

Glottalisation and word linking as resources for multi-unit turn construction in German talk-in-interaction: Initial observations

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Abstract

In spoken German, glottal stops are frequently inserted before word initial vowels (*?ewig*) and at morphological boundaries (*?ur?alt*). As part of a conversation analytic investigation into glottalisation in naturally occurring German, this pilot study is concerned with a specific conversational context in which variation between glottalisation and direct linking from the end of one word to the beginning of the next are routinely employed. The context in question is multi-unit turn construction. It is found that in the pilot study corpus vowel-fronted TCUs that continue an action-in-progress are frequently preceded by glottalisation; vowel-fronted TCUs that implement a new action, but are being integrated into an ongoing turn, are typically linked across from preceding TCUs. This finding contradicts a potential hypothesis that action boundaries are always accompanied by phonetic ones. Instead, the participants in these data implement the opposite pattern: where there is an action boundary they delete the phonetic one, possibly in order to design their talk as continuing phonetically when sequentially it is not. These findings suggest that linguistic practices are not the result of interactional structure, but instead are resources for its implementation.

Keywords: glottalisation, turn continuation, word linking, German talk-in-interaction.

German abstract

Im gesprochenen Deutsch wird Wörtern, die mit Vokal beginnen, häufig ein Glottisschlag vorangestellt. Die hier präsentierte Pilotstudie, die Teil einer gesprächsanalytischen Untersuchung von Glottalisierung in der deutschen Alltagssprache ist, zeigt, wie SprecherInnen in einem bestimmten Gesprächskontext zwischen Glottalisierung und direkter Wortanbindung variieren. Der hier untersuchte Kontext ist die Fortführung von Redebeiträgen. Es wird beschrieben wie TCUs, die mit Vokal beginnen, regelmässig mit Glottisschlag begonnen werden, wenn sie eine Handlung fortführen, während TCUs, die eine neue Handlung beginnen, oft direkt an das vorige Wort angebunden werden. Dieser Befund widerspricht einer möglichen Hypothese, dass Handlungsgrenzen auf jeden Fall auch phonetische Grenzen beinhalten. Stattdessen wenden die TeilnehmerInnen dieser Pilotstudie das gegenteilige Muster an: Wo eine Handlungsgrenze besteht, tilgen sie die phonetische Abgrenzung, möglicherweise um eine Handlung als phonetisch fortführend zu gestalten, wenn sie es auf der sequenziellen Ebene nicht ist. Das zeigt, dass sprachliche Praktiken nicht unbedingt Resultate von Gesprächsstrukturen sind, sondern im Gegenteil diese implementieren können.

Keywords: Glottalverschluss, Wortanbindung, Turntaking, deutsche Alltagsgespräche.

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1. Introduction¹

Wenn ich ə sage, so hab' ich schon zwei Buchstaben ausgesprochen, das heißt neben dem Urvocal ist hier auch schon der Urconsonant gegeben.

When I say ə, I have spoken two letters already, that is, in addition to the ur-vowel the ur-consonant is already present.

(Rapp 1836, as cited in Alber 2001:3).

Standard German is famous for its insertion of glottal stops before word initial vowels, as in *rotes ?Auto, guten ?Abend, halb ?acht* (Krech 1968; DUDEN 1990; T. A. Hall 1992; Kohler 1994; Wiese 1996; Rodgers 1999; Alber 2001; C. Hall 2003; Krech et al. 2009; Pompino-Marschall/Żygis 2010; Russ 2010). In phonology the phenomenon is often referred to as 'glottal stop epenthesis'. This is in contrast to, for example, British English, where speakers frequently join the beginnings of word-initial vowels to the ends of previous words without intervening breaks, as in *red_apple, look_out, not_only*. A typical example that demonstrates this difference between English and German pronunciation is:

Anne_ate_an_egg. vs. ?Anna ?aß ?ein ?Ei.

However, any cursory listening to naturally occurring German talk reveals a striking discrepancy between the theoretically postulated form and real-life conversations, as native German speakers frequently drop the inserted [ʔ], and instead pronounce strings of words as single, joined-up chunks. To date this type of word linking in natural German conversation has received little recognition or analytical exploration beyond the description of enclitic pronouns and other synsemantic words (Krech et al. 2009:53-54). Furthermore, there has been little work so far on the potential interactional role of glottalisation and / or word linking in German conversation, with the exception of Selting (1995), who mentions a turn-holding function of glottal closure for turn-taking in German. This study addresses glottalisation and word linking as interactional resources in German conversation with a particular focus on multi-unit turn construction.

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2. Analytical framework

The analytical framework for this study is provided by Conversation Analysis (CA) (Sacks 1992; Schegloff 2007) and Interactional Linguistics (Selting/Couper-Kuhlen 2001). In these approaches, language is studied from the perspective of those who use it, that is, the conversational participants themselves. Spontaneously occurring interaction is considered the natural habitat of language, and the object of study is the empirically observable behaviour of interactants. Analytic interpretations regarding language-in-interaction are based exclusively on evidence of their reality for the participants.

Interactional linguistic research has shown that basic linguistic concepts, such as the sentence and the intonation phrase, have to be fundamentally re-defined in the light of findings from naturally occurring talk (Goodwin 1980; Lerner 1991; 1996; Szczepek Reed 2010; 2012; Barth-Weingarten 2013 forthcoming). This is the case because until recently linguistic enquiry has predominantly focused on language firstly as monologue, and secondly as a de-contextualised, cognitive system of rules and forms (Linell 2005; 2009). However, when language is studied as part of naturally occurring interaction, it soon becomes obvious that it is a flexible resource for accomplishing and managing constantly emerging contingencies, very much process rather than product (Ogden/Walker 2013 forthcoming).

3. Glottal stop insertion in German

In connected speech, the linking of words results in a variety of changes to the pronunciation of sounds at word boundaries. These changes are typically considered to be phonologically determined, and are referred to as Connected Speech Processes (CSPs) (Brown 1990; Nolan/Kerswill 1990; Shockey 2003). The study reported here is concerned with a different type of boundary phenomenon, which, it will be argued, is not the result of phonological processes, but an aspect of discourse structure. The phenomenon in question is variation between glottalisation and direct word linking across final consonant – initial vowel word boundaries in German conversation.

Prescriptive authorities on German pronunciation assert that glottal stops are to be inserted before word-initial German vowels (DUDEN 1990; Russ 2010), a stance that is possibly the result of the phenomenon being more wide-spread in read-aloud than spontaneous speech (Rodgers 1999). In contrast, most empirical studies have found that while German glottal stop epenthesis takes place in the majority of cases, there are conditions under which it does not occur. Phonologists have suggested a number of explanations for this variation.

The most frequently mentioned favourable context for glottal stop insertion is stress (Rodgers 1999; Alber 2001; Malisz/Żygis/Pompino-Marschall 2012), with a seminal study by Kohler (1994) suggesting a strong link between glottal stop epenthesis and morphological boundaries. Further, Kohler observes that pauses considerably increase the likelihood of subsequent glottal closure before vowel-initial words. This finding may be closely linked to the frequent occurrence of glottal stops before phrase boundaries (Rodgers 1999), an observation that has also been reported for American English (Pierrehumbert/Talkin 1992; Dilley/Shattuck-Hufnagel/Ostendorf 1996; Garellek 2012), a language that does not show regular

glottal stop epenthesis. Similarly, American English also allows for instances of glottal stops before pitch accents (Pierrehumbert 1995; Garellek 2012).

In addition, Kohler (1994) shows that the segmental context plays a vital role, with preceding plosives seemingly triggering glottal stops, while Pompino-Marschall/Żygis (2010) find glottal stops to occur more frequently before low vowels than before non-low vowels. Furthermore, speech rate has been identified as a variable influencing glottal stop insertion. In their analysis of three German politicians' speech, Pompino-Marschall and Żygis (2010) show that while glottalised vowel onsets are very much in the majority at a slower speech rate, as speakers speed up, they insert fewer glottal stops (2010:10-11):

The glottal marking of word-initial vowels is generally diminishing with increasing speech rate: nonmarked items continuously rise in frequency from about 30% in slow speech (...) to more than 50% in fast speech; on the other hand, realisations of canonical glottal stop stepwise reduce from 48% in slow speech to ca. 16% in fast speech.

By 'canonical glottal stop' the authors refer to the distinction between clearly realized glottal closure followed by subsequent plosive release and other forms of glottalisation that may occur during connected speech. This important distinction is discussed further in the following section.

Krech et al. (2009:52-54) prescribe more specifically where in German speech glottal stops must be inserted, and where they are optional. Clear locations for glottal stop epenthesis are syllable-initial vowels, stressed and unstressed, if they occur after pauses; word-initial vowels within phrases, as in *die ?Antwort*; and syllable-initial vowels after prefixes (*ver?altet*) and at composite boundaries (*Haus?arbeit*). According to Krech et al. (2009) glottal stops are not inserted at certain types of morphological boundaries (suffixes, shifts in syllable boundaries, and some proper names). With respect to word boundaries the authors mention synsemantic word groups and composites, such as *Haus_und Hof* and *(da) bin_ich*, where in the absence of glottalisation phonation may not be interrupted at all, and next (monosyllabic) words may be linked directly to previous words as enclitic syllables.

It must be noted that the above claims concerning glottal stop epenthesis in German hold for standard and Northern varieties. Southern German varieties, such as Alemannic and some Swiss German varieties, show little or no glottal stop insertion in the above-mentioned contexts (Alber 2001; Nübling 2004; Fleischer/Schmid 2006). Further, none of the above literature has considered naturally occurring interaction, which means the identified contexts are not contexts of social conduct, but of linguistic monologue.

Glottalisation has so far not received much attention from students of interaction. Where conversation-oriented research has mentioned glottal stops in the past the interest has been on post- rather than pre-positions, that is, glottal stops have mainly been noticed when they occur *after* a word or turn-constructive unit (TCU).² For example, glottal stops have been found to play a role in English for word cut-offs during self-repair (Jasperson 1998; 2002; Schegloff et al. 1977) and

² TCUs are defined here according to Schegloff (1996:55), as units which 'can constitute possibly complete turns; on their possible completion, transition to a next speaker becomes *relevant* (although not necessarily accomplished)' (emphasis in the original).

for turn-holding (Local/Kelly 1986; Ogden 2001). Selting (1995) also describes glottal closure as a cue for turn-holding in German. In contrast, this study is interested in glottalisation that *precedes* words and TCUs.

In isolating a phonetic feature of talk this study does not mean to suggest that the complex structure of conversational actions can be explained via a simplistic form-function relationship between social actions and individual linguistic practices. Instead, this paper attempts to show how a single phonetic practice is employed as a resource for conversation, thus broadening the linguistic perspective to include the domain of discourse and interaction more generally.

4. Data

The data for this pilot study are two naturally occurring two-party conversations amongst native speakers of Northern German varieties, lasting 12 minutes in total, and available through www.talkbank.org (MacWhinney 2007). One is a face-to-face conversation between two university students; the other a single telephone conversation from a radio phone-in programme, in which a radio psychologist advises a caller. The data have been transcribed according to an adapted version of the first GAT transcription conventions (Selting et al. 1998). It goes without saying that not every aspect of speech has been included in the transcripts, but only those features have been explicitly noted that are relevant to the analysis at hand.

The context under investigation here is one in which word endings are followed by words beginning with vowels, of which 576 instances were found in the pilot corpus. At these locations, participants were found to employ one of two phonetic variants: either speakers produced some form of glottalisation at the word initial vowel; or they released the previous word-final consonant or vowel directly into the following vowel, thus producing the kind of word linking known, for example, from British English (Gimson 2001; Wells 1990), and some varieties of Swiss German (Fleischer/Schmid 2006).

As previous studies have pointed out, glottal stops are neither straightforward to define, nor identify. However, in clear cases, the perception is of a marked break, accompanied by a plosive release, between the immediately prior sound and the vowel. In weaker cases, speakers do not realise full glottal closure and subsequent plosive release, but instead produce short spates of creak (Gordon 2001:9):

Vowels immediately adjacent to glottal stop are often creaky (...) In many cases, creakiness on an adjacent sound is the only clue to the presence of a phonemic glottal stop, as it is not uncommon for full glottal closure not to be achieved.

Whenever a speaker is described below as inserting glottalisation, "a salient perceptual impression of a glottal gesture" (Dilley et al. 1996:428) exists in the recording. Throughout this paper, the term glottalisation will be used to include both glottal stops and instances of creak. In the transcripts the symbol ? is used to represent glottalisation at the beginning of vowels.

Glottalised word-initial vowels are compared with cases where there is a complete lack of phonetic break, and a direct release of the word-final consonant or vowel into the following word-initial vowel. In those cases, the boundary between the two words is being deleted completely, and word-final consonants perceptu-

ally resemble word-initial ones. For example, where the word *kommen*, produced as [kom], was linked to a following *und*, the production became [komun]. The analysis showed this to be occurring even with some word final vowels, which were linked to the initial vowel of a subsequent word without intervening glottalisation. Thus, what is described here as word linking is the direct release of the final sound of a previous word into the initial vowel of a next word, without glottalisation, pausing, in- or out-breath, laughter particles, clicking or any other articulatory interruptions.

5. Glottalisation vs. word linking at TCU boundaries

In spontaneous talk, participants have to negotiate who speaks when, and for how long, on a moment-by-moment basis. This means that speakers who deliver turns longer than a single TCU must manage transitions from one TCU to the next in a way that ensures that other, currently not speaking participants do not treat the end of each TCU as a potential opportunity to start up. Previous research has revealed a number of phonetic practices that are employed at potential turn endings, depending on whether speakers are designing their talk as finished (Local/Wells/Sebba 1985; Selting 1995; Local/Kelly/Wells 1986; Ogden 2001; 2004), or continuing (Selting 1995; Schegloff 1998; Local/Walker 2004; Walker 2004; Local/Walker 2012). The pilot study presented here suggests that native speakers of German employ the distinction between inserting glottalisation before TCU-initial vowels and joining TCUs together as a systematic interactional resource in their design of multi-unit turns.

A preliminary analysis of the two recordings showed that at times glottalisation was inserted before TCU-initial vowels, and at other times TCUs were being joined together. At first sight, the two phenomena seemed to be in free variation. However, upon closer analysis specific social actions could be identified in relation to the two practices. After an initial count of TCU-initial vowel onsets in multi-unit turns, all such locations in the pilot corpus were analysed. The pilot corpus revealed 36 turn-internal TCU-initial vowels that were either preceded by clear glottalisation, or were directly linked to the previous TCU. A number of TCU-initial vowels were excluded from the collection, either because the glottalisation was very weakly implemented, or because they were preceded by non-verbal activities, such as breaths, coughs or pausing. These instances were not included in the analysis because no meaningful comparison with direct word linking could have been achieved. As a result, all cases presented below are instances of TCU-initial vowels, which occur within a multi-TCU turn, and which follow on directly from a previous TCU by the same speaker.

The following extract shows instances of glottalisation at lines 2 and 3, noted in the transcript as ?; and word linking at line 7, noted as = =. In this section, a caller to a radio phone-in programme is in the process of describing to a radio psychologist a situation that involves his partner and her grandchildren.

(1) Eifersucht: 'Enkelkinder'

- 1 A: ?ihre ?Enkelkinder waren hÄUfiger ?auch scho:n .hh bei
?UNS,
her grandchildren have at times been staying with us
- 2 -> ?un:d die HAben:: STREItigkeiten: (0.16) MITbekOmmen,
and they have witnessed fights
- 3 -> ?und haben davon zu hause ?erZÄH:LT,
and have told their parents at home
- 4 so dass ?ihr VAtter (.) SAGT -
so that their father is saying
- 5 (0.16)
- 6 die SOLlen NICHT mehr zu=uns kommen.=
that they are not to come to us anymore
- 7 -> =und das ?ist=ihr VÖLlig=eGAL.
and she couldn't care less

In this extract, TCU-initial glottalisation is inserted at lines 2 and 3, where the speaker is in the process of delivering a multi-unit narrative. The transcribed section is part of a longer multi-unit turn in which the caller describes his partner's behaviour. The glottalisation precedes individual narrative components, which are projected by prior talk, and which implement the continuation of an ongoing activity (storytelling). For example, lines 1-3 end in rise-to-mid intonation, which routinely projects more talk by the same speaker. Further, the story so far is observably not yet complete, as the turn-in-progress continues to make new story elements relevant. The glottalisation, therefore, is inserted where there is an existing narrative and prosodic link between TCUs as part of an emerging multi-TCU trajectory, and where an ongoing action sequence is being continued. Figures 1 and 2 show oscillograms of the respective transitions between segments. In both figures salient glottal stop insertions can be seen preceding the vowel onsets.

In contrast, line 7 shows a TCU-initial vowel that is not preceded by glottalisation. Instead, the final consonant of the previous word, [kom], is released directly into the initial vowel. The oscillogram in Figure 3 shows no break in phonation between the two sounds. Interestingly, the boundary between the two TCUs is of a different type than those at lines 2 and 3. At the end of line 6 the narrative concerning the grandchildren's visiting pattern is complete, ending in low falling intonation, a typical feature of turn finality (Ford/Thomspon 1996; Ogden 2004; Szczepk Reed 2004). The story completion implements a potential transition relevance place (TRP), that is, a location where potential speaker change becomes relevant. However, although the story is complete, the speaker's turn is not. In his added TCU he delivers an evaluative comment on the narrative that is not directly projected by immediately prior talk, and that implements a new action trajectory, i.e. an assessment. This new action is being integrated into the ongoing turn by joining its initial vowel directly to the final consonant of the preceding TCU.

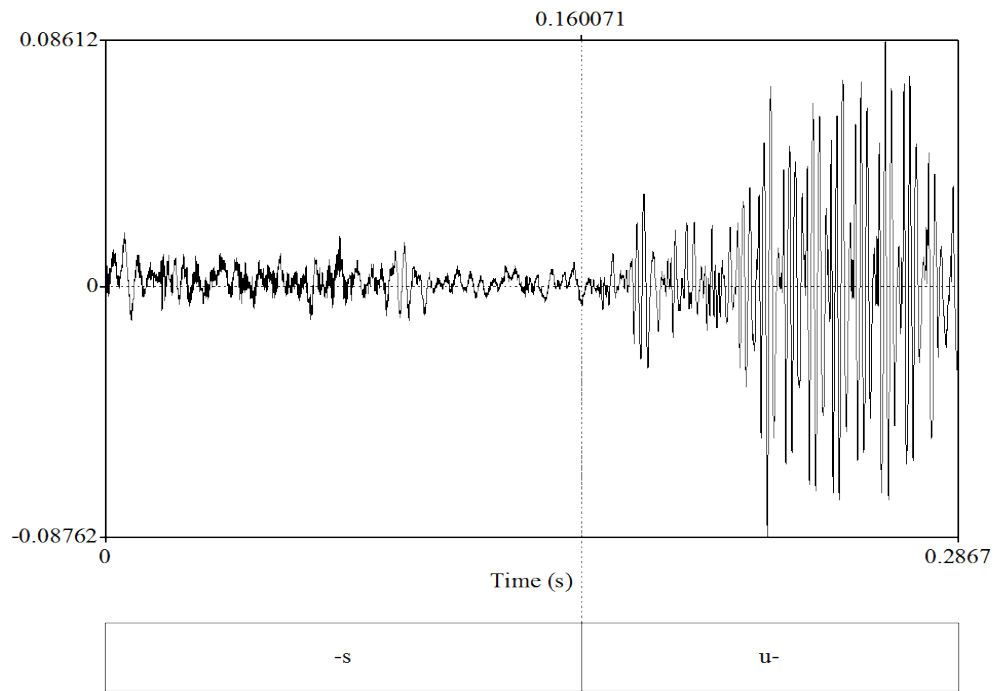


Figure 1. Extract (1), transition from line 1 to 2 with inserted glottalisation before *und*.

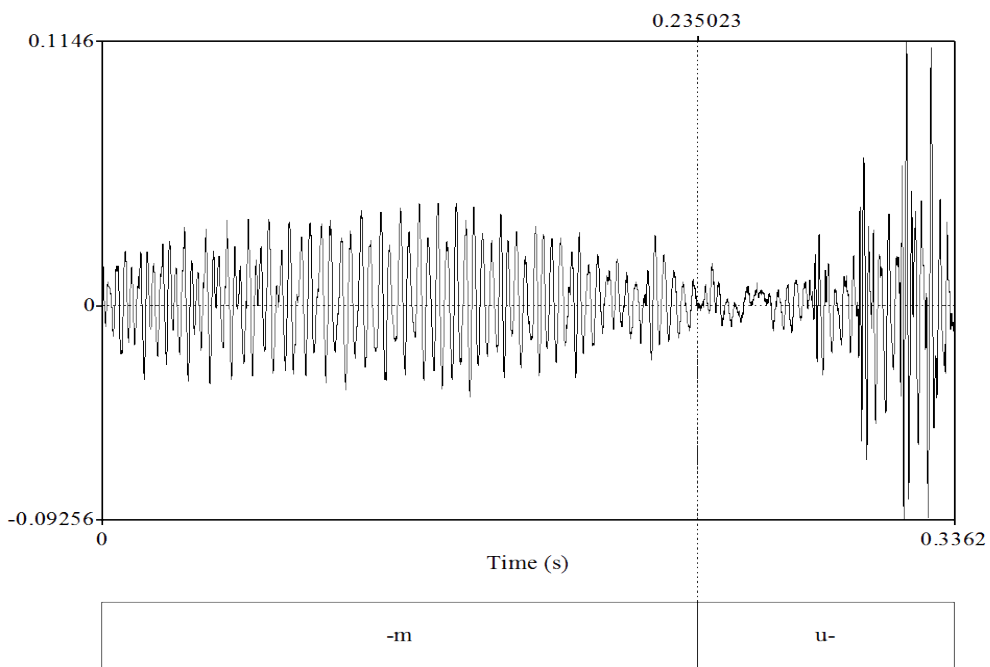


Figure 2. Extract (1), transition from line 2 to 3 with inserted glottalisation before *und*.

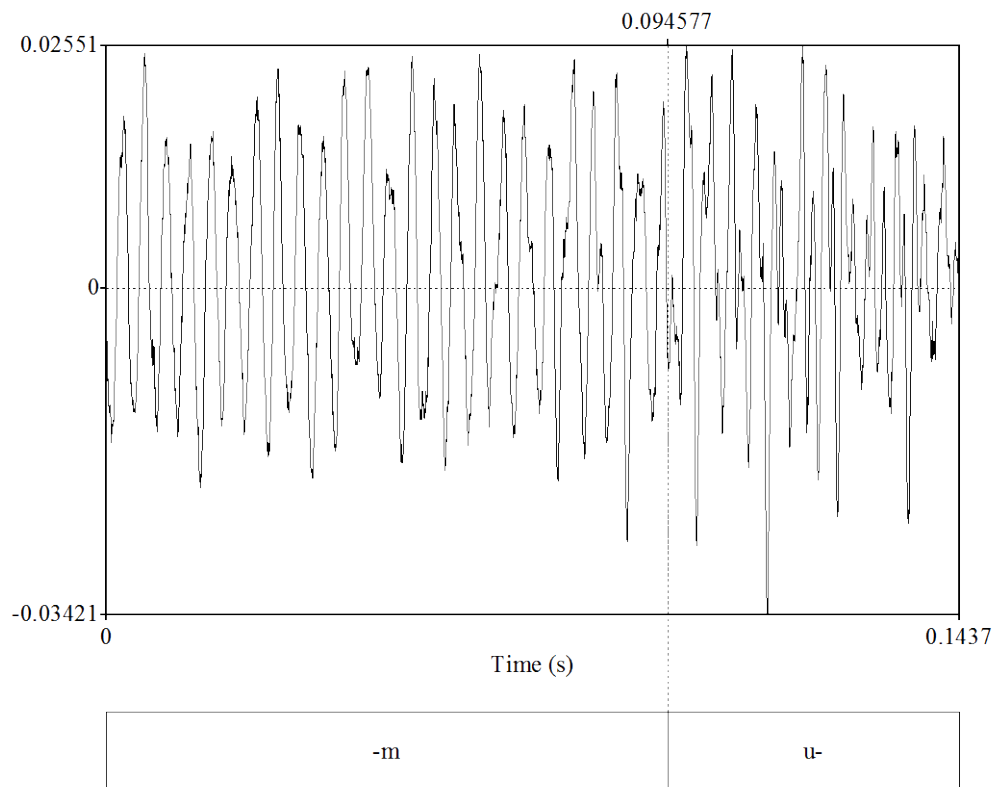


Figure 3. Extract (1), linking from end of line 6 to beginning of line 7.

It must be noted that the overall trajectory of the entire telephone call is a complaint about the caller's partner's jealous behaviour, and it is in this light that the talk must be interpreted here. In this context, the formulation *she couldn't care less* (describing the partner's alleged feelings toward her grandchildren) must be taken as an extreme-case formulation of the complainable behaviour the caller is in the process of depicting. As such, the negative assessment of the behaviour is clearly projected by prior talk in a more general sense. However, on a local level the turn immediately preceding the assessment implements a different activity, i.e. storytelling, and the TCU prior to the assessment ends in a potential TRP. Thus, what is being joined up phonetically are two social actions.

In the following, glottalisation and linking across TCUs will be considered in more detail.

5.1 Glottalisation before TCUs that continue an ongoing action

The following extracts show further examples of glottalisation before TCU-initial vowels that continue an ongoing action. In (2) a female student is in the process of telling her friend the story of a previous neighbour.

(2) Der widerliche Kerl: 'englischer Rasen'

- 1 S2: ?un:dh: bei JEder gelegenheit hat der die poliZEI
gerufen,
and at every opportunity he called the police
- 2 -> ?und sich mit den NACHbarn ?ange[legt,=ne,
and started trouble with the neighbours
- 3 S1: [phhh hohoho
- 4 (1.2)
- 5 S2: wenn da: ?einmal: jEmand zum ?Abschied geHUPT hat,
and if someone would honk the horn to say goodbye
- 6 da war der in NULL komma nix draUßen;
he would be out in a second
- 7 -> ?und hat da RUMgeschrien.
shouting at everyone

Similarly to the previous extract, in this example a narrative is under way, designed as describing inappropriate social behaviour. Lines 1, 2 and 7 represent story components starting with vowels, and of them, lines 2 and 7 follow on directly from previous TCUs without any intervening silence or articulatory activity. Both TCUs are preceded by glottalisation, and once again they are clearly projected by prior talk, both prosodically (rise-to-mid at line 1; fall-to-mid at line 6) and pragmatically, as further instantiations of the described behaviour. They also both lack a subject noun phrase, which is further evidence for their design as being continued from prior talk. Neither of the TCUs in question initiates a new action or topic in next position; instead, they continue the story-in-progress.

A similar pattern is at work in excerpt (3) from the radio phone-in conversation, where glottalisation is being inserted as a previous turn is being recycled lexically.

(3) Eifersucht: 'anrufen'

- 1 M: das HEISST -
that means
- 2 -> sie spricht dazwischen WENN SIE -
she interrupts when you
- 3 mit ?ihrem SOHN telefoNIeren.
are on the phone to your son
- 4 A: ?OH: JA.
oh yes
- 5 (0.34)
- 6 ?ode:r ?es können ?auch ?Andere (.)?ANrufe sei:[n von];
or it can be other phone calls from

- 7 M: [ja?
yes
- 8 A: beKANNTen die=ich ?aus früherer zeit KENne,
acquaintances that I know from the past
- 9 (0.25)
- 10 M: mhm,
- 11 (0.26)
- 12 A: ?ö die bei MIR mal=ANrufen,
uh who may call me
- 13 -> ?UN:D DA:: spricht sie=Absolut da:zwIischen.
and there she interrupts absolutely

The psychologist's question at lines 1-3 contains the lexical items *sie spricht dazwischen*. The caller's answer continues on from an initial *oh ja* (line 4), and once he brings his answer to a close, he does so by recycling the lexical items used by the psychologist earlier: *da spricht sie (...) dazwischen* (line 13). This lexically recycled TCU, which does not contain any new material lexically, sequentially or regarding its social action, is preceded by a glottal stop. It also follows on from previous rise-to-mid intonation, which is another indicator of the speaker's projection of more talk. Thus, once again, glottal stop epenthesis occurs before a vowel-fronted TCU that has been projected by prior talk, and does not initiate a new action or sequence, but continues the an action currently in progress.

In the following extract, the caller is in the process of delivering a list of arguments his partner makes to persuade him to stay with her. The list item at line 5 begins with a vowel, and is preceded by glottalisation.

(4) Eifersucht: 'Kümmert'

- 1 A: sie SAGT natürli:ch -
of course she says
- 2 du bis::t-
you are
- 3 .h du bist schon <<musical interval> ?ÄL:ter: -
you are older now
- 4 du brAUchst jemand der sich ?um dich <<musical interval> KÜMme:rt - >
you need someone to look after you
- 5 -> ?und (sie sagt) wenn du=al<<musical interval>LEIne bi:st - >
and she says if you are alone
- 6 dann kommst du nicht zu<<musical interval>RECHT - >
you won't cope

From line 3 onwards, the list items are produced with a pitch design that resembles a stylized musical interval. On the final stressed syllables in each item, the speaker steps up to a similar pitch level (*älter, kümmert, alleine, zurecht*), and ends with a level pitch accent on each occasion. This means that the TCU at line 5 is clearly projected by prior talk prosodically, and pragmatically as part of the on-going list. As in previous cases, the projected item is preceded by glottalisation.

5.2 Word linking of TCUs that implement new actions

As glottal stop insertion is expected to occur in the majority of vowel-fronted words in Standard and Standard Northern German, cases in which no glottalisation is inserted seem analytically more notable, and a number of instances are considered in the following. In particular, direct word linking is of interest, as it deletes completely any opportunity for glottal closure.

One such example occurs in (5), from the radio phone-in data. Immediately prior to the transcribed talk, the radio psychologist has suggested relationship counselling, to which the caller has replied that his partner had been very hostile to the idea in the past. The psychologist insists that suggesting counseling might be a way forward for the caller.

(5) Eifersucht: 'pessimistisch'

- 1 M: mit ?IHNeN zusAmmeN,
together with you
- 2 ?an ?einer PARTnerschaftsberatung tEilzunehmen.
to take part in relationship counseling
- 3 (0.59)
- 4 wie würde sie DArauf reagIEren.
how would she react to that
- 5 (0.45)
- 6 A: ?ich GLAU:be:: (1.03) ?ABlehnend.
I believe negatively
- 7 ?ich GLAUbe ?ABlehnend;
I believe negatively
- 8 sondern sie würde sagen geh DU da mal hin.
instead she would say you go
- 9 (0.88)
- 10 ?ich BRAUCH das nicht.
I don't need this
- 11 (0.65)

- 12 M: m -
 13 .hh
- 14 A: ?aber=es ?IS für MICH: .hh ?ö::: natürlich MÖglich,=
but it is of course possible for me
- 15 DAS mit ?ihr nochmal ganz ?Ernsthaft zu beSPRECHen.=
to seriously talk this through with her one more time
- 16 -> =aber=ich BIN::: SEHR pessIMISTisch dabei:.
but I am very pessimistic

Similar to line 7 in excerpt (1) (*und das ist ihr völlig egal*), word linking co-occurs here with a sequentially new action that changes the trajectory of the turn so far. The turn expansion at line 16 is initiated with *aber* ('but'), showing a move away from immediately prior talk, in which the caller had conceded to the psychologist's suggestion (lines 14-15). Now, at line 16, he produces an assessment (*ich bin sehr pessimistisch dabei*) that modifies any prior concessions. This new action is linked smoothly to the previous consonant, and thus integrated into the ongoing turn.

As in extract (1), the overall stance of the joined-up TCU is not unexpected, as the caller has clearly expressed his pessimism regarding his partner's attitude towards counselling throughout the entire sequence. However, regarding the local sequential context, his response proper ends at line 15, where low falling intonation and the completion of his conceding talk make turn transition potentially relevant. Thus, as in extract (1), the turn expansion and new action is linked across a potential TRP.

The following extract shows a similar pattern during the opening sequence of the radio phone-in programme.

(6) Eifersucht: 'krankhafte Eifersucht'

- 1 A: JA;
yes
- 2 schönen guten=Abend herr doktor MARKu:s,
good evening Dr Markus
- 3 M: guten ?Abend,
good evening
- 4 (0.6)
- 5 A: ?ich HÄTte gerne ?einma::l -
I would like to
- 6 (0.23)
- 7 ?ei:n (.) proBLEM -
a problem
- 8 mit ?ihnen <<all> beSPROchen - =
discuss with you

- 9 -> =und> ZWAR -
 and PART
- 10 .hh handelt=es sich ?UM:: -
 that is
- 11 die KRANKhafte ?Eifersucht -
 the pathological jealousy
- 12 MEIne:r -
 of my
- 13 (0.42)
- 14 DERzeitigen LEbensgefährtin.
 current partner
- 15 M: ja,
 yes

In this instance the linking occurs across two TCUs (lines 5-8 and 9-14) that are involved in the overall activity of providing the reason for the call. This sequential slot is divided by the caller into two separate actions, a preface TCU (lines 5-8) and the reason-for-the-call TCU (lines 9-14), a structure which together with other delivery features works to delay the final pronouncement of the caller's problem. The prosodic delivery of both the preface (*ich hätte gerne einmal ein Problem mit ihnen besprochen*) and the reason-for-the-call (*und zwar handelt es sich um die krankhafte Eifersucht meiner derzeitigen Lebensgefährtin*) is interspersed by pausing (lines 6, 7, 13) and syllable lengthening (lines 5, 7, 10, 12). However, at the point of joining the two TCUs, the speaker speeds up on the final word of the preface (*besprochen*) and the first word of the new TCU (*und*). This resembles prosodically what Schegloff (1982) has described as a 'rushthrough', a practice that allows speakers to hide a TRP in the fast delivery of the syllables surrounding it. In addition to the increase in speech rate, the two TCUs are linked phonetically together, such that the final consonant of *besprochen* is released directly into the initial vowel of *und*.

A similar interactional use of word linking can be seen in the following two extracts, where TCU-initial vowels are being joined to previous TCUs. Note that the linking occurs across vowels in both extracts.

(7) Der widerliche Kerl: 'Berlin'

- 1 S1: ?und=aber was=aus der FRAU geworden=is weißt du NICH
 ne,
 and but you don't know what happened to the wife do
 you
- 2 S2: NEE::;
 no
- 3 nich geNAU;=
 not exactly

4 -> =aber die=is nach berLIN gegAngen;
but she went to Berlin

(8) Eifersucht: 'insbesondere'

1 M: ?aber sie sAgen sie hat=auch (0.4) gUte
?EIgenschaften.
but you say she also has good sides

2 (0.13)

3 WOran DENKen sie dAbei.=
what are you thinking of there

4 -> =insbeSONdere jetzt=<<p>=in der;>
especially now in the

5 (0.22)

6 bezIEhung zu ?Ihnen -
relationship with you

In both cases, an action is brought to a close, and the same speaker initiates a new action, which expands the ongoing turn, and changes its trajectory. In (7), an answer is provided to a previous question (lines 2-3). The two-part delivery of the answer (*nee nich genau*) shows the speaker to be re-affirming the closing of the answer pair part, before re-opening her own turn space with additional talk (*aber*, line 4). At this juncture between the closing of one action and the initiation of another the TCUs are linked across two vowels (*genau=aber*), see Figure 4.

Similarly, the question posed by the psychologist in (8) comes to a possible completion point at line 3, including syntactic completion and low falling intonation. Questions implement strong projections of speaker transition, and any continuation after a question completion point is likely to require additional interactional work to manage potential incoming talk from another participant. This speaker continues with an additional component, narrowing the set of possible answers (*insbesondere*, line 4). This new and unprojected component is linked across from the final vowel of line 3 to the initial vowel of line 4, resulting in a single [i] sound at the word boundary *dabei=insbesondere* (see Figure 5).

It is important to point out that it is *not* claimed here that new actions are *always* linked directly to prior talk, but that this is a resource participants use to design new actions as integrated into prior talk, when otherwise they may not be. There are, of course, cases in our data set where new actions are designed as new and separate from prior talk. These may well be preceded by glottalisation. The talk immediately following on from extract (1) is a case in point:

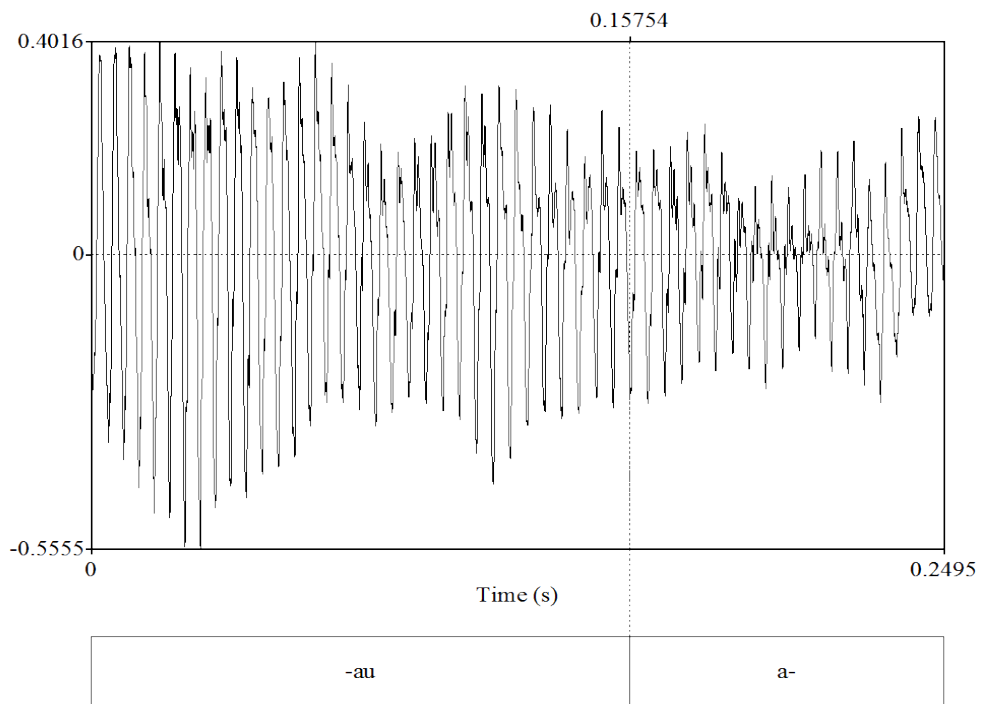


Figure 4. Extract (7), linking from end of line 3 to beginning of line 4.

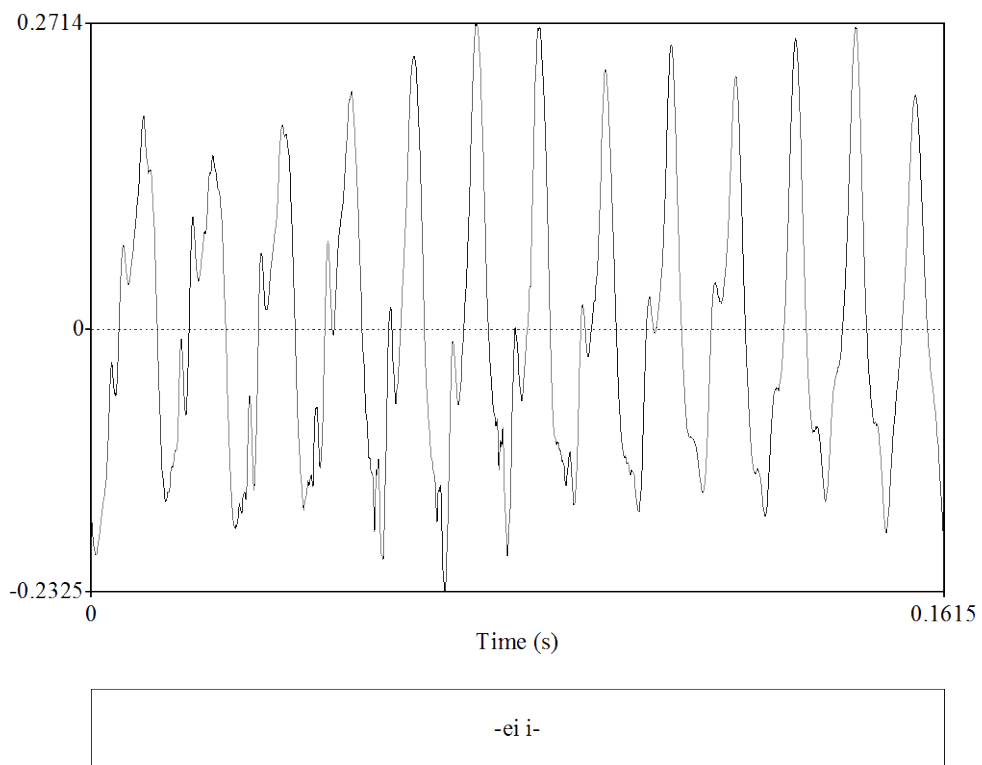


Figure 5. Extract (8), linking from end of line 3 to beginning of line 4.

(1a) Eifersucht: 'Enkelkinder' continued

- 8 A: so dass ?ihr VAter (.) SAGT -
 so that their father is saying
- 9 (0.16)
- 10 die SOLlen NICHT mehr zu=uns kommen.=
 that they are not to come to us anymore
- 11 -> =und das ?ist=ihr VÖLlig=eGAL.
 and she couldn't care less
- 12 (0.22)
- 13 -> ?ich (.) beSCHÄFtige mich natürlich sEhr ?intenSIV -
 of course I am very preoccupied
- 14 ?und DENKe=eigentlich darüber NA:CH -
 and am thinking about
- 15 .hh mich ?EIgentlich zu TRENnen,=
 separating
- 16 =aber das fällt mir nicht ganz ?EINfa:ch,
 but that is not easy

At line 13 a new action is initiated within the same turn, and by the same speaker. After complaining about his partner's behaviour, the caller turns to his own reaction to the situation, which he delivers as an informing (lines 13-16). This entirely new trajectory is separated from prior talk, not only by a glottal stop but also by a pause (line 12). Cases like this were excluded from our specific collection, because the context of multi-unit turn construction is understood here as one in which participants actively design talk as containing more than one unit. Instead, in the case above, a TRP at line 11 does not result in turn transition, and the turn is subsequently expanded, possibly in response to the ensuing pause. The multi-unit nature of the turn after line 11 is therefore not designed as such by the speaker, but is a result of turn taking choices by the co-participant. In this 'banal' case, the glottalisation at the beginning of the new action is not surprising, given Northern German phonology, and the frequency with which glottal stops occur at phrase boundaries more generally.

6. Discussion

Our small pilot corpus of 36 vowel-fronted TCUs contains 16 cases in which glottalisation is inserted before TCUs. 13 of these instances seem to continue a previous sequence or action trajectory. Their locations show some of the features described by previous research as conducive to glottal stop epenthesis: they occur phrase-initially, many of them occur before low vowels (*und, aber*), and there is a potential that the preceding speech rate plays a role, as TCU-final syllables are frequently slowed down. However, the main factor observed in previous studies,

stress, does not seem to play a major role here. Out of our examples above, only (3), line 13, shows a glottal stop preceding a stressed word in this position. Interestingly, lexical connectors (*und, aber*) at turn continuing locations co-occur both with linking and with glottalisation.

The pilot corpus holds 20 cases of TCU-initial vowels that are linked directly across from prior TCUs. This is in itself interesting, as it represents the majority of cases in our pilot corpus, whereas glottal stop insertion is typically described as the default case for Standard and Northern German (the participants in our data are Northern German speakers). 17 of these instances implement new actions or sequential components after prior TRPs. These cases reveal an interesting contradiction with previous findings, particularly those regarding glottal stop epenthesis in phrase-initial position, which has been attested not only for German (Rodgers 1999), but also for American English (Pierrehumbert and Talkin 1992; Dilley et al. 1996, Garellek 2012). These previous findings suggest that linguistic boundaries co-occur with glottal stop insertion. The instances described here show that while glottalisation is indeed employed for the weaker type of boundary in intra-turn position (i.e. action continuation), stronger boundaries between actions may be delivered with direct word linking, in cases where participants design new actions as continuing on from prior talk. The pattern that seems to emerge from this preliminary pilot study suggests that interactants employ the choice between glottalisation and word linking at vowel-fronted TCU boundaries as a systematic resource to structure their talk.

The linking of vowel-fronted TCUs to preceding TCUs is used by the participants in our pilot corpus as a resource for integrating new actions into an ongoing multi-TCU turn. These new actions are linked phonetically across TCU boundaries, that is, across TRPs, where by definition the risk of next speakers coming in to speak is comparatively high. The management of this risk may lie at the heart of a finding that is otherwise surprising, in that it contradicts a hypothetically expectable pattern that where there is a sequential boundary, there should also be a phonetic one. In fact, the speakers in our pilot corpus seem to implement the opposite scenario: where there is a sequential boundary they delete the phonetic one, which allows them to design their talk as continuing phonetically, when sequentially it is not. Word linking, therefore, is not the result of interactional structure, but a participant resource for it.

Local/Walker (2004) have described abrupt-joins, which show similarities to the turn expansions we have considered as instances of word linking here. In both cases, TCUs are added to previously complete turns, and the trajectory of the turn is changed as a result. A major difference seems to lie in the type of change, however: Local and Walker's examples show initiations of new sequential projects, while the turn expansions in our pilot corpus continue the same overall sequential project, but add additional actions, such as assessments or specifications. Interestingly, Local and Walker do not mention linking as one of the phonetic features of abrupt-joins. While they do find assimilation phenomena, and "close temporal proximity of pre-abrupt-join and post-join talk" (p.1394), they do not mention (the possibility of) a direct release of final consonants or vowels into TCU-initial vowels.

In this pilot corpus glottalisation accompanies many instances of continued actions and sequences. It is important to mention here that glottal stop insertion is a

strong feature of Northern German varieties such as those spoken in our data, and therefore its presence must be regarded as arguably the default case. However, there is also an interactional point to be made. Where turn and action continuation is already projected by other interactional resources (lexis, prosody) there is little risk involved in producing a next TCU phonetically as separate from prior talk. Thus, glottal stops, which always bring with them a slight temporal delay, can be inserted without the risk of co-participants starting up.

In the light of the above observations, the following concluding points can be made. Firstly, word linking across TCU boundaries, with prevocalic glottal stop deletion, occurs frequently in German conversation, in contrast to claims by pronunciation guides, which postulate that glottal stops are inserted before almost all German word-initial vowels. Secondly, the variation between glottalisation and word linking is closely linked to the delimitation, or continuation, of conversationally relevant actions, or action components, rather than being (necessarily) phonologically predetermined. Thirdly, rather than considering phonetic practices a result of linguistic and interactional structure, the observations above confirm that they in fact implement structure, and actions.

The observations detailed in this paper are of a highly preliminary nature. The limited data volume does not allow for conclusive claims regarding the interactional role of glottalisation and word linking in German. Instead, this study is only the beginning of a larger investigation into glottalisation in German interaction, and the analysis reported here may well have to be modified in the light of future findings. However, the practices that have been observed suggest that an interactional perspective on segmental features has the potential to enrich phonetic enquiry.

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8. Appendix: Transcription Conventions (adapted from Selting et al. 1998)

Pauses and lengthening

(2.85)	measured pause
:::	lengthening

Accents

ACcent	primary pitch accent
Accent	secondary pitch accent

Phrase-final pitch movements

?	rise-to-high
,	rise-to-mid
-	level
;	fall-to-mid
.	fall-to-low

Pitch step-up/step down

↑	pitch step-up
↓	pitch step-down

Global pitch changes

<<l>>	low pitch register
<<h>>	high pitch register

Volume and tempo changes

<<f>>	forte
<<p>>	piano
<<all>>	allegro
<<len>>	lento

Voice qualities

<<breathy>>	>
<<creaky>>	>
<<harsh>>	>

Breathing

.h, .hh, .hhh	in-breath
h, hh, hhh	out-breath

Other conventions

[overlapping talk
[

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