. However, Tanaka (2005) shows that in actual conversation, predicates regularly occur early in turns, and subsequent final particles contribute to the retention of a strong projection of both action and turn completion. That is, there is no evidence that Japanese speakers expect predicates to be preceded by arguments, and indeed this appears to be the preferred format when the trajectory of conversations is running smoothly.

Furthermore, traditional linguistics of Japanese might view as problematic the placement of predicates and their inflectional categories, like tense and negation, at the ends of sentences because it delays the expression of semantic content relevant to the projection of particular actions. However, as Ono & Thompson (2017) show, the ability for Japanese speakers to infer (rather than overtly express) arguments and other constituents from predicates enables early placement of predicates within turns and TCUs, avoiding delays in articulating important grammatical information such as negation, which in Japanese is a verb inflection.

While the number of languages which have been considered comparatively in the development of a typology of projection are few, the observations made about the consequences of projection for the placement of predicates and their

arguments in an unfolding turn allow for a principled comparison with more languages. We conclude with another example from Garrwa, an Australian language that was classified in the World Atlas of Linguistic Structures (WALS) as having no dominant word order (Dryer 2013), although some linguists have considered it to have a VSO order, based on the relative frequency of verb-initial clauses in elicited data and transcriptions of monologic texts (e.g., Belfrage 1992; Laughren et al. 2005). Examples (6) and (7) illustrates the kinds of clausal orders that have led to this analysis.

Extract 6.
daba=yi juka-wanyi nanda bajangu
hit=PAST boy-ERG   that   dog
The boy hit the dog (elicited: Belfrage 1991 Field Notes)   (VSO)

Extract 7.
larrkimba=yili   yalu   bujuwa
cook.in.ground.oven=HAB 3plNOM waterlily.root
They would cook waterlilies   (3.9.03.2.KS) (VSO)

However, in a number of publications, Mushin (2012, 2014, 2018b) has argued that in practice (i.e., in conversational use), observed regularities in ordering appear to be organised around a 'core' consisting of a combination of a 'second position' pronoun (usually subject or object) and a tense/aspect/modality (TAM) clitic, preceded by an 'initial' constituent. We see this structure in (7) above where the habitual clitic =*yili* and the 3rd person plural pronoun *yalu* are preceded by an initial verb.

In placing indices of argument structure and TAM in second position, Garrwa thus resembles so-called 'verb-second' languages like German, where the finite verb must occur in second position. Verbs often occupy core-initial position, especially in narration, where there is significant topic continuity resulting in pronominal realisation of arguments, but Mushin (2012) shows that nouns, demonstratives, and certain particles (negative *miku*, interrogative words like *wanya* 'what/who' and *wanjawa* 'where', and contrastive *ngala*) can also occur in initial position, as in (8), where the 2nd position pronoun + TAM clitic *nurri* is preceded by a nominal *mali* 'flood', and (9), where the 2nd position TAM+pronoun *jangambala* is preceded by an interrogative word *wanjawa* 'where'.

Extract 8.

mali nurr=i   yabimba=yi nana-ba,   walkurra mali
flood 1plExclNOM=PAST make=PAST that=DEIC big   flood
we had a flood over there – a big flood.   (4.5.01.5.KS)

Extract 9.

wanjawa ja=ngambala   jilajba munganawa
where   FUT=1plInclNOM walk   next.day
Where are we going tomorrow?   (15.5.01.1DG)

There is not the space here to provide a detailed account of the interactional contingencies that result in particular word orders in Garrwa conversation.[7] However, it is clear that initial position, which is demarcated in clausal TCUs by the second position cluster, provides an important site early in a TCU for projecting the action trajectory of that turn. The placement of the verbal predicate either in initial position or just after the second position cluster suggests a pattern whereby Garrwa speakers locate their predicate as close to the start of the turn as possible while preserving the second position cluster as the site for most 'grammatical' indices (represented in traditional typological approaches in terms of categories like person, number, argument type (e.g., A, S, O), tense, aspect, mood and modality).

We can see this grammatical patterning playing out in conversation in the following extract from an interaction between three older women – Hilda, Kate and Daphne – who were language consultants working with Ilana on a documentation project. This conversation took place in the office of a school. Although the women are inside, seated at a table (Figure 4), they are able to see the school play area from the office window. The extract comes from early in the recording while the women are deciding what to talk about for the recording. The 'core' (i.e., grammatically initial constituent + 2nd position clitic cluster) of each TCU is underlined.

---

7. The discussion of word orders in Mushin (2012) does not specifically focus on conversation. This work is in preparation.

Extract 10.
20080619IM_01 1'37"- 1'58"

Fig.4

```
1   Hil:   Karu nimbala nanda; jangkurr junu (wah)
           tell 2duNOM   that  language maybe
           (Can) you two tell this story perhaps?
2          (1.2)
3   Hil:   (        ) I ↑come back an (0.5) pack up-.
4          (1.9)
5   Kat:   ↑YANYba=kiyi  ↓bardibardi¿
           talk=IMP       old.woman
           Speak, old woman ((directed at Daphne))
6   Dap:   >Jala wanyi-nkanyi  ↓barri ja=ngayu;  yanyba<
           CONJ what-DAT        DM    FUT=1sgNOM  talk
           (So) why (should) I talk?
7          ↑yangka [ja=ngayu;  ↑yanyba]
           how     FUT=1sgNOM  talk
           How should I talk? (=what should I talk about?)
8   Kat:          [Najba=kiyi nanda     ] ↑bayamuku yalu=nya;
                   see=DIR     like.that   kid-PL    3pl=ACC
                   Look at those kids, them
9          ou:tside; ngala BAja yalu? (.) wanyi   nanda;
                     CONT  play 3plNOM      what   that
           outside. But they're playing.  What is it
10         ↑madamadan yalu  kuyu.
           together   3plNOM bring
           they together are bringing?
11  Dap:   Ye::h.
12         (0.3)
13         Baja yalu  dere.
           play 3plNOM there
           They're playing there
14  Kat:   °·(Yahh)·°
15         (1.0)
16  Dap:   Outside. (.) oud-
17         (0.8)
18  Kat:   Ngala [nyu-
           CONT   3sg?
19  Dap:         [Kularra yalu  nanda baja; kularra.
                  south   3plNOM that  play   south
                  (In the) south they're playing that, (in the) south.
```

Example (10) begins with Hilda walking around the table and moving past Daphne to leave the office to run an errand. As she leaves, she tells Kate and Daphne to do the speaking (lines. 1/3). This turn has a verb-initial core format.

In line 5 Kate uses an imperative construction – a verb followed by the imperative clitic =*kiyi* (another verb-initial core format) to try and recruit Daphne to initiate the conversation topic. Daphne responds in line 6 with a turn that starts with a connecting particle *jala* followed by a core consisting of an initial interrogative word *wanyinkanyi* 'why' followed by a future + pronoun 2nd position cluster that questions why Daphne is being selected as the designated speaker. This core includes the particle *barri* between the initial position and the 2nd position cluster, one of the only forms found to interpolate between these positions. This turn is extended with a second question, switching from 'why should I talk' to 'what should I talk about', again with an interrogative-initial core. Together these questions serve to display Daphne's resistance to being assigned the role of speaker.

As Daphne is expressing this resistance, Kate has shifted her attention from Daphne to what is happening outside the office that she can see through the window (she twists her head around to face the window), and in Line 8, in overlap with Daphne, tells her to look out the window at the children playing outside. This extended turn consists of 4 TCUs. The clausal TCUs in lines 8 and 9 have a verb-initial core. The connecting particle *ngala* in line 9 serves to project that the upcoming TCU is shifting the trajectory of the turn (here from an imperative to observe the kids to a speculation over what they are doing) (Mushin 2018b), while the TCU in line 10 starts with a reduplicated adverbial *madamada* 'together' followed by second position. The interrogative TCU in line 9 *wanya nanda* does not include a verbal predicate but can be translated as 'what is that?'. The formulation *wanya nanda madamada yalu kuyu* 'what is it they together are bringing?' appears to be questioning what Kate is able to see from the window.

As Kate says *wanya nanda* 'what is that' in line 9, Daphne also turns her head to look out the window. In line 11/13, Daphne confirms that she can see the kids playing with a clause that begins with a verb-initial core that echoes Kate's *baja yalu* 'they're playing' in line 9. She then turns back to face Kate and extends the turn first by adding a locative expression 'outside', and then a clausal TCU that specifies in Garrwa that the location is 'south' of where the women are sitting (l. 19). This TCU places the location word *kularra* 'south place' in core-initial position.

It therefore does not appear useful to consider Garrwa word order in terms of the placement of verbs and their arguments. While the clausal TCUs in Extract 10 show a range of orders, we see evidence here of principled and routine placement of grammatical indices like TAM and person/number morphology in second position, prosodically dependent on an initial constituent that appears to serve a projecting function, indicating the way that the upcoming turn advances the trajectory of the interaction underway. As we noted earlier, both interrogative words and predicates are rich in projecting the unfolding action that the turn instantiates as questions or statements, and, as illustrated in Extract 10, these are

common in turn construction. The projective properties of nominals or adverbials placed in core-initial position, as we see in lines 10 (*madamada* 'together') and 19 (*kularra* 'south place'), suggests that Garrwa may align with other 'early projecting' languages like English, Swedish, German and French.[8] We can ask, for example, do Garrwa speakers use the end of a clausal core as a target for a new speaker to display action recognition, repair initiation or self-selection by a new speaker, as speakers of other early-projecting languages have been shown to do? The analysis of Garrwa syntax – and syntax in general – in terms of units of projection allows us to move away from understanding grammar as manifestations of cognitive structures (a pervasive view in more traditional linguistic approaches), to seeing grammar as the routinisation of practices born out of the organisation of social interaction responsive to real time contingencies.

5.   Conclusion

Throughout this paper we hope to have illustrated that the concerns of this new journal centrally relate to historical preoccupations of linguistics: why grammar is organised in the way that it is, how and why languages change over time, how to account for diversity, variation and regularity both within and across languages. Yet, as interactionally oriented linguists, we see these questions as inextricably tied to the embeddedness of language in the time-course of locally accomplished and mutually oriented to courses of action. It is our belief that analysis of language in interaction has already yielded important advances in our understanding of linguistic patterns and their pragmatic workings, by empirically documenting how language use is organically bound to the temporal and sequential organisation of social actions and how linguistic structures deployed in real time work as practical resources for people's meaning-making. We now understand linguistic structure to be acting within the complex multimodal ecology of social interaction, and how, ultimately, such structures grow out of their interactional use and are therefore themselves structured by the very interaction-organisational purposes which they are put to use to.

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8. Projective constructions such as clefts as well as initial placement of constituents have long been associated with information profiles of sentences, separating out 'new' or 'focal' information from what has already been established in the discourse. We showed earlier that such constructions contribute to action formation and action recognition, and we hypothesise that core-initial position in Garrwa clausal constructions serves a similar purpose. This research is underway.

It is exactly in these points that we see avenues for future research: broadening cross-linguistic comparative investigations, intensifying research into the grammar-body interface, and deepening examinations into how linguistic structure emerges from, and in response to, social interaction. While the ambition to uncover how interaction motivates grammar meets questions currently discussed in linguistic typology and studies of grammaticalisation (Traugott 2008), as well as in language acquisition (see MacWhinney 1987, Scollon 1976, Tomasello 2003), it should also help us understand cross-linguistic differences by unveiling how constructions in specific languages map onto generic interaction-organisational principles such as turn-taking or preference organisation.

As we have shown here, once real time is factored in, we start to see how language materializes in use. Social interaction is the primary site of language use, both ontogenetically and phylogenetically. It is arguably also the site where speakers use language in most adaptive ways – often as *bricoleurs* rather than *ingénieurs* (in the sense of Lévi-Strauss 1960, p. 27): Rather than following pre-defined structural plans or implementing pre-fabricated means, they use the means at hand for all practical purposes in locally contingent and ever-adaptive ways. The dynamics of social interaction are simply too complex and unpredictable to be managed with anything else but an adaptive inventory of resources.

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