



Research Article

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Inferential Practices in Social Interaction: A Conversation-Analytic Account

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Abstract: This paper argues that conversation analysis has largely neglected the fact that meaning in interaction relies on inferences to a high degree. Participants treat each other as cognitive agents, who imply and infer meanings, which are often consequential for interactional progression. Based on the study of audio- and video-recordings from German talk-in-interaction, the paper argues that inferences matter to social interaction in at least three ways. They can be explicitly formulated; they can be (conventionally) indexed, but not formulated; or they may be neither indexed nor formulated yet would be needed for the correct understanding of a turn. The last variety of inferences usually remain tacit, but are needed for smooth interactional progression. Inferences in this case become an observable discursive phenomenon if misunderstandings are treated by the explication of correct (accepted) and wrong (unaccepted) inferences. The understanding of referential terms, analepsis, and ellipsis regularly rely on inferences. Formulations, third-position repairs, and fourth-position explications of erroneous inferences are practices of explicating inferences. There are conventional linguistic means like discourse markers, connectives, and response particles that index specific kinds of inferences. These practices belong to a larger class of inferential practices, which play an important role for indexing and accomplishing intersubjectivity in talk in interaction.

Keywords: conversation analysis, inference, third-position repair, ellipsis, analepsis

1 Introduction

One of Harvey Sacks' early lectures was called "the inference-making machine" (Sacks 1992 [1964/65]: 113–125). Starting from the observation that people listening to a story make inferences about who did what and about the credibility of the story, he set the task to "construct the machinery that would produce such occurrences" (Sacks 1992 [1964/65]: 113). While the topic of this lecture (and of others as well) attests to a strong interest in the ways in which cognitive processes figure in social interaction,¹ later research in Conversation Analysis (CA) has largely neglected the fact that meaning in interaction heavily relies on inferences. This is due to CA's insistence on studying observable, public practices of sense-making in social interaction. Conversation analysts reject the explanation of actions in interaction both by normative-deductive appeals to social structure and by recourse to participants' cognitive structures and processes

¹ Sacks' repeated call for constructing a "machinery" or an "apparatus" (Sacks 1992: 226) which produces the observable phenomena of social interaction even seems to resonate with the research agenda of artificial intelligence.

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(te Molder and Potter 2006). Most of them favor cognitive agnosticism (Hopper 2006) and look for self-referential explanations of interactional structures, i.e., treating interaction as a reality sui generis which cannot be explained by recourse to cognitive (or other) causes; in particular, more ethnomethodologically minded researchers are even straightforwardly anti-cognitivist (Coulter 2006). However, over the last decade, the role of epistemics in interaction has become a major topic of CA (which is mainly due to the work of John Heritage, e.g., 2012, but see Lynch and Wong 2016 as a counter-position). It has also been argued that even researchers taking an agnostic stance implicitly rely on cognitive ascriptions to participants in their conversation analytic accounts (Deppermann 2012). In light of this debate, it is far from evident why inferences should be a research topic for CA, and if so, how they show up in conversational organization.

In this paper, different ways in which inferences become relevant to the observable accomplishment of intersubjectivity in sequences of talk-in-interaction will be analyzed. This study draws on data from German talk-in-interaction. The data come from the audio- and video-corpora FOLK (*Forschungs- und Lehrkorpus gesprochenes Deutsch*, ‘research and teaching corpus of spoken German’), youth communication (*Jugendkommunikation*), and talk on TV (*Gespräche im Fernsehen*), which are all hosted at the *Archiv für gesprochenes Deutsch* (‘Archive for spoken German’) at the *Institut für Deutsche Sprache* (Institute for the German Language).²

One obvious type of occasion in which inferences become overtly relevant in interaction arises when responses to a turn rest on inferences that are not accepted by the producer of the initial turn. Extract 1 is an example. Two students are preparing a meal. They are talking about a piece of home-baked pie, which is sitting in the cupboard.³

Extract 1: *couple preparing a meal FOLK_E_00027_SE_01_T_01_c0051*

01 PB °hh was (.) Süßes selbstgebacke[nes;]
 ‘something sweet home-baked’

02 AM [WIRK]lich?
 ‘really?’

03 PB JA_A. (0.3)
 ‘ye_es’

04 AM ja oKAY;
 ‘yeah okay’

05 (1.8)

06 PB werd s jetzt ma WEGschmeißen,
 ‘(I) am going to throw it away now’

07 AM un waRUM denn?
 ‘but why?’

08 (0.7)

09 PB **den MÜLL.**
 ‘the garbage’

10 AM (0.45) ach **ich dachte du SCHMEIßT des süße STÜCKchen weg.**
 ‘oh I thought you are throwing away the pastry’

11 PB °h NEE- hh°
 ‘no_o’

² All data from FOLK are publicly available online for researchers as transcript-sound and partly also video-aligned recordings via <dgd.ids-mannheim.de>.

³ In all data extracts, turns which give rise to the inference analyzed are underlined, turns which display an inference or formulate something which was implied are set in bold face.

PB's announcement in 06 opens up a new sequence: '(I) will throw it away now' (06).⁴ AM necessarily has to infer what PB refers to with the clitic object pronoun -s ('it'). In 07, AM responds to PB asking for a reason, which may be heard as a reproach (cf. Deppermann 2009). In 09, the third position relative to the announcement, PB does not give a reason, but repairs on his turn in first position by making the object-reference explicit ('the garbage'). In fourth position (10), AM accounts for her prior response in second position. Using an *ich dachte* ('I thought')-prefaced turn (cf. Smith 2013), she explicates that her possibly reproach-implicative question rested on an incorrect inference about the intended referent ('the pastry') in PB's first turn (cf. Deppermann and Reineke accepted) – which was revealed to be inadequate through PB's repair in line 09.

In Extract 1, referential inferences matter in all four turns. Most obviously, AM explicates a referential inference in her fourth-positioned turn (10). However, the inference has already been implicitly treated earlier: PB's pronominal reference in first position (06) requires an inference to the intended object; AM's second-positioned question (07) must rest on some understanding of the reference PB had made; PB's third position-repair (09; cf. Schegloff 1997) makes the deictic referent he had implied in first position lexically explicit. Thereby he indexes his analysis of AM's prior turn as resting on an incorrect presupposition, i.e., on an incorrect inference about what he referred to in 06. The turns in second and third position thus rest on inferences and are also treated by participants as resting on (incorrect) inferences, although the inferences as such have not been made explicit. We can also track how the incorrect inference arises: AM treats the object pronoun in 06 as being co-referential with the most recent and topically salient interactional antecedent (01: *was süßes selbstgebacknes*, 'something sweet home-baked'). Her inference thus rests on an anaphoric understanding of the pronoun, which is also supported by the neuter gender agreement between the referential terms *was süßes selbstgebacknes* (01) and the clitic pronoun 's in 06. Yet, PB's reference in 06 implied a deictic understanding of a visible object – he makes clear that he had referred to 'the garbage' in 09. *Müll* ('garbage'), however, has masculine gender in German. Thus, at least from a grammatical point of view, it was not possible for AM to have understood *müll* as the intended meaning of 's in 06.

Like other structures which are constitutive for interaction, inferences mostly remain tacit. Yet inferences which were initially tacit can become observable when they go wrong, i.e., when they lead to interactional trouble (e.g., overt misunderstandings, inapposite responses) and to consecutive efforts to repair a mismatch of interpretations. Inferences become an object of joint construction and negotiation in these kinds of sequences and not just an observer's resource to explain participants' actions. But we see already how inferences-as-a-topic-of-interaction necessarily lead us back to inferences-as-a-resource-in-interaction on which participants' in-situ understandings rest.

In this paper I argue that inferences are an integral part of the subject matter of conversation analysis, because participants treat each other as cognitive agents whose production and understanding of meaning in interaction largely relies on inferences. Therefore, inferential practices in interaction are both a legitimate and an important object for conversation analysis as well. Still, as we have already seen in Extract 1, inferences are displayed in very different ways and to different degrees. As we will see in the following, they matter to interactional practice in very different ways. In what follows, I will first sketch the treatment of inferences as a key topic of pragmatics (Section 2). I will then show that inferences matter to social interaction in three different ways:

- They can be explicitly formulated (Section 3);
- they can be conventionally indexed, but not made explicit (Section 4);
- they can be needed for a correct understanding of a turn and for response generation, yet without being indexed or formulated, but only presupposed (Section 5).

Finally, Section 6 will present a systematics of the constituents of inferential practices in interaction.

⁴ Unfortunately no video is available, which might enable us to see how the misunderstanding of 'it' may have been caused by a failure to accomplish joint attention to the relevant object, the garbage, in 05–06.

2 Inferences in pragmatics

The importance of inferences stands at the very beginning of cognitive psychology and its emancipation from behaviorism. Bruner found inferences to be basic for thinking and understanding, because these processes mostly require “going beyond the information given” (Bruner 1957). When turning to social interaction, inferences have to be distinguished from their counterpart, implications: “Speakers implicate, hearers infer” (Horn 2004: 6; cf. Horn 2012). In linguistics and philosophy, many scholars consider inferences as delimiting the dividing line between grammar and semantics on the one hand and pragmatics on the other hand: Whereas the former deal with what is coded, the latter is concerned with what is implied and inferred (Ariel 2010). Implied and inferred meanings are implicit and cancelable without logical self-contradiction (Grice 1975; Levinson 2000). However, it is up to discursive negotiation whether disclaiming inferred meanings as not having been meant will be accepted by interlocutors (Haugh 2013). Inferences are cued by indirectness (indirect speech acts, Searle 1975) and thus account for pragmatic surplus meaning in talk. Inferences only arise in context, given the utterance and certain contextual conditions (Sperber and Wilson [1995]1986). Inferences also make for the difference between literal meanings (in Gricean terms: what is said) and communicative meanings (what is meant, which corresponds to what is said plus what is implicated, i.e., to be inferred; cf. Grice 1989).

However, these distinctions are not as straightforward as they seem. The identification of propositional content often itself requires inferences, as in the case of ambiguity resolution and also in many cases of reference, e.g., as we could see in Extract 1, in some instances of deixis (see Récanati 2002). In other cases, pragmatic enrichment is necessary to understand certain phrases although they are not considered to be elliptical, e.g., *he is ready* (+>⁵ ‘to do something’), *this is my bus* (+> the one I own/have rented/have to take), *I have already had dinner* (+> ‘today’; cf. Carston 2002 “explicatures”; Bach 1994 “implicatures”). Another variety of implications and inferences that are fairly independent of context are generalized implicatures of default meanings (Levinson 2000), e.g., *some people came* (+> ‘not all’), or uses of indefinite articles to be understood as non-recognitional forms like in *Peter met a woman in NY* (+> ‘not his wife’). These phenomena and others (like scalar implicatures, e.g., Horn 1989) show that inferences arise not only from flouting Gricean maxims (cf. Grice 1975), but also from communicating in keeping with the maxims. In the classic treatment of inferences, a two-step approach was used to analyze non-literal meaning, supposing that literal meaning is recovered first before non-literal meaning that relies on inferences is computed. Psycholinguistic studies, however, have shown that the more immediate default interpretation often is not the literal meaning (cf. Gibbs 1994 on understanding figurative language and indirect speech acts; but see Noveck and Sperber 2007 on contrary findings for generalized implicatures). While these latter approaches of experimental pragmatics and relevance theory explicitly treat inferences as cognitive processes, Grice (1975) and Neo-Griceans (Levinson 2000) derive them from principles of rational cooperation. A different understanding of the ontology of inferences, which is more akin to the methodology of conversation analysis, is to consider them within the framework of the socio-normative accountability of meanings, which speakers can be held accountable for in discourse (Haugh 2013, 2015). Inferences in interaction matter well beyond implicatures, explicatures, etc., because the “inferential substrate” (Haugh 2017) in social interaction concerns all sorts of attributions of participants’ motives, knowledge, common ground, identity claims, self- and other-positioning, etc., which can be associated with their discursive actions. Inferences therefore permanently matter to interactive practice, although they only rarely become exposed by actions which address them as such and treat them as consequential for the interactional exchange (Haugh 2017).

Studies on inference in pragmatics have almost exclusively focused on the attribution of inferential meanings to isolated sentences in a stipulated context. It was John Gumperz who brought the notion of ‘conversational inference’ (Gumperz 1978, 1982) to bear on the analysis of naturally occurring interaction. According to him, cues of utterance-design (mainly code-choice, prosody, and formulaic expressions) lead

⁵ In this paper, “+>” means ‘implies/leads to the inference’. “+>” is thus used more broadly than in Gricean pragmatics where it only refers to implicatures, but not, e.g., to referential closure, analepsis resolution, or explicatures.

to inferences about the speaker's meaning by virtue of culture-specific contextualization conventions. Inferences in his studies concern emotional and evaluative stances towards content and addressee, situated identities indexed by talk, the discursive status of an utterance as foregrounded or backgrounded, etc. Although Gumperz's approach deals with conversational data and aims at explicating the participants' perspective, it is quite different from conversation analysis because of his different notion of 'context'. Analysis of conversational inference rests on ethnographically informed interpretation rather than on proofs derived from the (ensuing) interactional sequence. It locates the sources for inferring in background knowledge in the sequence of prior turns.

'Inference' is a theoretical notion, which has been used to account for non-literal interpretations. If 'inferences' are to matter for conversation analysis, we need to give evidence that 'inferences' also matter to participants in interaction. In other words, we would have to show that participants orient to the relevance of the code-inference distinction. One way to do this would be to study the use of folk terms such as *mean* (vs. *say*), *adumbrate*, *hint at*, *insinuate*, *want to* [plus verb of communication], etc. (cf. Sidnell/Enfield 2014). In this paper, we will pursue a different approach by investigating into how participants display that they are implying and inferring, i.e., in order to understand each other as meaning more than just what has been said (communicative intentions).

3 Making inferences explicit

Formulations of an interlocutor's prior turn in a next turn are a primary interactional practice of making inferences explicit. In turn-initial position, certain connectives (like English *so*, Blakemore 1988, 2002; see also Raymond 2004) display that an upcoming formulation is to be understood as an inference from the prior turn. Formulated inferences can stand in quite different kinds of relationships to the turn(s) they are drawn from: They can formulate a gist or an upshot (Heritage and Watson 1979, 1980), summarize a lengthy description by a handy notion (Deppermann 2011), explicate something which was only implicitly adumbrated (Bolden 2010), or even challenge (Antaki 2008). In German, turn-initial *also* ('so') and *dann* ('then') can be used to index different kinds of inferences (Deppermann and Helmer 2013): While *dann* displays that an upcoming formulation expresses a unilateral inference from a co-participant's prior turn which is not claimed to be intersubjectively shared (Section 3.1), *also* indexes that the formulation purports to explicate what the prior speaker has implied (Section 3.2). Explications of inferences with *wollen* ('want') specifically address the implicit intentions of the prior speaker as key to an understanding of the meaning of their action (Section 3.3).

3.1 Unilateral inferences with *dann* ('then')

We found *dann* to be used as indexing an inference which the speaker draws from an interlocutor's prior turn, but which the speaker does not expect to have been meant or to be confirmed by the prior speaker. In our data,⁶ this occurs mainly in conflict talk, like TV debates, when speakers formulate inferences from an opponent's previous turn. Extract 2 is from a broadcast talk-show. The participants are talking about life in former East Germany. The host SH asks DO, who lived in East Germany, about motives for friendship in East Germany. MA, who is a guest originating from former West Germany, formulates unilateral inferences from DO's answers.

⁶ The findings reported in this paper rest on the analysis of transcribed audio- and video-recordings of German talk-in-interaction in informal, institutional, and mediated settings (talk shows, public mediation sessions). All data are hosted at the Archiv für gesprochenes Deutsch ('archive of spoken German') at the Institut für Deutsche Sprache Mannheim. Data from the corpus FOLK (see transcription headers) are available online via <dgd.ids.mannheim.de>. More detailed information on the corpora used can be found in Deppermann and Helmer (2013) for the use of *also* and *dann* in formulations, in Betz and Deppermann (2018) for *eben* as a response particle, and in Helmer (2016) for varieties of topic-drop analepsis.

Extract 2: *talk show (IDS-AGD Gespräche im Fernsehen 4050.207, freundschaft/ beklagen)*

01 SH wart ihr NUR gut befreundet--
 'have you only been good friends'
 02 =weil der eine n BOOT hatte und der andere ne DATsche
 'because one had a boat and the other had a cottage'
 03 [oder ((lacht))]
 'or' ((laughs))
 04 DO [nee auf KEIN fa]ll--=
 'no definitely not'
 05 =sondern weil wi:r als MENschen zusammenjелеbt haben--
 'but because we lived together as humans'
 06 =i[n (jeder) hinsicht-]
 'in every respect'
 07 MA [nja **dann GEH ich mal da**]von aus,
 'well then I assume'
 08 **dass die freundschaft auch jetzt noch beSTEH[T.]**
 'that the friendship still exists'
 09 DO [auf]
 (az) auf gez auf JEden fall.=
 'at xxx at xxx at any rate'
 10 =al[so die FREUNDSchaft(en),]
 'well the friendship(s)'
 11 MA [naJA **dann wirst du das ja wohl ni]cht beKLagen.**
 'well then you won't complain about this'
 12 DO ich KANN nich--=
 'I cannot'
 13 MA =und zu DIR möchte ich nochmal sagen,
 'and I wanted to tell you PTCL'
 ((addresses different recipient))

In 07–08 and 11, MA formulates inferences from DO's preceding turns. Both formulations amount to a challenge of the position which DO had taken earlier, namely, that social relationships have gotten worse since the German "Wende", i.e., the reunification of West and East Germany. Given that DO's statements hold true, MA infers that the former friendships still exist and that DO will not complain about this; the formulation of the inference thus is built to undermine DO's position by highlighting it as self-contradictory. Both the design of MA's formulations and DO's responses to them provide evidence that MA's inference-formulations make for oppositional moves. The first inference formulation *dann geh ich mal davon aus dass die freundschaft auch jetzt noch besteht* ('then I assume that the friendship still exists', 07–08) interrupts DO's ongoing turn and is presented as a subjective inference ('I assume'), not as an explication of DO's speaker meaning. Nevertheless, it is presented as an inference that claims validity or at least a high probability of accuracy. DO starts to produce an elaborate confirmation (09–10), however, with a syntactically independent statement. MA interrupts DO again in 11, producing another inference-formulation (*dann wirst du das ja wohl nicht beklagen*, 'then you won't complain about this'). In addition to *dann*, the epistemic modal particle *wohl* indexes that this inference rests on MA's own plausibility judgment (cf. Schulz 2012). As DO starts to respond in 12 (again with a syntactically independent turn), MA cuts DO off and shifts the recipient of his turn in 13, thus showing that he does not expect a confirmation of his inference from DO.

Dann-prefaced inferences from a prior turn are unilateral inferences. They do not purport to express what the other speaker presumably meant, but they are used to reveal the recipient's conclusions from the prior speaker's turn, which often have clearly not been intended by the prior speaker. Consequently, no confirmation by the prior speaker is sought. In our data, these unilateral inferences are often produced in

multi-party contexts. They are, however, addressed to an overhearing audience to reveal inconsistencies, incompetence, etc. of the opponent, rather than being offered as statements to be treated by or even to convince the opponents themselves (cf. Heritage 1985; Drew 1992).

3.2 Intersubjective inferences with *also* ('so')

In contrast to *dann*, *also* ('so') projects an intersubjective inference which is expected to be confirmed by the co-participant as having been meant. Extract 3 comes from a driving lesson. Before the extract, the instructor made the student driver stop the car in order to initiate a knowledge-check (see Deppermann 2015). Having clarified that the road ahead is to be defined as a "street" (and not an entrance to a private property), the student draws an inference concerning the correct driving directions.

Extract 3 : *driving lesson FOLK_E_00083_SE_01_T_01_DF_01_c863_19:55-20:12*

01 IN: °HHHH KÖNnen wir gradeaus fahren?
 'can we drive straight on?'
 02 (0.7)
 03 ST: NEIN.
 'no'
 04 IN: (0.2) DOCH.
 'of course!'
 05 IN: könn wir WOHL;
 'sure we can'
 06 (0.5)
 07 ST: is das ne <<pp>STRAÙe;>
 'is this a street?'
 08 (0.5)
 09 ST: JA-
 'yes?'
 10 (0.6)
 11 IN: [und DA] müssen wir hin;
 'and that's where we have to get to'
 12 ST: [**also**]
 'so'
 13 (0.5)
 14 ST: **also FAHRstreifen+wechsel;**
 'so (it's) a change of lane'
 in: +nods
 15 IN: JA,
 'yes'
 16 und DEN hättest du vorher schon sehen könn_n,=
 'and you could have seen this already before'
 17 =wenn du da WEIT genug reinguckst,
 'if you look far enough into it'
 18 (.) UND,
 'and'
 19 soBALD du es erkennst,
 'as soon as you recognize it'
 20 das ABänderst.
 'you change it'

Jörg's inference (03) is to expose Markus' allegedly real motive for his offer: Instead of the altruistic action which Markus claims (highlighting the beneficiary role of his peers in a hyperbolic, ungrammatical construction by saying that he would give shots 'for you', *für euch*, 01), Jörg claims to uncover Markus' hidden egoistic motive. His displayed altruism thus is revealed to be a pretext for egoistic benefit. The grading particle *nur* ('only', 03) re-ranks Markus' offer on a moral scale, assigning it a much lower position than Markus claimed for it. In this case, it is a third person who makes the exposition of an immoral motive explicit in the guise of a warning to the primary addressee Denis, who owns the joint. As in the case of *dann*-formulations (see Section 3.1), the inference is unilateral: The speaker even claims epistemic authority regarding the mental processes of the person to whom the motive/intention is ascribed without seeking confirmation. Again, at least in the triadic participation framework of the extract, this is a practice which is designed to persuade third parties.

The ascription of strategic action and hidden motives or intentions is only one way in which *wollen*-ascriptions are used (see Deppermann and Kaiser in prep.). Other practices the speaker using a *wollen*-ascription to check which action was intended by the partner, and the ascription of strategies which are not understood to have been communicated, but are treated as being unproblematic. The kinds of intentions that are ascribed are manifold: They range from implicatures whose recognition is understood to be intended to concealed motives, from local meanings to larger strategies governing the conduct of a person over an entire interaction, and from serious enquiries to jocular teasing. Yet, importantly, all such different uses seem to be in service of the coordination of joint action, as we could see in Extract 4: The identification or checking of another's intention is consequential for the planning and adequacy of one's own (or third parties') actions and for the anticipations of next actions of the person to whom the intention or motive is ascribed (see also Enfield and Sidnell 2017).

4 Conventional indexing of inferences

Inferences can be indexed in rather context-dependent ways through prosody, lexical choice, certain grammatical constructions, etc. However, there are also conventional means which are specialized in indexing inferences, but without making them explicit. One such item is the German response particle *eben*. *Eben* is an agreement token. Like *genau*, *richtig*, and (*das*) *stimmt*, it is used to confirm the preceding turn (Betz 2014; Oloff 2017). However, unlike other particles used for confirmation, it exhibits a double indexicality (Betz and Deppermann 2018):

- it confirms the prior turn;
- it indexes at the same time that the prior turn follows from what the *eben*-speaker has already said before.

In Extract 5, four friends are cooking together. EW has just described a trip to Bolivia as *so cool* (01). DW complains about her own lack of spectacular vacation experiences (03). With this self-deprecating formulation, DW may be fishing for a disagreeing positive assessment (Pomerantz, 1978). EW rejects DW's self-positioning as an unwarranted complaint (04, 06).

Extract 5: *Friends cooking together FOLK_300_c1017*

```
01 EW: das is so COO:L.
      `that's so cool'
02     (1.3)
03 DW: <<whiney>ich hab noch NET so was <<p>cooles gemacht.>>=
      `I have not done anything that cool yet'
04 EW: =[t_AChh; ] (0.2)
      PTCL
05 CS: [<<p>hähä->]
      ((laugh particles))
```

- 06 EW: KOMM !LA!+ber net,+
 'come on chatter/blabber not'
 dw +smiles--+
- 07 DW: DOCH ich hab schon AUCH <<p>coole sachen ge[macht;]>
 'yeah I've also done cool things'
- 08 EW: [Eben.]
 PTCL
- 09 (0.9)
- 10 DW: das COOLste was ICH glaub ich gemacht hab=
 'the coolest thing I think I've done'
 11 =war so ne huskytour in (.) in l[appland.]
 'was a husky tour in in Lapland'
- 12 XW1: [oah]
 'wow'
- 13 CS: GEI[L. so was is echt]=
 'awesome that's a kind of'
- 14 EW: [jA (.) siehst d↑u?]=
 'yes (you) see'
- 15 CS: =[das is auch ge:il_]
 'that's also really awesome'
- 16 EW: =[und ↑DANN sagst du hast noch nichts coo]les ge↑macht(h)=
 'and then you say you've not done anything cool yet'
- 17 DW: =(oh) DOch das wa:r=äh (.) ultraschön;
 '(oh) yes that was uh super beautiful'

With *t_{ACHh}*; *komm laber net* (04/06), EW rejects DW's negative assessment of her own experiences as exaggerated and thus incredible. The discourse marker *komm* requests an activity shift by reference to the common ground of what normatively constitutes an appropriate action (Proske 2014). In response, DW backs down from her earlier position '(yeah) I've also done cool things' (07). The turn not only revises her stance but explicitly aligns with what was indexed by EW as common ground in line 06. By confirming DW's back-down with *eben* (08), EW accepts DW's revised position while marking it as not new information. *Eben* establishes an inferential connection between DW's revised claim and EW's own prior position (conveyed in 04/06). In this example, *eben* contributes to faulting a co-participant for an unwarranted complaint and for having failed to consider what is in common ground. The interaction following the *eben* turn supports this. DW provides evidence for her revised claim in 10–11, EW receipts this as evident in 14 (*siehst du* 'see') and highlights again the contrast between DW's earlier assertion and her actual experience. This leads to another back-down by DW (17).

Eben retrospectively indexes that the confirmable (here: DW's back-down in 07) is inferentially related to an anchor (here: EW's rejection in 04/06), i.e., the confirmable provides ground for or is itself to be inferred from knowledge or a position that the *eben*-speaker had expressed before.⁷ The three-part structure 'anchor-confirmable-*eben*' is a "retro-sequence" (Schegloff 2007: 217–219). It is only via the *eben*-turn that the confirmable is retrospectively treated as inferentially related to the prior anchor. The anchor itself did not project the confirmable, nor did its producer frame the confirmable as building inferentially on the anchor. *Eben* only implies an inferential relationship between the confirmable produced by the recipient and the prior talk produced by the *eben*-speaker herself. Neither the anchor nor the precise ways in which the confirmed turn follows from or supports the anchor are formulated by *eben*. *Eben* thus leaves it up to the recipient to identify the precise nature of the inferential relationship between the confirmable and the

⁷ *Eben* is never used for confirmables that just repeat an anchor. It indexes an inferential relationship between anchor and confirmable, never just a claim to prior knowledge. If an anchor has not been provided, the *eben*-speaker almost always gives post-hoc evidence of their independent knowledge.

anchor, including the identification of the anchor itself. At any rate, *eben* serves as a display of epistemic independence, which, often, but not always, amounts to a claim to epistemic superiority (cf. Heritage and Raymond 2005).

5 Inferences presupposed for understanding

The most pervasive, but overwhelmingly tacit way in which inferences come into play in interaction is their use for identifying references. Of course, not all references need inferences to be recovered. Yet, analepsis and ellipsis require that the recipient draws inferences about non-expressed references to persons, objects, times, places, actions, events, or states of affairs in order to arrive at the correct understanding of a turn in question. While analepsis builds on “structural latencies” (Auer 2014, Auer 2015) of prior talk to be used to recover non-expressed constituents, ellipsis requires world-knowledge or joint visual access to referents for a correct understanding (Hoffmann 1999).

Let us begin with topic-drop analepsis. These are turns in which a constituent expressing the topic of a prior turn (or turn-constitucional component) is omitted (Helmer 2016). Analeptic turns without object (*denk ich auch*, ‘think I also’) or even without any argument (*weiß nicht*, ‘don’t know’) are common in German. In analeptic turns, an argument is omitted which is obligatory from a normative-grammatical point of view (represented in the following transcripts by \emptyset) and whose meaning is a necessary part of the meaning of the turn. In order to resolve the analepsis, the hearer has to identify its antecedent in prior discourse. This requires inference, because this is often not simply a matter of “copying” an antecedent which has been mentioned overtly. Prior discourse may offer several candidates for analepsis resolution among which the hearer has to choose on inferential grounds (Helmer 2016: 185–187). An example of this can be seen in Extract 6 from a leisure-time conversation among friends talking about music.

Extract 6: *conversation among friends FOLK_00066_SE_01_T04_c393*

```

01 UD [jan] de[LAY.      ]
      `Jan Delay'
02 JO      [de jan DE]lay,
      `Jan Delay'
03  gen[au:==der (macht) des auch;]
      `exactly he (does) this too'
04 AL      [schneewittchen oder so war] en lied von IHM; ne?
      `Snow White or something was a song by him, right?'
05  (0.8)
06 UD schneeWITTchen?
      `Snow White?'
07 AL (.) ja;
      `yes'
08  (1.1)
09 UD [von udo LINDen]berg?
      `by Udo Lindenberg?'
10 PA [schneewittchen]
      `Snow White'
11 AL ja; (0.4)
      `yes'
12 PA  $\emptyset$  KENN      i nich;=
      know.1SG I NEG
      `I don't know'

```

- 13 UD = Ø **wusst** ich jetzt NICH; (0.6)
 know.1SG I now NEG
 'I don't know now'
- 14 AL Ø **war** ziemlich **am** **ANfang**.
 was.3SG quite at-the beginning
 '(it) was quite at the beginning'
- 15 (0.9)
- 16 PA Ø **kenn** **isch** NISCHT; (0.3)
 know.1SG I NEG
 'I don't know'
- 17 UD ähm (0.3) Ø **kann** SEIN aber ich kenn_s nIch. (0.6)
 PTCL may.3SG be.INF but I know.1SG-it NEG
 'erm (it) may be but I don't know it'

In the most straightforward case, topic-drop analepsis co-refers to an antecedent constituent which can be copied from a prior turn: *schneewittchen von udo lindenber*, 06/09, is the antecedent for 12, 14, and 16. However, there are also more complex cases of analepsis (cf. Schwarz-Friesel and Consten 2011 for complex anaphora), as in 13 and 17: Here the analepsis refers back to a proposition from prior discourse (*dass schneewittchen ein lied von udo lindenber war*), which has to be assembled inferentially from several prior turns (04, 06, 09, 10) and which had to be adapted syntactically from main to subordinate clause if it was to fit the analeptic clause. Although analepsis often builds on adjacency (like in 12), antecedents may also be more remote (13/17).

The inferential work recipients have to carry out here does not show up in their responses. As analysts we are often able to recover the inferences needed for a correct understanding. However, we do not have any evidence that the interlocutors share them. Thus, it can be shown that it is necessary to presuppose these inferences to account for the intelligibility of the talk, but we often cannot provide evidence, relying on CA-methodology, that and how inferences are consequential for the deployment of the ensuing talk. They remain implicit. Probably, at least in most cases, it is precisely because interlocutors share the same inferences that the future interaction proceeds smoothly.

In order to prove that the inferential closure of analepsis, ellipsis, and anaphora is empirically real for the participants, we can look for cases in which it shows up at the interactional surface. This happens in cases which are deviant in the sense that inferences are formulated to repair incorrect understandings of analepsis, ellipsis, or anaphora. We have already seen in Extract 1 how third-position repair of an inference is used for repairing a misunderstanding of an anaphora and how the wrong inference is explicated in fourth position in order to account for an action which can be seen as having been inadequate in light of this misunderstanding.

Extract 7 shows how an incorrect inference from an analepsis arises, because the prior discursive anchor is only rather indirectly related to the meaning of the analepsis. A student couple is finishing their meal at a restaurant. They are considering having the remains of their meal boxed up to take home. PB suggests this, however he categorizes the request as *unverschämt* ('brazen'). His girlfriend objects.

Extract 7: *couple dining in a restaurant, FOLK_E_00047_SE_01_T_01_DF_01, 00:29:49.41 - 00:30:55.91*

- 01 PB okay vielleicht muss_ma DOCH so:- h° (.)
 'okay perhaps we have to be so'
- 02 Unverschämt sein und uns des EINpacken lassen;
 'brazen and make (them) box this for us'
- 03 (1.55)
- 03 AM <<chewing> was is daran (0.4) UNverschämt->
 'what is brazen about this'

- 05 PB (1.6) JA:: eigentlich nix;
 'well actually nothing'
- 06 (1.4)
- 07 AM ((smacks)) aer ich ZAHL doch dafür-
 'but I'm paying for it though'
- 08 PB hat nur so ne MITnahmekultur;
 '(it) only kinda has a culture of take-away'
- 09 (0.9)
- 10 AM hm;
 'uh'
- 11 (1.55)
- 12 AM is nur in deinem KOPF;
 '(it) is only in your head'
- 13 (1.0)
- 14 PB hm?
 'huh?'
- 15 AM (0.2) s_in deinem KOPF **des problem**.
 '(it) is only in your head, the problem'
- 16 (2.0)
- 17 PB ja:.
 'yes'

The turn *is nur in deinem KOPF* ('is only in your head', 12) is a particularly complex case of analepsis, because it has no co-referential antecedent. PB in line 14 produces an open-class repair-initiator (Drew 1997), which AM interprets as evidence that PB is not able to recover the subject-referent of her analeptic turn in 12. She repeats the analepsis and then adds the referent by right-dislocation – *des problem* ('the problem'). This phrase and therefore also the analepsis that it repairs have no straightforward antecedent that could simply be copied from any prior utterance. It is only inferentially related to several anchors in the prior talk: PB's categorization of their request as *unverschämt* ('brazen', 02) and his deprecatory assessment *hat nur sone mitnahmekultur* ('(it) only has kinda culture of take-away', 08) index that PB has a "problem" with requesting to take the rest of the food home. This is a case of indirect analepsis (Helmer 2016: 150–166; cf. Schwarz-Friesel 2007 for indirect anaphora): The analeptic structure is not co-referential, but only metonymically related to possible anchors. Because of this inferential complexity, it is one of the relatively few cases in the data I have inspected in which it becomes evident by repair-initiation and following third-position repair that a participant has failed to recover the meaning of an analepsis.

Third-position repair is also at work in the next series of extracts, which is a particularly complex case. Here, an ellipsis⁸ causes a misunderstanding, which is due to different next joint projects which are possibly in play in the interactional situation. Extract 8 is from a public mediation session concerning the six billion Euro train station construction project, Stuttgart 21. The extract, however, does not have do with the more serious business of these sessions. It starts after an expert's lecture. The mediator and chairman Heiner Geißler (HG) asks 'where are we' and states the time (half past twelve, 02–03). A member of the parties present shouts *die magistrale* ('the mainline'), thereby suggesting the topic to be dealt with next (04). HG now asks *soll wa vielleicht* ('shall we perhaps', 05) and turns to the next two speakers on the agenda, VK and TG. Note that *soll wa vielleicht* is elliptical: Since the infinite verb is missing, what should be done is not stated. Volker Kefer (VK) treats this elliptical interrogative as an offer (or even a request) to present his position on the mainline (08–10).

⁸ We have, however, already seen that the distinction between analepsis and ellipsis is not that clear-cut. Indirect analepsis and the choice between different, grammatically suitable fillers available in prior talk to fill the analepsis both require pragmatic reasoning for the resolution of the analepsis just as is usually required for ellipsis.

Extract 8a: *public mediation session FOLK_E_00064_SE_01_T_05_DF_01, 00:15:50.64 - 00:17:17.60*

01 HG also jetzt-
 'so now'
 02 wo sin_wa,
 'where are we'
 03 (0.4) jetzt ham_ma halb eins;
 'now it's half past 12'
 04 XM die magistRAle;
 'the mainline'
 05 HG soll wa vielleicht herr KEfer, (.)
 'shall we perhaps mister Kefer'
 06 frau GÖnner,
 'Mrs Gönner'
 07 (3.9)
 08 VK ähm, °h (.) ((clears throat)) ich würde gerne ein bisschen (.)
 'erm I would like a bit'
 zur (.) zur Aufklärung einiger MISSverständnisse was beitragen.
 'to contribute to the clarification of some misunderstandings'
 09 HG is schon bei magiSTRale?
 'is at the mainline already?'
 10 VK **magiSTRale;=ja.**
 'mainline yes'

HG's elliptical interrogative *soll wa vielleicht* ('shall we perhaps', 05) only includes a deontic modal verb, but no categorization of the action to be performed. VK infers from it that the next point on the agenda is the mainline and starts to talk about it (08/10). The mainline had also been made salient before as next topic by a heckler in 04. So, both background knowledge about the agenda and a discursive antecedent (by the heckler) suggest this inference. However, it turns out that HG has implied something else. He interrupts VK in 09 and then initiates a repair:⁹

Extract 8b: *public mediation session FOLK_E_00064_SE_01_T_05_DF_01, 00:15:50.64 - 00:17:17.60 cont.*

11 HG aso::, (.)
 'oh'
 12 **ich dachte wir wollen jetzt MITtagessen;** (.)
 'I thought we wanted to have lunch now'
 13 TG [aso:- ((laughs))]
 'oh'
 14 VK [nee nee; ((laughs))]
 'no no'
 15 TG aso:,,=**sie wolle jetzt strukturIE[re und dann] ESse-** ((lacht))
 'oh you want to structure now and eat afterwards'
 16 VK [ach **sie wollen,**]
 'oh you want'
 17 HG ((laughs))

⁹ *Ich dachte* ('I thought') in 12 is used differently from its occurrence in Extract (1). Here it is used as a second-positioned repair-initiation which states an assumption of its speaker that is discrepant with the interlocutor's prior turn. The *ich dachte*-turn calls upon the addressee to give an account for why the speaker's assumption does not hold (anymore) (Deppermann and Reineke accepted). In 12, *ich dachte* works as a third-position repair as well, because it makes explicit the action that HG had been proposing in 05.

- 31 =und dann ANschließend die punkte wie sie also wir überlassen des
 'and then afterwards the points as you so we leave it'
 ganz Ihnen wenn sie jetzt lieber mittag machet;
 'fully up to you if you prefer to have lunch now'
- 32 HG °h weil ich hab noch ni[ch so-]
 'because I still do not have so'
- 33 TG [nich dass ma na]chher für die magischtrAle
 ä STUNde brauchet==
 'not that we need an hour for the mainline then'
- 34 TG =und dann (.) s mittagesse NOCH weiter na[ch hinten schieben muss.]
 'and then have to defer the lunch still further to the back'
- 35 HG [wir können die magistrale
 ja] unterBREchen,
 'we can interrupt the mainline'
- 36 °h also ich hab noch nich so arg HUNger,
 'well I am still not that hungry'
- 37 °h deswegen mach_ma jetzt WEIter;
 'therefore we continue now'
- 38 PU ((laughter))
- 39 HG also (.) jetzt äh zur (.) magiSTRAlE;
 'so now to the mainline'

HG denies the inference that he wanted to have lunch (25), which – as TG did before in 15 – VK expresses in overlap with HG (24). Instead, HG offers to start the discussion of the mainline immediately and proposes that they order lunch for one o'clock (which is 30 minutes later, 27). He asks TG for ratification. TG, however, now offers to have lunch immediately (30–31) and suggests that HG should decide (31/33–34). In spite of HG's explicit offer to proceed as VK had initially started to in 08, TG offers options that presuppose that HG is interested (and may have requested) to have lunch right away. In 35–37, HG declares that he is not hungry yet and announces that they should go on with the mainline topic.

In contrast to the previous examples, the negotiation of inferences in this case does not simply involve the identification of the correct inference which was originally meant by HG (in 05). Rather, it turns into a negotiation about the future trajectory of joint action. This negotiation is organized in the shape of ascriptions of intentions and offers, by which all parties index that they are willing to give priority to what they infer as the other parties' plans and interests, i.e., they ascribe deontic authority to their partners. Therefore, in addition to the (initial) misunderstanding of the ellipsis resolution (talk about the mainline vs. having lunch), another misunderstanding of inferences arises, concerning the types of actions which have been carried out. This second misunderstanding concerns the deontic force of the expressed inferences and thus their status as social actions (announcements/statements about subjective preferences/requests vs. offers to the recipients to decide).¹¹

6 Conclusion

In an earlier paper, I have argued that even researchers holding an agnostic position implicitly rely on cognitive ascriptions to participants in their conversation analytic accounts. This is because they at least implicitly base their analyses on assumptions about participants' attention, perception, memory,

¹¹ The misunderstanding of the actions implemented by the inference-explications in the extract also partly arises from ambiguities of reference resolution. When HG says in 12 'I thought we wanted to have lunch now', the first-person plural pronoun *wir* ('we') can be understood in at least two ways: as self-reference to the speaker himself, referring to his own intention, or as speaker-exclusive reference referring to the addressees VK and TG (cf. Zifonun et al. 1997: 319–322). Accordingly, HG's turn in 12 can be heard as an announcement or even a request to have lunch, or alternatively it can also be heard as an offer.

knowledge, and even intentions (Deppermann 2012). The purpose of the current paper is to show that inferences also count among the cognitive processes that matter to participants and which therefore should and can be dealt with by CA. I have tried to show some of the ways in which inferences are observably a concern of participants: Inferences are made explicit by formulations of the interlocutors' talk, by intention-ascription, third-position repairs, and fourth-position explications of erroneous inferences. Inferences can be implied by conventional means without being explicated using items such as *eben*. However, more often than not, inferences are needed for a correct understanding of turns, although they are not overtly indexed. As in the cases of reference resolution or action ascription, they are nevertheless often consequential for smooth interactional progression. However, their constitutive role only becomes empirically manifest in the relatively rare cases of (alleged) misunderstandings which are dealt with by explication, ascription, disclaimers, and repairs of inferences. As Jaszolt and Haugh (2012: 108; see also Haugh 2008) have stated for intentions, inferences in social interaction are "temporally, ontologically and epistemologically ambiguous": Their content may change over time (vs. inferences as part of prior speaker-meaning), they may be realized at different times by different participants (vs. one-spot, static realities), they may be the result of joint sense-making (vs. independent cognitive realities of the speaker) and they may be more or less distinct, granular, and certain (vs. clearly defined propositional results of mental processes).

There is a systematics of the constituents of inferential practices in interaction, which allows us to pin down the major differences between different practices using a handy synopsis (see Table 1). The following constituents are basic:

- The semiotic status of the inference: Is it made explicit, only indexed, or left implicit? Indexical means and implicit omissions are varieties of implying. Still, at times, they can also be used to index that an inference has been drawn from what another speaker has said.
- The object of the inference: The discursive action that gives rise to an inference. We restrict our consideration to meta-communicative inferences. Of course, inferences can be drawn from all other sorts of things (like bodily appearance, non-agentive events, perception of objects, etc.).
- The implication or inference: What is (to be) inferred?¹² This constituent does not figure in Table 1, because each practice can be used to convey an enormous variety of possible kinds of implications and inferences (e.g., concerning referents, states of affairs, actions, participants' emotional, evaluative, or argumentative stances, intentions, motives, strategies, knowledge, expectations, etc.).
- The response to the inferential practice: (How) is the inference treated by the recipient, who can be, and, in the case of implications, usually is the producer of the object of the inference?
- Contextual sources of the inference: In addition to its object, inferences need to build on some additional source. Prior talk (e.g., antecedents, coherence relationships, framing: evaluative, argumentative, etc.), pragmatic inference (constraints on credibility, imputations of rational motives and (joint) goals), and world knowledge (including common ground and biographical knowledge) are most important here.
- The validity of the inference: Inferences may be more or less certain; participants who make an inference explicit may commit themselves with more or less epistemic authority to their validity. For analepsis and ellipsis, this category does not apply, because the speaker in these cases does not draw an inference from a different source, but these constructions are themselves the sources for inferences.

This paper contributes to the study of how cognition matters in social action and for its analysis. It is part of an attempt to bridge the gap between pragmatics and conversation analysis (e.g., Bilmes 1993; Haugh 2013) by showing how traditional topics in pragmatics inform social interaction as members' relevancies. It will be a task for future studies to show in much more detail for which phenomena of social interaction the notion of 'inference' is necessary and likely to yield new insights from a CA point of view. Beyond the phenomena addressed in this paper, inferences matter in many ways to conversational practice: Think of the inference-richness of membership categories already pointed out by Sacks (1992: 40), all different sorts of indirection in interaction (e.g., Walker et al. 2011; Haugh 2015), silence in terms of notably absent responses (cf. Schegloff 1968), or the more sophisticated varieties of recipient design (cf. Deppermann 2018). Inferences thus are an integral part of interactional practice, both as a resource for participants

Table 1: Constituents of inferential practices in interaction

Practice (example)	Semiotic status of inference	Object of inference	Response to practice	Contextual source for inference	Validity of inference
<i>also</i> ('so')-2 nd -position formulation (3)	explicit	prior turn	+/-confirmation	institutional knowledge	intersubjective
<i>dann</i> ('then')-2 nd -position formulation (2)	explicit	prior turn	no slot	various	unilateral
<i>du willst/willst du?</i> ('you want/do you want?')-2 nd -position ascription (4)	explicit	prior action(s)	+/- confirmation	pragmatic reasoning	intersubjective, unilaterally revealing
3 rd -position repair (1, 7, 8a-c)	explicit	own turn in 1 st position	change-of-state	introspection	intersubjective
<i>ich dachte</i> ('I thought')-4 th -position explication of incorrect inference (1, 8b)	explicit	partner's turn in 1 st position	confirming disclaimer	various	subjective, dubious or invalid
<i>eben</i> -confirmation (5)	indexed	prior turn treated as confirmable	no slot	anchor in speaker's prior (or in turn-continuation)	intersubjective
Analepsis (6, 7)	implicit	implies unexpressed concept/ referent	no display/ projected next action	antecedent or anchor in prior talk, recency heuristics, world knowledge	
Ellipsis (8)	implicit	implies unexpressed concept/ referent	no display/ projected next action	joint attention to visible object, world knowledge	

(in presupposing, implying, and inferring) and a topic of conversation (of attribution, negotiation, disclaiming, etc.). We still do not know much about how inferences are displayed in interaction, when they arise, how speakers' implications are related to hearers' inferences, what actions they are used for how, or how they are treated. These questions are closely tied to the methodological constraints of CA. It is clear that CA will not, like experimental pragmatics, be interested in differences in processing time or in modeling the representation of meaning. Rather, we will be interested in how inferring is organized as a social activity, how it is used and presupposed for interactional conduct, and how it is ascribed and linked to other interactional structures such as sequence organization, participation frameworks, and shared (or non-shared) ascriptions of knowledge and authority. In short, it appears to be a promising research agenda to study how inferences contribute to the accomplishment of interactional structure and intersubjectivity.

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Appendix: Transcription conventions GAT 2 (Couper-Kuhlen and Barth-Weingarten 2011)

[]	overlap and simultaneous talk
=	immediate continuation with a new turn or segment (latching)
°h / h°	in- / outbreaths of appr. 0.2–0.5 sec. duration
°hh / hh°	in- / outbreaths of appr. 0.5–0.8 sec. duration
(.)	micro pause, estimated, up to appr. 0.2 sec. duration
(0.5)	measured pause of appr. 0.5 sec. duration
:	lengthening
and_uh	cliticizations within units
haha, hehe, hihi	syllabic laughter
((laughs)), ((cries))	description of vocal activities
<<laughing> >	description of voice properties with indication of scope
<<:-)> so>	smile voice
SYLlable	focus accent
sYllable	secondary accent
?	high-rise intonation
,	mid-rise intonation
–	level intonation
;	fall-to-mid intonation
.	fall-to-low intonation
<<h> >	higher pitch register
<<f> >	forte, loud
<<p> >	piano, soft
<<pp> >	pianissimo, very soft
<<all> >	allegro, fast
<<len> >	lento, slow
()	unintelligible passage
(xxx), (xxx xxx)	one or two unintelligible syllables
(may i)	assumed wording