The temporality of language in interaction: projection and latency

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Abstract

This paper focuses on two basic principles in the dialogical emergence of self-contained linguistic units ('sentences') in interaction: projection and latency. Both are elementary for the synchronization of participants' minds in what I call the online emergence of syntax. **Projection** enables speakers and recipients to predict – on the basis of what has been said so far – structural slots in the emergent syntactic gestalt more or less accurately. **Latency,** on the other hand, relates a new utterance to the structure of the preceding one(s). It links the structure of an emergent syntactic gestalt to that of previous, already complete syntactic gestalts.

I will show that projection and latency can easily be observed in mundane conversational phenomena that happen time and again in everyday interaction. These phenomena provide 'live' evidence of their relevance and are available without experimental elicitation techniques.

Keywords: online syntax, projection, latency, analepsis, co-constructions, terminal overlap, syntactic ambiguity, ellipsis

1.   Introduction

The temporal unfolding of a linguistic unit in conversational language – be it conceived prosodically (intonational phrase), syntactically (sentence), or from the perspective of turn-taking (TCU) – is not always, and perhaps not usually, a single speaker's accomplishment, but rather the outcome of a dialogical enterprise (cf. Linell 2009). It is central to this dialogical enterprise that the minds of the interactants are synchronized, i.e. attuned to and aligned with each other (Schütz/Luckmann 1973). Synchronization in Schütz' sense refers to the participants' inner, experienced time. As such, at first sight it may not appear to be a phenomenon that interactional linguists should or could be interested in; 'inner' phenomena do not seem to be accessible for analysis based on behavioral recordings, which are the empirical basis of interactional linguistics. However, synchronization is not only a mental phenomenon; rather, it is achieved by participants through their actions and hence is based on overt cues perceived by the interactants. It is these cues that interactional linguistics focusses on when dealing with temporal synchronization in interaction.

In the following, I will focus on two basic principles in the dialogical emergence of self-contained linguistic units ('sentences') in interaction: projection and latency. Both are elementary for the synchronization of participants' minds in what I call the online emergence of syntax (cf. Auer 2000, 2009), although their relevance is not restricted to syntax and clearly extends into conversational structure (an issue dealt with in Auer 2005). **Projection** is forward-oriented; it enables speakers and recipients to predict – on the basis of what has been said so

far – structural slots in the emergent syntactic gestalt more or less accurately. Projection hence enables speakers and hearers to answer the question 'what next?' in the online processing of an emergent gestalt. The more hierarchically organized the already produced but yet unfinished utterance is, the more this kind of prediction is possible and likely to be accurate. One of the main functions of what we call 'syntax' for oral language is therefore to make projection possible. Surprisingly, psycholinguistic research on sentence processing has often given priority to a different, although related question, i.e. how subsequent words can be incorporated into already produced syntactic units, sometimes making a reanalysis necessary (cf. Frazier/Clifton 1986, 1997; Crocker 1999). However, this seems to be only half of the issue; online ("incremental") processing is not only about accommodating upcoming items into existing structures, but also about projecting what is likely to come next (cf. Hale 2006, Levy 2011 for a probabilistic approach to structural projection in sentence processing based on experimental data). Cognitively, projections of this kind are important because they reduce the syntactic processing load and thereby set free capacities for semantic and particularly pragmatic processing once the emergent syntactic structure can be more or less anticipated. From an interactional perspective, projection is central because it makes unit completion and thereby (the potentiality of) turn transition predictable.

Latency, on the other hand, relates a new utterance to the structure of the preceding one(s) and in this sense is one of the backward-oriented principles of online processing which helps to explain how subsequent utterances can start in a fast and well-formed way once a speaker has the turn. While projection (in the sense of the term used here) is an indispensable feature of emergent syntactic gestalts, latency links the structure of an emergent syntactic gestalt to that of previous, already complete syntactic gestalts. This concept is therefore needed to analyze how subsequent utterances can make use of previous structures, which they often, but not always do (cf. Auer, i.pr., for more details). Projection and latency may of course interact: in the online emergence of a new structure, reliance on a latently available pattern activated earlier may make projections during the new emergent one possible and stronger that would not play the same role otherwise.

In this contribution, I will show that projection and latency can easily be observed in mundane conversational phenomena that happen time and again in everyday interaction. These phenomena provide 'live' evidence of their relevance and are available without experimental elicitation techniques.

2.   Evidence of syntactic projection in interaction: co-constructions

Perhaps the most striking 'in vivo' evidence of projection in dialogical syntax and the temporal alignment of speakers and hearers are co-constructions, i.e. when a unit initiated by one speaker is completed by another speaker. In the following extract from a routine telephone conversation between a young couple, a case of such co-construction can be found:

(1) GNS11 (courtesy of Inga Harren, retranscribed by P.A.)

```
01  Uwe: is dir grad LANGweilich?
          are you feeling a bit bored right now?
02  Git: =nö::::::; ich? eh?  l?  lAg grad auf_m BETT und hab versucht
            no:::      I uhm w- was lying in bed and was trying
           zu SCHLA:fen;
           to sleep;
03       eh hö hö [hö
04  Uwe:          [h du hörs dich auch n bIschen verdrömelt AN.
                   you do sound a bit drowsy.
05  Git: ja:;
```

```
                 yes;
    06           ich (.) HAB noch nich so richtig geschlafen;=
                 I       haven't really fallen asleep yet;=
    07           =ich glaub ich versuch_s gleich NOCHmal.  [°hh
                 I think I will try again in a moment.
    08  Uwe:                                               [okee.
                                                           o.k.
    09           (0.5)
    10  Git: [ja.
              yes.
    11  Uwe: [ICH bin jetz
              as for me, I'm now quite
    12           ich=bin jetz einglich soweit ganz FIT.
                 I'm actually feeling quite well now.
    13  Git: ↑j[a:=dˀ
             yes y'
    14  Uwe:   [ich=hier:: °hh [will jetz ma sEhen ob] ich das
                I   well        will see now whether I can
    15  Git:                   [du_hÖrs dich auch so AN;]
                                you sound like it;
    16  Uwe:   SAKko krich?
               get the jacket?
    17           un dass ich (hier) die FOtos wegbring,
                 and that I (well) drop off the photos,
    18           un dann: hie:r; (0.5)
                 and then well
--> 19  Git: Üb[en;=Üben;=Üben.
             practice practice practice.
    20  Uwe:   [will ichˀ    (.) will ich ↓Üben Üben Üben.
                I will           I will practice practice practice.
    21           [<<creaky voice, low> gena::u:::
                                        exactly
    22  Git: [↑ja;= ↓gut.
             yes    ok.
    23           °hhhhh vIEl SPASS dabei.
                        have fun with that.
```

Gitte has called her boyfriend for no particular reason (apart from reminding him to pick up his jacket from a friend), and while she is drowsy and in a kind of liminal state between sleep and wakefulness, her boyfriend sounds energetic and awake (as he himself says in line 12). The utterance we want to focus on initially is in line 19 where Gitte produces a sequence of three infinitives (*üben üben üben* 'practice practice practice') in a stepwise declining pitch movement on the stressed and unstressed syllables of the three subsequent tokens until she reaches the bottom line of her pitch range, signaling that the utterance is complete. But the utterance is not just her own but also Uwe's, who is partly its speaker and its presumed author and principal (Goffman 1979). It is Uwe who started the unit in line 18 and marked it as incomplete by the elongations on *und dann* and the hesitation marker *hier*.[1] Gitte seems to take these hesitations as an opportunity for finishing Uwe's utterance in the way she imputes he

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[1] *Hier* 'here' is of course first and foremost a deictic adverbial in German, but it can be used for other purposes as well. Many deictics tend to bleach to become discourse markers, and *hier* is one example of this kind of change (pervasively used by this speaker, e.g. in lines 14 and 17).

might have wanted to,[2] but perhaps also in order to put her own twist on Uwe's turn. Her 'help' is acknowledged by Uwe who repeats her collaborative completion in an affirmative way (line 20). The final complete utterance

```
und dann (hier) üben üben üben
and then [it's] practice practice practice
```

is their joint product, even though Uwe is presented as the utterance's main author/principal.

Co-constructionsof this type (also called collaborations) have been discussed in the conversation analytic literature at length (cf., among others, Lerner 1991, 1996; for German Günthner 2012, Brenning 2013). They provide evidence of projection as a basic principle of dialogical processing: If a second speaker wants to complete a first speaker's utterance, s/he obviously has to analyze ('parse') it syntactically and semantically so as to be able to provide the syntactically correct, fitting element in the right slot at the right moment.[3] This happens very fast and very smoothly, so that it is unlikely that the second speaker only starts to analyze the incoming signal once s/he hears the first speaker run into trouble (even more so as hesitations are frequent but by no means obligatory in collaborations). Rather, the parsing process is likely to start in the first moment in which the current speaker embarks on a new unit production. But co-constructions are not only evidence of online ('incremental') sentence processing, thereby supporting numerous findings in psycholinguistics since Marslen-Wilson's pioneering work (cf. Marslen-Wilson/Komisarjevsky-Tyler 1980, Marslen-Wilson/Tyler/Seidenberg 1978). They also provide ample non-experimental evidence of the fact that this processing works ahead of time; the second speaker is able to <u>predict</u> the next relevant syntactic slot (and in the case of collaborations, also the next semantic slot). The syntactic analysis performed by the recipient therefore must be such that upcoming structural positions are <u>projected</u>, and our analysis of conversational syntax must account for these projections.

Conversational data on co-constructions corroborate the results of laboratory studies, above all those based on the *virtual world paradigm* using eye tracking technology. For instance, eye tracking experiments by Altmann and Kamiade (Altmann, Kamide 1999; Kamide, Altmann, Haywood 2003) have shown that listeners look at a predictable object type in anticipation when they hear a strongly subcategorizing verb such as *to eat* in the sentence *John eats an apple,* while they do not for less subcategorizing verbs.

Analyzing vast collections of co-constructions in conversational language allows us to draw conclusions about how projection works in dialogue. In a large study on German co-constructions that occur before the first speaker has reached a structurally possible completion point, Brenning (2013) shows that there are preferred loci for it. By far the dominant pattern in simple main clauses is what is often called terminal item completion in the literature on English conversations, i.e. the second speaker completes the first speaker's utterance by providing the last word. However, Brenning shows that the decisive cue for the hearer in a co-construction is the **focal accent** slot of the intonation phrase rather than sentence-final position of the item. Since in German (unlike English) the focal accent does not regularly fall on the last word of the sentence, German co-constructions can be used to prove this point. Roughly speaking, in German, if the sentence ends in a non-finite verbal component (in the

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[2] How she can do this, will be discussed below.

[3] This relevance of certain features of spoken syntax as a window into lay participants' syntactic analysis is already noted in Harvey Sacks' lectures: "[...] putting a new completion on an otherwise possibly complete utterance, completing another's incomplete utterance, building an appendor question, those sorts of things all are direct evidence of the fact that hearers are engaged in analyzing syntactically utterances in their course, and have that analysis available as something they can use 'immediately'" (Sacks 1992, I, 654, Lecture 4, Fall 1967).

so-called 'right sentence brace'), the focal accent is on the object preceding this verbal element provided it is a non-pronominal.[4] If there is no such object, and the element in the final ('right') sentence brace is complex, the accent falls on this final brace, but on the pre-final verbal element. If the final sentence brace is simple, it carries the focus accent. Consider the following examples:

(2) Bier (Caipirinha/J. Brenning)
```
((story about a visit to an open air pop festival where it rained a lot))
    01  Ank: naja auf JEden fall,=
            well anyway
    02       =ham wir dann imm(erhin) (-)
             then at least we drank
--> 03  Sas: BIER getrunken;
             beer
    04 ((general laughter))
```

The collaboration between Anke and Saskia results in the sentence

```
auf jeden Fall haben wir dann immerhin // Bier getrunken.
in  any   case  have  we  then at-least    beer drunk
```

In this sentence, the periphrastic past tense consists of the auxiliary verb *haben* 'to have' in the initial ('left') sentence brace and the non-finite verbal component, the participle *getrunken* 'drunk', in the final ('right') brace. Since *trinken* 'to drink' is a transitive verb, it requires an object which attracts the focal accent which therefore falls on the pre-terminal item.

(3) Arzt (MU 04)
```
    03 a:   und mei pApa war keiner der (.)
            and my dad was not one of those who
--> 04 i:   zum [ARZT geh]t=[oder ]
            to the doctor goes=or
--> 05 b:        [JAMmert ]
                 complains
    06 a:                [der ir][gendwie geJAMmert hätt;=
                          who  would have complained
```

In example (3), there are two co-constructions, i.e. a second (i) and a third (b) speaker both complete the first speaker's (a) utterance, which yields

```
mein Papa war keiner, der // zum   Arzt   geht
my   dad was no-one   who   to-the doctor goes
```

and

```
mein Papa war keiner, der // jammert.
my   dad was no-one   who   complains
```

In the first co-construction, the syntax of the relative clause (a dependent, hence verb-final clause with a prepositional object preceding it) makes the focus accent fall on this object, i.e. the next-to-last word (*Arzt*); in the second co-construction, on the contrary, the verb *jammern* has no object and attracts the focus accent which therefore falls on the last word. The co-

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[4] The syntactic rules for focus assignment are more complex. See Uhmann (1991) for details.

construction occurs on the pre-terminal item in the first case, and on the terminal item in the second.

(4) Verloren (k09)
```
((about the poor quality of imported fruit))
    06  a:  in der hinsicht is=is sIcherlich ne mEnge äh=äh::-
                juter jeSCHMACK,(-)
            in this respect surely a lot of the good taste uhm uhm
--> 07  b:  verLO[ren jegangen;]
            was lost
    08  a:        [für UNS     ] verlOren jegangen;
                   for us        was lost
```

In example (4), the jointly achieved structure is:[5]

```
in dieser Hinsicht ist sicherlich ne Menge guter Geschmack
in this     respect  is surely      a   lot-of good taste


                        // verLOren gegangen.
                           lost      gone
```

In this sentence, the copula *ist* occurs in the initial brace position and the complex past participle verb phrase *verloren gegangen* (from the light verb construction *verloren gehen* 'to get lost') in the final brace. The non-finite verbal part of the sentence attracts the focal accent, but since it is complex, it is not realized on the last word in the sentence (the participle of the light verb 'to go', *gegangen*) but rather on the verbal component preceding it (the participle of *verloren* 'lost'). It is exactly in the slot where this constituent is about to be produced that the second speaker comes in.

(5) (Domian 27.11.09)
```
((phone-in TV show; caller JH suffers from a severe chronic illness))
    01  DO: also dass du deinem [!FREUND! zum beispiel nicht sagst was
                du hast,
            well that you for instance don't tell your boyfriend what
                you have
    02  JH:                         [hm
    03  DO: fInde_ich (-) f_finde_ich fi? [nicht
            I find        f find I   fi    not
--> 04  JH:                                  [beSCHEUert].
                                              daft.
    05  DO: fi? JA.
            fi  yes.
    06      W::IRklich;
            really;
```

In this last example, the *verbum sentiendi finden* 'to find' occurs after a sentence-initial subject complement clause; this makes an evaluative term in the sentence-final predicative position highly predictable. (The negation element *nicht* 'not' additionally projects an adjective in the upcoming slot, but since it is produced in overlap with JH's *bescheuert* 'daft', it obviously is not used by her to project this adjective.) This evaluative adjective will predictably carry the

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[5] The Berlin vernacular features of the original sentence have been omitted here for simplicity. They do not change the syntax.

focal accent lacking so far. Indeed, JH in her co-construction provides the negative evaluation in the predictable format of an adjective carrying the focus accent (04).

Co-constructions that occur in the syntactic slot of the word on which the focal accent falls account for more than half of Brenning's approximately 200 examples of collaborations before unit completion (whereas, for instance, collaborations starting in the front field of a German sentence account for only 10%). What makes this position so suited for a co-construction? On the one hand, the syntactic structure of the emerging unit is already highly predictable. On the other hand, the focus accent marks the semanto-pragmatic center of the utterance. Its most newsworthy, rhematic element is just about to appear towards the end of the utterance after all thematic information has already been produced. The first - structural - feature makes this position particularly non-risky for the second, co-constructing speaker, the second – pragmatic – feature makes it particularly suited to achieve an interactional effect.

Considering the small number of grammatical alternatives available for bringing an utterance to completion at the point in time in which the focal accent is about to be produced, and considering the largely uneven probabilities attached to these alternative ways of achieving gestalt closure (if there are any alternatives at all), it is relatively easy for the second speaker to predict this slot in structural terms. For instance, in (4), only a non-finite verb can occur at the point where the co-construction sets in; in (2) and (3) only a VP can follow; in (5), only a predicative expression, most likely an adjective. Of course, there are still options; there are several verbs, adjectives, and many types of VPs that will do the job. In addition, there is always a possibility to expand the structure before providing the projected item. In fact, it is frequently observed that first speakers, if after the second speaker's collaborative closure they choose to bring the unit to completion themselves as well, slightly alter the second speaker's version. These alterations are local expansions that are outside the projection and neutral with respect to it. In this way, the first speaker in (4) inserts a non-predictable, expanding (and contrastively stressed) prepositional phrase before he takes up the second speaker's terminating verb *verloren gehen*:

```
in dieser Hinsicht ist sicherlich ne Menge guter Geschmack
in this     respect  is surely     a   lot-of good taste


second speaker:                    // verloren gegangen.
                                      lost     gone


first speaker:                     // [für uns] verloren gegangen.
                                      [for us]  lost     gone
```

In (3), the first speaker, although picking up the third speaker's collaborative completion with the verb *jammern*, switches from indicative to the past conjunctive and inserts an expanding hedging adverbial *irgendwie* before it:

```
mein Papa war keiner, der
my   dad was no-one  who


second speaker:          // zum  Arzt  geht
                            to-the doctor goes


third speaker:           // jammert.
                            complains

first speaker:           // (der) [irgendwie] [ge]jammert [hätte.]
                            (who) [somehow]   complained  [had]
```

These slight alterations do not make the projected closure irrelevant but only slightly modify it. It remains true that the syntax of the remainder of the utterance is rather predictable.

The same cannot be said of the pragmatics of the collaboratively produced utterance component which is prosodically marked as prominent by the focal accent. The focal accent highlights the focal constituent, which is the least predictable part of the utterance in terms of content. It is by providing this constituent that the second speaker can turn the completion into an interactionally relevant event: Whether the second speaker wants to help out the first speaker as in (3) and (4), or wants to impute a certain meaning intention to the first speaker which s/he may not have had in mind but which may create a humorous innuendo as in (2), or wants to be outspoken where the co-participant is restrained by considerations of politeness as in (5) – the decisive semanto-pragmatic component in order to do so is the rheme of the utterance.[6] And of course, the second speaker can be 'mistaken', i.e. the first speaker may correct him or her for having imputed a non-intended meaning; in fact, second speakers sometimes 'intentionally misunderstand' the first speaker's plans on the interactional level. However, it never occurs that the second speaker produces a 'syntactic error', i.e. a subsequent item that needs to be corrected for its grammar by the first speaker.

Co-constructions are one type of 'live' evidence of online syntax processing based on the notion of projection, since they require speaker and hearer to be maximally synchronized in dialogue. They work on one syntactic project together. There are other types of evidence of projection, some of which I will mention briefly here, in which the second speaker can be assumed to have processed the emergent syntactic gestalt although s/he does not contribute to it. The evidence for projection is more indirect here.

One type of evidence comes from terminal overlaps, some of which also regularly occur in the position of the word carrying the focus accent (cf. Jefferson 1983, Schegloff 2000). The following example is taken from a phone-in show; the caller is a young woman whose boyfriend committed suicide. The extract occurs several seconds into the call. The host (DO) asks about the reasons behind the suicide, and the woman answers that she thinks that her boyfriend wanted to make her life easier. After a parenthetical question of how he committed suicide (omitted here), the host expresses his surprise at this reasoning. He does so by asking a why-do-you-think-X question (line 12), which repeats the woman's reason for her boyfriend's suicide in the X-slot. The focus-carrying word of the dependent clause *indem er sich TÖtet* 'by killing himself' (lit: 'in that he kills himself'), the finite verb *TÖtet* in sentence-final position, is overlapped by the beginning of SA's answer:

(6) (DOMIAN 27.11.09)

```
01  Do: wa? WEISST du,
         do do you know
02      waRUM er sich das leben genommen hat?
         why he took his life?
03      (--)
04  SA: °hhh
05      nein nicht WIRKlich,
         no   not really,
06      wir verMUten es nur,
         we only guess,
07      also beziehungsweise ich und meine schwester wir verMUten,
         well or rather me and my sister we guess,
```

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[6] The interactive functions of co-constructions have been amply described, e.g. by Szczepek 2000, Hayashi 2003, Bockgård 2004.

```
     08        dass er mir irgendwie mein leben wieder EINfacher machen
                wollte;
               that he somehow wanted to make my life easier again;
     ((...))
     11  DO: °hh
     12     wieso glaubst du dass er !DIR! das leben einfacher machen
                wollten (-) wollte,
               why do you think that he wanted to make YOUR life easier again,
     13     indEm er sich,
               in that he himself
--> 14     (-)[(TÖtet)   ],
               kills ((='by killing himself'))
--> 15  SA:  [na weil er] das so in: seiner letzten es em es so
                formuLIERT hatte;
               oh because he phrased it that way in his last text message;
```

In the following similar example of a terminal overlap in the position of the focal accent, the caller UW talks about his frequent visits to prostitutes. In the beginning of the extract, the host asks about the price of these visits; the last word, again of an embedded sentence, carries the focal accent. It is this word which is overlapped by UW's answer:

(7) DOMIAN 26.11.09

```
     01  DO: wie (-) w was ZAHLST du denn:?
               how   w what ((=how much)) do you pay?
     02     dieser frau für: für DAS,
               to this woman for
--> 03     was sie da (.) [TUT];
               what she      does
--> 04  UW:               [ja ]=es kommt drauf AN,
                           well it depends,
     ((etc.))
```

In examples such as (6) and (7), the structure (i.e. the syntactic function and hence case, word class) of the overlapped word is highly predictable, and its content is almost entirely redundant, since the dependent clause only repeats or reformulates what has been said before. It comes as no big surprise then that these last words are overlapped, even though the word in the sentence that carries the focal accent marks the rhematic part of the sentence. Since the next speakers – for whatever reason – seem to be eager to answer the questions they have been asked, it seems natural for them to start in overlap. But in order to do so, they have to be able to project the overlapped slot (which they otherwise could not know to be irrelevant). Terminal overlaps in which next speakers orient very precisely to what the previous speakers did (for instance, by answering their questions) can therefore provide additional evidence of the recipients' and next speakers' online language processing.

In extreme cases, the recipient's next utterance can even be formulated <u>before</u> the first speaker has produced the predictable focus-carrying constituent, without any overlap, as in the following example:

(8) (BB1)

```
     01  Ver: isch denk der jürgen hat AUCH momente wo er; .h
               I think Jürgen also has moments where he
--> 02  Sbr: <<emphatically> nä.>
                           no!
```

```
03  Ver: nach HAUse will;
          wants to leave;
04        meinste NICH?
          don't you think so?
```

The talk before the extract was about the fact that all people get homesick occasionally; the rhematic part of Ver's turn unit in 01 is therefore easy to project. Sbr does not wait for Ver to bring her turn to completion but exploits a hesitation between the theme and the rheme to insert her rejection of Ver's (presumed) opinion, so that Ver after having finished her turn in 03, directly responds to that precipitated rejection.

Other than in the case of co-constructions, where the grammar of the co-constructed element fits into the emergent syntactic gestalt and thereby proves congruent processing by the first and second speaker, we have no such proof in examples of early delivered next sequential steps (such as (6)-(8)). However, we can observe that these listeners claim to have successfully processed the syntactic unit thus far, and are therefore in a position to overlap its 'irrelevant' remainder. It is obvious that the projected completion of the first speaker's overlapped utterance extends beyond its syntax into its semantics: the second speaker claims to know <u>what</u> the first speaker wanted to say in addition to knowing <u>how</u> he wanted to continue.

Finally, 'live' evidence of online processing and projection comes from failed projections. The projection of the current listeners turns out to be mistaken in these cases; or perhaps better: speakers choose to make listeners believe that they (the speakers) did not intend the projected continuation as understood by the listeners. In the psycholinguistic literature, misalignment between speaker and hearer has most famously been discussed under the heading of garden path sentences (cf., among many others, Pritchett 1988). But genuine garden path sentences are almost absent from conversational spoken language, since even in languages with very little inflectional morphology such as English they are clearly disambiguated by prosody. What we do find in conversational language are cases in which a hearer visibly projects a certain (non-)continuation of a unit, and has good reasons to do so, while the speaker decides on the fly to choose another, non-predictable continuation.

A very clear and recurrent case of such misalignment in spoken German is linked to the interpretation of the phoric pronouns *es* 'it' and *das* 'that', which is often ambiguous between an anaphoric and cataphoric reading. (A fuller discussion of these ambiguities and their relationship to garden path sentences can be found in Imo 2011.) Evaluative statements in particular often occur in a context in which they can be understood as an assessment of the prior speaker's telling, and hence a syntactically complete turn, but also as a projective device for a following complement clause. Consider the following example, again taken from a phone-in show, which occurs after the caller has been asked by the host whether he has a girlfriend:

(9) (DOMIAN 27.11.09)

```
01  RI: ich mein ich HÄTte gern ne partnerin,
        I mean I would like to have a partner,
02      aber ähm (--) ich: (-) äh:m:
        but uhm      I:      uhm
03      (1.9)
04      ja;
        well
05      es_is halt nich so LEICHT(h);
        it isn't so easy;
06  DO: ne:,
        no
07      das [is
        it  is
```

```
-->  08  RI:      [jemand zu FINden.
                   to find somebody
     09  DO: ja
              yes
```

RI's line 05 *es ist halt nicht so leicht* 'it isn't so easy' is construed by the recipient as a complete utterance, with *es* 'it' referring back to RI's previous utterance, i.e. to 'find a girlfriend'. However, the current speaker RI retrospectively treats the same *es* 'it' as cataphoric and adds an infinitival clause specifying its meaning (08). The resulting simultaneous talk between speaker and hearer is an overt sign of the misalignment that has occurred.

A similar ambiguity between backward and forward interpretation which is not tied to pronoun resolution is observed in the following example:

(10) (DOMIAN 26.11.09)
```
     01  XE: ja und der hat dann halt geSAGT,
             ok and then he said
     02      ja ich soll mir kein STRESS machen,
             ok I should not be stressed out
     03      und ich (.) wir MÜSsten nichts machen,
             and I       we were not obliged to do anything
     04      wenn ich das nicht [WOLLte],
             if I didn't want to
     05  DO:                    [AH    ] ja;
                                 oh I see
     06  XE: aber
              but
-->  07  DO:(na) haste [ja GLÜCK gehabt; ne?]
             (then) you  were lucky; weren't you
     08  XE:           [(das ging ganz GUT);]
                        (that went quite well);
     09          (-)
-->  10  DO: dass [du an SO jemanden äh    ]
             that  you came across uhm
-->  11  XE:      [ja_ja doch ich denk SCHON];
                   yes yes I do think so
     12  DO: geKOMmen bist;
             somebody like him
```

XE is talking about her first sexual experience. Her partner told her not to be stressed out and that she was not obliged to do anything she did not want to do. Overlapping with her own positive evaluation of this experience (06/08), DO comments that she had been really lucky (07): *na haste ja Glück gehabt* 'then you were lucky'. This assessment is a full, complete sentence, and we can see that XE processes it as such: in 11, she produces a slightly mitigated agreement. The preference clearly is to process current utterances as being responses to prior talk, which makes XE's interpretation perfectly justified, since XE's prior telling can be interpreted to be in the scope of her 'being lucky'. However, perhaps triggered by the small silence in 09 which in turn is likely to be due to the turn-taking turbulences in 06-08, DO – mostly simultaneously with XE's next utterance – expands ("increments", cf. Auer 2007, 2006) the syntactic structure of 07 by adding a *dass*-clause which retrospectively attaches to the shell noun *Glück*.[7] The *dass*-clause is produced in such a way that it can be heard as the comple-

---

[7] Shell nouns are "an open-ended functionally-defined class of abstract nouns that have [...] the potential for being used as conceptual shells for complex, proposition-like pieces of information"

ment required by *Glück*, and thereby projected by it, although this is not the interpretation chosen by XE, who almost simultaneously produces her agreement in line 11.

On a more general level, almost all TCUs can be expanded beyond the projectable point of unit closure by the speaker, which may lead to misalignments between speakers and hearers in online processing. One last example will serve to clarify this point:

(11)(CHINA 12)

```
((H is talking about racism among Chinese students in China against Afri-
cans in the 1980s))
     01  H:  der EIne: .hh war ma verDROSCHen worden von_ner ganzen .h
              HORde: chinesischer kommilitonen- .h
              one of them ((i.e. African students in China)) had been beaten
              up by a whole  gang of Chinese fellow students
     02       weil er (-) sich erdREIStet hatte: .h
              because he (-) had dared
     03       eine chiNEsin zum TEE einzulad[en.=(↑)NACHmittags
              to invite a Chinese woman for tea=in the afternoon
     04  S:                               [NEI:N
                                           no:::
     05  H:  doch
              yes!
     06  S:  <<p>nein; das_s abSURD.>
              no; that's absurd.
```

In the dependent causal clause

```
weil er sich erdreistet hatte, eine Chinesin zum Tee einzuladen
because he himself presumed had, a Chinese-woman for tea to-invite
```

the syntactic completion point is predictable: it will occur after the sentential object of the verb *sich erdreisten* 'dare to' (in German a reflexive construction) in the first part of this causal clausal structure, which needs to be an infinitival phrase. The projectable completion will therefore be reached with this infinitive, which in turn is highly determined by the object NP *eine Chinesin* 'a Chinese woman' and the PP *zum Tee* 'for tea'. Since there are only very few German verbs other than *einladen* 'invite' that would fit into this syntactic frame, this word is predictable, and unit closure can be projected. The recipient makes use of this projectability and starts somewhat into the infinitive, i.e. before unit completion, with her emphatically produced surprise token *nein* ('they didn't!'). However, the first speaker continues beyond this point, adding the adverb *nachmittags* 'in the afternoon' in the position of an "afterthought", i.e. after the projected unit completion. Again, misalignments such as these show us that online processing by the hearer is interactionally real,[8] and is based on the syntax of the language.

Note that there are other types of structural projections in addition to syntactic ones. For instance, projections can also work on the basis of the word's phonological structure. An example occurs in line 13 of extract (1):

(Schmid 2000: 4). Typical shell nouns are *idea, problem, chance*, but Germ. *Glück* in complex predicates such as *Glück haben* 'to be lucky' or *es war mein Glück* 'I was lucky' behave in a very similar way. When used in isolation, these expressions require an object, i.e. they have an open valence, which can be understood to be filled by the preceding context which is in their semantic scope.

[8] The misalignment is sequentially repaired in such a way that S's emphatic response is taken up by H in her next turn ('yes!); the afterthought is thereby 'deleted' and is lost for the interaction. It was intended to lend further substance to the story, making the African student's behaviour even more 'innocent', but since S has already responded quite emphatically without knowing that the invitation took place in the afternoon, there seems to be no need for either participant to recover it.

```
12   Uwe:   ich=bin jetz eigendlich soweit ganz FIT.
             I'm actually feeling quite well right now.
13   Git:   ↑j[a:=d
             yes y'
14   Uwe:      [ich=hier:: °hh [will jetz ma sEhen ob] ich das
               I   well           will see now whether I can
15   Git:                        [du_hÖrs dich auch so AN;]
                                  you sound like it;
```

Gitte breaks off to yield the turn to Uwe in line (13). But Gitte not only breaks off, she also gives a cue to what she was about to say, i.e. the first sound of this projected utterance (the alveolar voiced stop in the onset of the syllable). What precisely she wanted to say is of course hard to predict for her co-participant (likely candidates include *da* 'then/there', *dann* 'there' or *das* 'that'), but one candidate surely is *du* 'you', which indeed comes up in line 15, when Gitte has another chance to take over the turn (cf. Schegloff 1987).

Structural projection is also possible on higher levels than what is traditionally considered sentence-level syntax. A good example is third positions in lists which are highly projectable and therefore a slot in which collaborations occur quite frequently (Jefferson 1990):

(12) (mu10)

```
((a and b are an elderly couple, i. is a young friend of the family; a. has
recently stopped smoking and therefore put on weight))
     01  a:  ja gut ich mUss jetz- (-)
             well ok now I have to
     02  b:  es iS [es is (eben-)  geNAU= ]
             it is  it is you know exactly
     03  a:        [HART an mir arbeiten-]
                    work hard on myself-
     04  b:  =weniger ESsEn-
              eat less
     05      weniger SAUfEn-
             drink less ((alcohol))
     06      und [a wIrklich]
             and also really
-->  07  i:      [mehr  beWE]gEn;
                  exercise more
     08      (0.3)
     09  b:  mehr beWEgEn;
             more exercise
     10      ja genau,
             yes exacty,
```

After a has announced his intention to 'work hard on himself', his wife b starts a list of things for him to do ('eat less, drink less'); the third list item is already foreshadowed by her *und* 'and' in line 06, but at this point i takes over and completes the list with *mehr bewegen* 'exercise more', which is accepted as the relevant third list item by b through repetition (09) and confirmation (10).

Before section 4 takes up the notion of syntactic projection in more detail, we will first turn to structural latency as another source of speaker/hearer alignment in time.

3.   Structural latency and online syntax

A complete description and analysis of how the structural processing of a unit of spontaneous, interactional language unfolds in time will in many cases need to start <u>before</u> this unit is actually produced; it will have to include prior talk relevant in some way or other to the grammar of the utterance in question. This prior talk may immediately precede the emergent syntactic project or have occurred at some distance from it (non-adjacent).

A striking example of a non-adjacent "resonance" (Du Bois 2001) occurs in lines 04 and 13/15 of example (1):

```
04   Uwe:    h du hörs dich auch n bIschen verdrömelt AN.
                 you do sound a bit drowsy.
((...))
13   Git:    ↑ja:=d?
                yes y'
((...))
15   Git:    du hÖrs dich auch so AN;
             you sound like it;
```

The structure of Uwe's turn in line 04 (and even some of its wording) is almost exactly reproduced by Gitte some moments later. In line 04, Uwe comments on Gitte's previous talk, particularly on her voice quality in the section of the phone conversation preceding the extract. In 13/15, Gitte produces a second to Uwe's statement in line 12 that he's 'actually feeling quite well now'. The two utterances thus occur in two different sequential environments. Still, the second wording surely resonates with the first one.

Instances of such re-usals of previously activated lexical materials as well as syntactic constructions show that these remain 'in play' after their complete production for some time, making a structurally similar utterance more likely to occur. Again, conversational data confirm what is known from psycholinguistic research on so-called priming (cf., among others, Bock 1986): activated linguistic structures have a higher probability of reappearing later in time in the same or other speakers' utterances than semantically equivalent ones which are not structurally similar. In non-adjacent re-usals of prior talk, the speakers may not even consciously realize that they are using the same material. Nonetheless, this repetition produces coherence. However, while such 'distant' resonance relationships provide evidence for a dialogical approach to language and interaction (cf. Linell 2009), the notion of latency as used here is more restrictive. It refers to adjacent or quasi-adjacent structural resonances in which prior talk becomes part of a new, unfolding syntactic project and enters into that particular relationship between prior and emergent talk that is often called ellipsis (or better, analepsis). Let us have another look at the collaboration in example (1) and ask how it is possible at all for Gitte to project the continuation of Uwe's utterance in line 18, such that she can collaborate in its production:

```
14   Uwe:        [ich=hier:: °hh [will jetz ma sEhen ob   ] ich das
                  I    well         will see now whether I can

15   Git:                          [du hÖrs dich auch so AN;]
                                    you sound like it;

16   Uwe:    SAKko krich?
             get the jacket?

17          un dass ich (hier) die FOtos wegbring,
            and that I (well) drop off the photos,
```
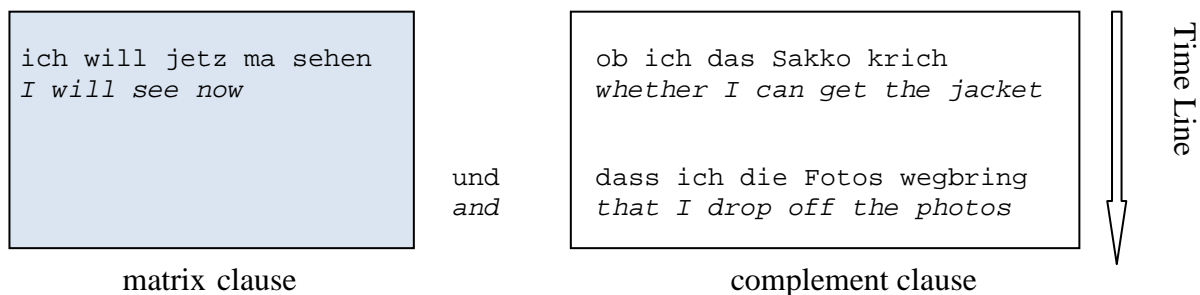
```
18              un dann: hie:r; (0.5)
                and then well


19   Git        Üb[en;= Üben;=Üben.
                practice practice practice.


20   Uwe:       [will ich? (.) will ich ↓Üben Üben Üben.
                 I will      I will practice practice practice.
```

Many accounts of syntax, even when they argue within a non-generative, processual framework, still start from the idea of sentence production and comprehension as a one-unit-at-a-time issue. Speakers build up syntactic structures in time, and recipients process them as they emerge, until a syntactic unit is complete; after that, all syntactic mental representations are deleted, and the whole process starts anew, as if the syntactic mind of the interactional participants had been reset to zero. But in interaction, a much more realistic assumption is that the mental activation of a syntactic structure is not coextensive with its production or reception. Rather, grammatical structures have often been activated already before a new syntactic project starts, and they 'linger on' after its completion, i.e. they remain available for subsequent unit types for whose construction they may or may not be used. Reusing latently available patterns for subsequent utterance units requires no additional effort of processing; rather, it is the unmarked case. Subsequent utterances that are 'elliptical' are then built into an already existing, 'latent' structure.

The issue of structural latency is directly relevant for explaining how Gitte projects the continuation and completion of Uwe's utterance in line 18 on the basis of what has been said thus far. If we were to restrict our analysis to the syntactic structure begun by Uwe in line 18 and completed by Gitte in line 19 in isolation, it might indeed be questionable whether it has much of a syntactic structure at all, and its continuation may appear entirely unpredictable:

```
un    dann (hier)  //  üben üben üben
COORD ADVB (PARTICLE)   V-inf V-inf V-inf
```

The initial coordinating conjunction and the subsequent adverbial (plus particle) do not allow the prediction of a next slot. Such a projection is possible, however, when the utterance is seen in its syntactic context, from which it receives a much richer structure. Uwe, after having announced that he (unlike his girlfriend) is feeling awake and ready for new activities, starts to list the things he wants to do now (line 14/16):[9]

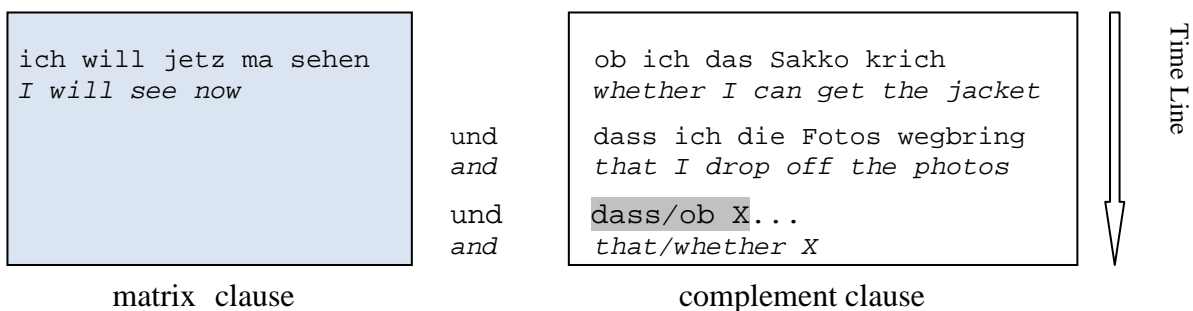| ich will jetz ma sehen		ob ich das Sakko krich	Time Line
I will see now		*whether I can get the jacket*	
	und	dass ich die Fotos wegbring	
	and	*that I drop off the photos*	
matrix clause		complement clause	

The two first items of his list are related to each other in a hierarchical way. The first list item (*ich will jetz ma sehen ob ich das Sakko krich*) is formulated as an independent sentence, the
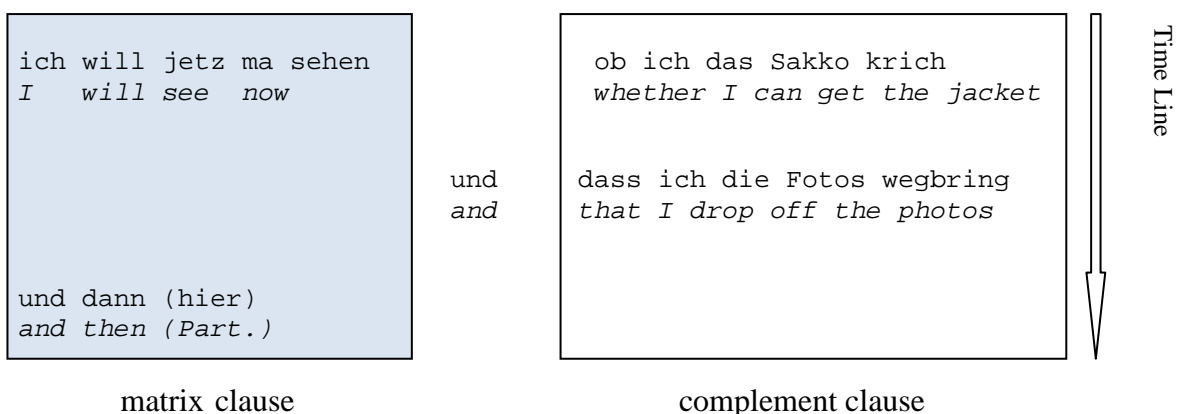
---

[9] The box notation used in the following indicates paradigmatic slots. It is of course indebted to Claire Blanche Benveniste's box notation (e.g, Blanche-Benveniste 1990), which is also used by Du Bois (2001).

second is dependent on it; whereas the first functions as the host, the second functions as a symbiont (cf. Auer i.pr.). More precisely, the structural slot of the complement clause *ob ich das Sakko krich* 'whether I can get the jacket', i.e. the matrix clause *ich will jetz ma sehen* ('I will see ___') in the first list item, remains active and is reused as the matrix for the complement clause *dass ich die Fotos wegbring* 'that I drop off the photos' in the second list item, without being verbalized again (cf. the shaded grey slot in the figure above).

The syntactic pattern enacted by the first full sentence, and used again in the second analeptic structure, remains available for even further use. Therefore, when Uwe starts a third list item with *und dann*, Gitte can rely on more than just this very poor beginning for projecting a continuation. She can also make use of the latently available structure of the two already formulated list items. After Uwe's coordinating *und*, one projectable and very straightforward way of reusing the already activated pattern would be to add yet another complement clause introduced by *dass* 'that' or *ob* 'whether'.

```
┌──────────────────────────┐          ┌─────────────────────────────────┐           ▲
│ ich will jetz ma sehen   │          │   ob ich das Sakko krich        │           │ Time Line
│ I will see now           │          │   whether I can get the jacket  │           │
│                          │    und   │                                 │           │
│                          │    and   │   dass ich die Fotos wegbring   │           ▼
│                          │          │   that I drop off the photos    │
│                          │    und   │   dass/ob X...                  │
│                          │    and   │   that/whether X                │
└──────────────────────────┘          └─────────────────────────────────┘
         matrix  clause                         complement clause
```

For instance, Uwe could continue with *... und dass ich (dann) zum üben komme* 'and that I will have time to practice (then)'. But this continuation is no longer available when Uwe adds the temporal adverb *dann*. In isolation, this adverb would not mean much in terms of structural projection, but in the context of the last two utterances, it fundamentally changes the latent structure. This is because an adverbial cannot precede a subordinate clause in German (i.e. it cannot be positioned in the slot before the complementizer *dass* 'that'). Hence, the coordinating conjunction cannot link the dependent clauses. Rather, the correct structure latently in play at that moment (after Uwe's *und dann (hier)*, i.e. at the point of collaboration) is now:

```
┌──────────────────────────┐          ┌─────────────────────────────────┐           ▲
│ ich will jetz ma sehen   │          │   ob ich das Sakko krich        │           │ Time Line
│ I   will see   now       │          │   whether I can get the jacket  │           │
│                          │          │                                 │           │
│                          │    und   │   dass ich die Fotos wegbring   │           │
│                          │    and   │   that I drop off the photos    │           ▼
│                          │          │                                 │
│ und dann (hier)          │          │                                 │
│ and then (Part.)         │          │                                 │
└──────────────────────────┘          └─────────────────────────────────┘
        matrix clause                          complement clause
```

where *und dann* 'and then' projects a coordinated structure on the level of the first matrix clause rather than on the level of the complement clause. But the adverb *dann* does even more to the latent structure. Unlike a coordinating conjunction, an adverbial in the beginning of a German main clause occupies the front field of the sentence (the position before the initial brace), and makes it impossible for any other constituent to appear in this position (German

being a "verb-second" language). This means that the structure of the first list item, in which the pronoun *ich* 'I' occupies the front field,

```
ich will ((...)) sehen...
I   will          see
```

is no longer compatible with the newly emergent structure. One option would be to abandon this latent structure completely, but another (and frequently used one) is to adapt it in order to create a positional slot for *dann*.[10] In order to do so, it has to be re-read retrospectively in such a way that the subject pronoun now occurs <u>after</u> the initial brace/finite verb, i.e. in the middle field of the sentence:

```
(und) dann will ich sehen + CompClause
      ADV Vfin Subj Vinf
```

as in:

```
und dann will ich sehn dass ich endlich mal zum Üben kommm
and then I will see that I finally get down to practicing
```

An alternative is to give up the matrix clause/complement clause structure and build the third list item directly into the structure of the matrix clause. In fact, when Uwe completes his sentence (in lines 18/20), he simply replaces *sehen* 'to see' (and the projected but unfilled slot for the complement) with *üben* 'to practice', without any 'ellipsis':

```
18      un dann: hie:r; (0.5)
        and then well

20      will ich? (.) will ich ↓Üben Üben Üben.
        I will        I will practice practice practice.
```

Finally, it would be possible to exploit a smaller latent structure after the termination of the utterance in line 17/18, i.e. the preceding subordinated *dass*-clause *dass ich die Fotos wegbring* 'that I drop off the photos', replacing only the finite verb *wegbring* as in

```
17      dass ich die FOtos wegbring
        that I drop off the photos
18      un dann: hie:r; (0.5) entWICkeln lasse
        and then well         have them developed
```
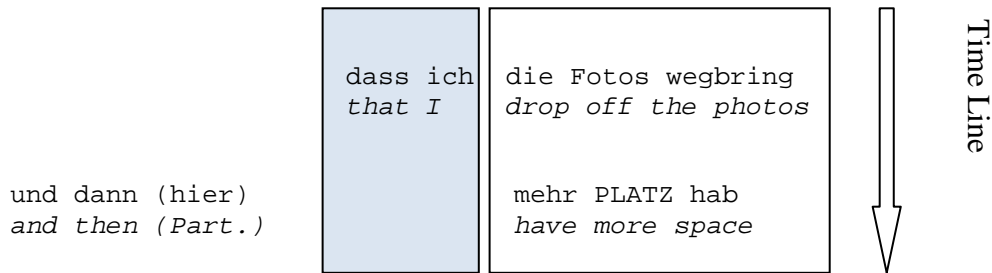
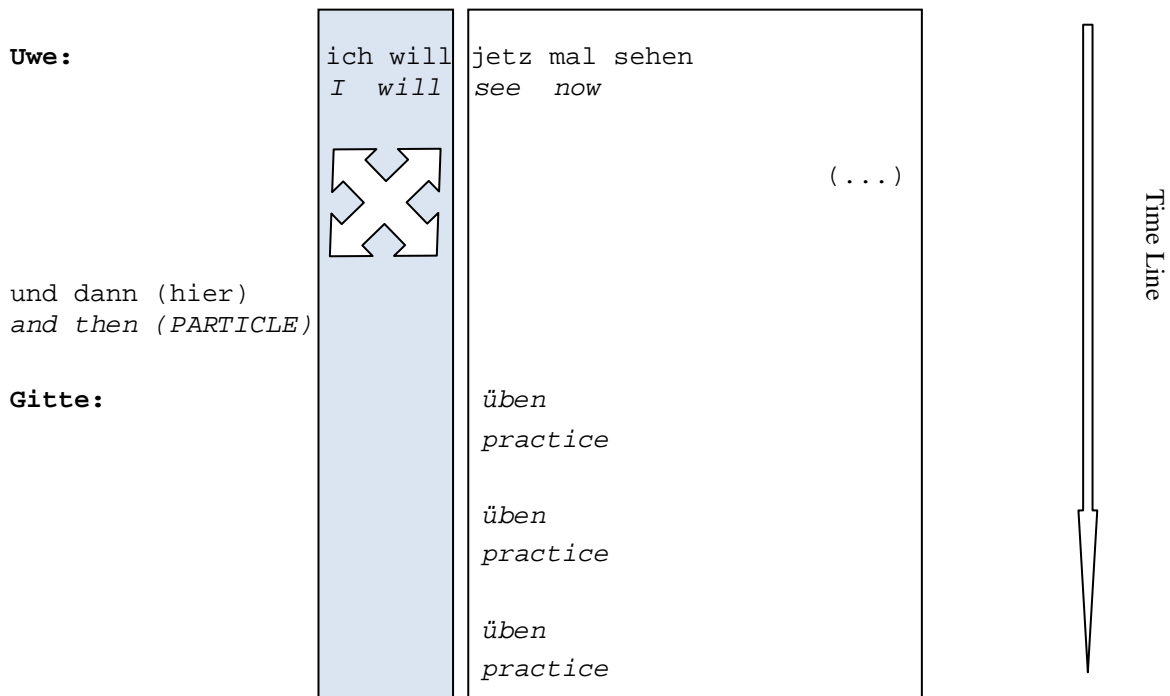or only the predicate *die FOtos wegbring*, as in

```
17      dass ich die FOtos wegbring
        that I drop off the photos
18      un dann: hie:r; (0.5) mehr PLATZ hab
        and then well         have more space
```

---

[10] As pointed out in Auer i.pr., small adaptions of latent structures are very frequent.

```
               ┌──────────┬──────────────────────┐
               │ dass ich │ die Fotos wegbring     │
               │ that I   │ drop off the photos    │
               │          │                        │
und dann (hier)│          │ mehr PLATZ hab         │
and then (Part.)│         │ have more space        │
               └──────────┴──────────────────────┘
```

Time Line

Both the present speaker and his recipient can therefore build on a rich latent structure to formulate a next utterance which 'parasitically' exploits what is already there in some way or other. The version Gitte opts for is this:

```
                   ┌──────────┬────────────────────────┐
Uwe:               │ ich will │ jetz mal sehen          │
                   │ I  will  │ see  now                │
                   │          │                         │
                   │   ⤧⤦     │              (...)       │
                   │   ⤩⤨     │                         │
                   │          │                         │
und dann (hier)    │          │                         │
and then (PARTICLE)│          │                         │
                   │          │                         │
Gitte:             │          │ üben                    │
                   │          │ practice                │
                   │          │                         │
                   │          │ üben                    │
                   │          │ practice                │
                   │          │                         │
                   │          │ üben                    │
                   │          │ practice                │
                   └──────────┴────────────────────────┘
```

Time Line

Like Uwe in his next utterance, she also puts the infinitive *üben* 'practice' in the slot of the infinitive *sehen* 'see (to it)' (& unexpressed object), but in addition re-uses the latent structure *ich will jetzt mal* ___ without making it explicit again.[11]

The point is that utterances in context are not produced out of the blue, only grammar book examples are. Once there is a prior context, its syntactic structure is available for exploitation by another or the same speaker for his/her next syntactic unit. Often it is this prior talk and the latent structures it makes available for speakers that help build up projections early in the emerging sentence. The temporal alignment of participants in dialogue starts already at that point: with a shared array of latent structures on which next speakers (and listeners) can build.

---

[11] More details about "modal infinitives" and their relationship with analepsis can be found in Deppermann (2007: 135-138).

4.   Further reflections on the grammar of projections in spontaneous language[12]

The common denominator and, indeed, the basis of all projections discussed here, is hierarchical structure, i.e. a structure in which constituents are embedded into each other. If syntax was nothing but the concatenation of unrelated elements, no projection would be possible, since any element could be followed by any other element. Hierarchy can be understood in two different ways. In a very simple sense it refers to the fact that items (words) are produced in chunks, the sequencing of which constitutes a higher-level order above that of the words. For instance, imagine a 'language' without any syntax but an end-of-chunk marker – let's say an obligatory sentence-final particle. This language would be hierarchical (it would have 'sentences'), but the only projection possible would be that at some point in time after a string of words has been produced, a final particle will follow. Now imagine a 'language' whose syntax consists of the only requirement that any complete unit of talk ('sentence') has to be made up of at least two words. In this case, the occurrence of a single word in the beginning of an utterance would make the prediction possible that at least one other word will follow. Beyond that, however, the recipient would have no clue as to the nature of this second word – any word would do and lead to a well-formed 'sentence' in that 'language'. There is only one sense in which a 'language' of that type could provide resources for projection. If the transition from one element to the next within a chunk occurred with a much higher probability than the transition to all other items, this element would be predictable with a certain chance. This is indeed the case for some frozen chunks in natural languages that cannot (any longer) be given a grammatical analysis but still consist of recognizable, single words. In this case, pure frequency will determine transitional probabilities from one item to the next. For instance, the frozen chunk N *für* N as in *Schritt für Schritt* ('step by step'), has a highly opaque syntactic structure, since the use of *für* (or *by*) to conjoin identical nouns in order to express gradience is not easily derived from or made compatible with the grammar of the preposition *für* (or *by*, for that matter).[13]

From a usage-based perspective, chunking may be considered to be the proto-syntax on which the syntax of fully developed languages is built. However, projection as discussed in this paper depends on a full grammar as found in all human languages, in which some relationships between the words in a sequence are determined by relationships of dependence and government. This provides a second sense to the notion of hierarchy: the elements of a chunk (the 'words') need to be in a hierarchical relationship themselves.

Writing a grammar of a language from the perspective of projection, i.e. how it is processed in time, requires a description of the projective potential of the grammatical relationships in that language. As the grammars of languages differ, these potentials differ as well. For instance, Japanese is generally considered to be a language with a weak syntactic projection potential (cf. Ford, Fox & Thompson 2002: 130-131 with further references), while German has a comparatively strong potential for projection.

What are the parameters that determine the projection potential of a language? Some of them come to mind immediately:

---

[12] This section is largely based on Auer (2007).

[13] Construction grammarians would rightly argue that N *für* N is a construction which is part of the grammar of German. The point here is that the analysis of *für/by* as a preposition is not applicable, and that it is unclear whether there is a hierarchical relationship between the words in this constructional scheme. In addition, the predictability of the third item, i.e. after N *für* __, is highly dependent on the noun chosen. While in *Schritt für Schritt* 'step by step', it is around 80%, it is only about 30% in *Tag für Tag* 'day by day' and a negligible 2% in *Baum für Baum* 'tree for tree'. The transition probabilities are therefore not tied to the constructional scheme, but to its specific lexicalized implementations. (Rough statistics from a count in the "Archives of the written language, public" in the IDS database (COSMAS), accessed April 7, 2013.)

(1) <u>Rigid vs. loose serialization restrictions</u> (word order). It is useful to distinguish between adjacent and non-adjacent projection here. Adjacency projection means that the element following the ones processed so far can be predicted with more or less certainty; non-adjacency projection means that the occurrence of a certain next element can be predicted, but not its exact position. It is obvious that a language with rigid restrictions on word order enables more precise adjacency projection than one with a free word order. Consider classical (written) Latin as an example of a language with an extremely free word order. Here, it is almost impossible to project the following element after the first element in a sentence on grammatical grounds; whether an initial *Gallia* will be followed by *est*, *omnis*, *divisa*, or *in* is only a matter of frequency, not grammar. In German, the situation is very different. Here, the first constituent in an emerging syntactic project (after optional conjunctions, 'left dislocations', and certain adverbials in the function of discourse markers) grammatically projects the finite verb in the following slot in a declarative main clause:

(from example 6):

```
[wir] [vermuten] es nur,
 we      guess    it only
```

(from example 4):

```
[in dieser Hinsicht] [ist] sicherlich ne Menge  guter Geschmack
 in this    respect    is    surely     a  lot-of good taste

                          // verloren gegangen.
                             lost      gone
```

Note that this first constituent may be of any kind (such as a subject in the first example, and a free adverbial in the second). In English, another projection is possible, i.e. after an initial adverbial, a subject will follow in the next slot with high probability.

Strong projections based on word order are also possible in German w-questions, which also make the finite verb highly predictable in the immediately following slot (the same holds for English):

(from example 6):

```
[wieso] [glaubst] du dass er !DIR! das leben einfacher machen wollten  (-)
            wollte,
 why      think  you that he for-you the life easier make wanted [Pl.]
            wanted [Sg.]
```

(from example 7)

```
01   DO:    [wie] (-) [w was] [ZAHLST] du denn:? dieser frau ((...))
            how       w what   pay     you PART  to-this woman ((...))
```

(2) Serialization in modifier/modified structures. Whether the modified element (nucleus) comes before the modifiers (satellites) or after in a language makes a huge difference for online processing. Prepositioned satellites project the nucleus while prepositioned nuclei are not necessarily followed by a satellite and therefore do not project at all. Accordingly, 'left-branching' structures such as adjectives preceding their head nouns have a much stronger projection potential than adjectives following their head nouns. For instance, a German adjective (even when it is not preceded by a determiner) highly projects a following noun (*sie kaufte ihm rote --> (Rosen)* 'she bought him red --> (roses)'), while in a language with post-positioned modifying adjectives, such as French, the occurrence of a noun cannot project a following adjective.

(3) Serialization and government. A special case relates to the serialization of the governing element and its governed constituents (arguments), which strongly interacts with the distinction between head and dependent marking (Nichols 1986). The most important case are verbs as governing elements. In initial position they make it possible to project following arguments, but in a dependent marking language such as German, preceding arguments may also make the verb predictable, though perhaps in a less reliable way. The first case is most radically exemplified by verb-initial clauses in German, such as yes/no questions:

(from example 6)

```
[WEISST] [du], [waRUM er sich     das leben genommen hat?]
know you          why   he himself the life   taken   has?
```

The initial verbum sentiendi needs an agent-subject and an object expressing the known proposition. Both are predictable, and given the word order rules of German, the subject needs to precede the object (in this case a complement clause). The opposite case is exemplified by German main clauses in which the non-finite part of the verbal complex is sentence final and the arguments all precede it:

(from example 2)

```
auf jeden Fall haben [wir] dann immerhin // [Bier] [getrunken.]

in  any  case  have  we   then  at-least    beer   drunk
```

The fact that the analytic past tense is formed by the auxiliary *haben* 'to have' instead of *sein* 'to be' already excludes certain verb classes here (such as movement verbs); the subject (*wir*) is obligatory and does not help us to predict the governing verb. But the object NP *Bier* 'beer' makes a transitive verb projectable. There are some few other alternatives apart from *trinken* 'to drink' (such as *brauen* 'brew' or *spendiert bekommen* 'get treated to'), but semantics and context help predict the correct verb in final position (cf. Marschall 1994 on the predictability of end-positioned verbs in German).

(4) Split constructions. Highly useful devices for projection are split constructions of all sorts, in which the first element makes the second predictable. Languages have very different and sometimes quite idiosyncratic constructions of this type. An example from spoken German (cf. Birkner 2006) is the typifying construction SUBJ COP QUANTOR (*einer* 'somebody'/*keiner* 'nobody'/*ein Mensch* 'a person'/*jemand* 'somebody', etc.) & RELATIVE

CLAUSE in which the relative clause can be projected. An example occurs in extract (3) above:
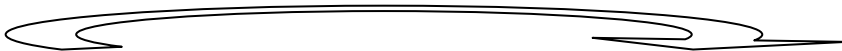
(from example 3)

```
und [mei pApa war keiner] [der (.) // zum [ARZT geh]t]
and my dad   was not-one who      to-the doctor goes
```

Similarly, cataphoric pronouns project subsequent complement clauses or noun phrases, as discussed in the context of extract (9) above:

(from example 9)

```
[es]_is halt nich so LEICHT(h); [jemand zu FINden].
 it  is PART not  so easy;      somebody to  find
```

Note that in the second case, the projection potential is usually non-adjacent, but the position of the 'extraposed' clause is fixed and will invariantly occur after the superordinate clause is complete.

5.   Some concluding remarks

Temporality is one of the most central features of (spoken) language (Auer 2009). Not only is it part and parcel of the production and reception of language, an online process in which the speaker's and hearer's minds need to be synchronized (in contrast to the offline character of the written language and of linguistic textbook examples). It also leaves its mark on the structure of language: (spoken) language is meant to be produced in time, and it exhibits features that can only be explained by reference to this temporality (Auer 1992). Vice versa, it is also true that the grammar of a language impacts on how it can be processed in real time; some structures lend themselves to online processing better than others.

   Probing into the issue of why this is so leads to the notion of projection: the anticipation of 'things yet to come'. The grammar of language is a powerful device to make such projections possible in interaction, in a way that relies not only on content (words and general pragmatic principles) but also on "open form" (Hartmann 1959).

   The main aim of this paper was to give evidence of online processing, speaker-hearer synchronization and projection from everyday conversational language. This evidence supports experimental findings from psycholinguistic research. There is, however, one major difference: experimental research by necessity isolates utterances from their context, whereas an interaction-based approach allows us to take into account the embedding of projection and online processing in prior talk. By using the notion of structural latency, I have tried to spell out one of the mechanisms of this contextual embedding.

6.   References

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