Mishearings are occasioned by contextual assumptions and situational affordances

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Abstract

This article is an empirical study of 220 mishearings in Swedish conversations. A mishearing is defined as a specific perception that appears in a hearer’s mind immediately after a speaker’s source utterance, and is lexically discrepant from what the speaker actually said. Starting from a dialogical meta-theory, the paper is a study of how mishearings are nearly always situation-appropriate; they invoke relevant contextual assumptions. A systematic coding of mishearings yields a classification based on types and subtypes of participants’ references to current topic, situational referents and other topics near-at-hand. At a theoretical level, this article has ramifications for a general theory of utterance understanding, and also more specifically for the theorising of repair and misunderstanding.

1. Introduction: mishearings

The phenomena I will be concerned with in this paper are immediate, spontaneous utterance perceptions that appear in the listener’s mind on the spot, without any prior conscious reflection or internal dialogue (for example, with the listener already being aware of a problem and asking herself what the speaker actually said). Thus, we are concerned with immediate reaction rather than retrospective reasoning.

Immediate speech understanding has to be quick since the acoustic events (and their memorising) are rapidly transient. A mishearing (misperception, "slip of the ear") occurs when, under these conditions, a hearer H hears something specific in another person’s (speaker = S) utterance (the ‘source utterance’)1, something which, as it transpires later on (and typically immediately afterwards), is clearly distinct in terms of lexical and sometimes grammatical content, from what S actually said or intended to say/pronounce. Accordingly, these mishearings are different from both non-hearings (cf.Grimshaw, 1980), on the one hand, and reflected interpretations, on the other. Just like most of accurate hearings, they are literally the first percepts in the process of making sense of somebody else’s utterance.

As a first example, consider (1)2:

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1 By ‘(trouble) source’ I mean the stretch of talk that originates trouble (in this case, with hearing and/or understanding). This source should not be seen as the cause of the mishearing. As will become clear, mishearings are co-determined by different kinds of context.
2 Details of notation: Actual utterances, all in Swedish, are in Courier New. Such an utterance may contain an object or source of mishearing, usually a word or a phrase, which is in bold Courier New. What the listener actually heard (the mishearing itself) will appear in the next line in Lucida Handwriting. Lines with normal numbering are actual utterances, lines within parentheses, with number, apostrophe and the listener identification B (i.e. (1’. B:)) are silent mishearings by the person B. The letter A will consistently refer to the speaker of the object/source of mishearing, B to the person who hears this in a discrepant way. English translations are given in italics.
In addition, note the following specific points:
Underlinings of vowel signs indicate focally stressed words.
% % (percentage signs) surround unclear pronunciations.

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A and B have dinner together. They are talking about a public panel debate, in which A has participated two days earlier. The debate has been reviewed in the local newspaper, and A refers to this (line 1). Meanwhile, she serves more wine and water:

1. A: dom skrev om vad jag sagt. i debatten. ((holding up a jar of water))
   they wrote about what I said. in the debate.

   (1’. B:) lite vatten?
   some water?

2. B: nä,thanks.

3. A: i debatten, sa jag. in the debate, I said.

This is a typical case where one topic is ongoing, when another activity, that of serving more to drink, is interspersed. A’s source utterance (line 1) belongs to the ongoing (“current”) topic, whereas the mishearing (line 1’) refers to the other practical activity in the local situation. The part which is misheard (i debatten) is phonologically quite similar to the mishearing (lite vatten), although in this case the hearer puts the morpheme-and-word boundary in a different place than the speaker (‘juncture misperception'; Cutler and Butterfield, 1992). The mishearing becomes detected since B provides a response (line 2) which does not fit the preceding contribution. Here, A makes the error detection explicit by repeating the crucial part of her prior utterance (line 3).

In (2), we have another case of an utterance and its mishearing, which are both interpretable as situationally triggered:

(2) (PL: MH 244) A and B are travelling by ferry-boat from Stockholm to Helsinki and are just passing over the sea between the archipelagoes of Stockholm and Åland. Åland once belonged to Sweden, and in those times mail was transported by rowing-boats between Åland and the Swedish mainland. A and B are looking at the sea, with its isolated small islands, when A suddenly says:

1. A: här över de här havet rodde dom mej post (%)
   (1’. B:) fisk
   here across this sea they were rowing with mail, long ago

2. B: mej fisk?

3. A: mej POST.

A’s remark in lines 1–2 seems to be unexpected for B. B hears correctly that it is about the physically present surrounding, but she does not catch the reference to mail, perhaps because this is news for her. Instead, she hears a situationally plausible alternative (“cod”), which she immediately afterwards also pronounces out loud (line 3), as a kind of repair initiation. A detail in this is that she backs up and reproduces the whole prepositional phrase (“with cod”), not just the misheard item (“cod”). A then repeats (line 4) what he had said in line 1, but this time more loudly and with hyperarticulation.

As we have already seen from the first two examples, one reason to study mishearings is that some of them seem to have significant relations to the phenomena of repair and misunderstanding in languaging. Let us look at a somewhat more complex example (3):

(3) (PL: MH 164) A and B are visiting another family’s house and have spent the night there. A, who has got up rather late in the morning, meets with the host family’s about five-year-old daughter Carina (C) outside the bathroom. Since last time A met Carina, she has cut her hair short. A is brushing her teeth and pronounces her first utterance (line 1) rather unclearly, as she has the toothbrush in her mouth. B is overhearing the conversation:

1. A: %har du klippt håret%, Carina? ((%...% unclear pronunciation))
   did you cut your hair, Carina?

   (1’. C:) x x x x
   (xxx: non-hearing?)
While (1–2) are more straightforward examples, in which the identities of the mishearings might be inferrable from the overt discourse, (3) is more complex; in fact, the exact nature of the mishearing is never publicly disclosed. In addition, we can see that a misunderstanding can involve several mishearings, and that the miscommunication is an interactional rather than an individual matter (Linell, 1995). A’s articulatorily unclear utterance in line 1 is not caught by C, as evidenced by her repair initiation in line 2. Probably, C experiences a non-hearing rather than a mishearing here. Subsequently, A asks the same question once again (line 3), and C answers “yes” (line 4). When this receives no uptake (line 5), C makes a comment (line 6) which reveals something of what she may have heard earlier (line 3). This is probably the same as what B, who is overhearing the whole exchange, has (independently of C) heard: “have you put on your clothes?”. A now realises that there may have been a mishearing involved, which results in her repair in line 7. C weakly and somewhat ambiguously confirms this (line 8).

Thanks to B’s mishearing, which is also an overhearing (line 3), we get an idea of what kind of mishearing C may also have had. Indeed, this would explain her utterance in line 6, which would otherwise have been heard as completely irrelevant. But now think about the exchange without line (3). We could then diagnose the sequence as problematic, involving a repair by A (line 7). This is probably significantly influenced by C’s line 6, but the real repairable is the silent mishearing in line (3’). (In fact, the original problem source is A’s unclear line 1.) This could perhaps have been hypothesised by a Conversation Analyst, but the analysis is surely strengthened by the access to B’s (and C’s?) silent mishearing.5

Mishearings (“slips of the ear”) have seldom been systematically treated in the research literature. There is many more studies of speaker-induced “slips of the tongue” (Fromkin, 1973; Mustajoki, 2012). Most discussions of mishearings have been based on anecdotal instances, often in fact dealing with people’s strange interpretations of song lyrics (e.g. Connor, 2009). These discussions often appear in rather popular accounts.5 The most extensive linguistic treatment of slips of the ear is probably that of Bond (1999). The relations of mishearings to other “nonsuccesses in talk” have been discussed by, among others, Goffman (1971) and Grimshaw (1980). In this paper I shall work with a whole corpus of authentic mishearings, discuss their situation-appropriateness in dialogical terms, and use the results as evidence against a linear theory of speech perception. I shall also briefly discuss the place of mishearings in the study of misunderstandings (see Sections 7 and 8).

2. Data and method

The data, a collection of authentic mishearings from Swedish everyday conversations, were assembled by the author between 1978 and 2014. The data are all salient mishearings in terms of erroneous (unintended) wordings,7 and were written down on the fly. With some training it turns out to be possible to focus on and adequately record aspects of the mishearings, their contents and contexts. However, there is a limit to the number of different aspects that can be captured. Therefore, the first priority in this study was to get the mishearing itself right; accordingly, when a mishearing was experienced by the

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5 From the point-of-view of the CA theory of repair (Schegloff, 1979, 1992, 1997a, 1997b), the case is complicated. We seem to have several problem sources (repairables), one by A (line 1; the utterance which contains the stretch of talk that originates the trouble) (with a following repair initiation by C in line 2) and one (the mishearing) by C (line 3’). Similarly, there are three attempts at repair, by A in lines 3 and 7, and by C in line 6. Thus, the two interlocutors seem to share the responsibility for both repairables and repairs. The distance between the original problem (repairable) (line 1) and last (other-initiated self-)repair (line 7) is considerable; the last-mentioned repair seems to be six-positioned with respect to the problem source.

6 In such contexts, misperceptions are often called ‘mondegreens’ (Connor, 2009). This term is due to Wright (1954), who took it from her own misperception as a child of a line in the ballad ‘The Earl of Murray’. I cite the two relevant lines here, with Wright’s mishearing transcribed according to my notation:

Singer: They have slain the Earl of Murray
And they’ve laid him on the green.

Wright: Lady mondegreen

7 In some cases, utterances in conversations may contain deviations from an optimal articulation. However, no unintelligible utterances have been included in the corpus. Furthermore, only distinct mishearings (that is, the hearer perceives something distinct, but discrepant from the intended interpretation) are included in the corpus; there are no cases of total inability to perceive anything.
author or overheard or reported to him, the speaker’s utterance (the ‘source utterance’) and the mishearing were noted down immediately. Secondly, the contextual background for the source utterance in question was notified. As a third priority, the ensuing follow-up sequence was taken down as well. However, the source utterance and its mishearing were prioritised, and if the notes were later judged to be uncertain in terms of the wordings, they were excluded altogether from the analysis. If the hearer was not the author, (s)he was asked to give an explanation for the mishearing. ⁸ As a result, the lessico-grammatical structure of the source utterances and mishearings used in this study are as close to reality as we can reasonably get. This is not to say that it has been possible to capture the full richness of their prosodic and para-verbal performance. The contextual specification and follow-up co-text are also important, but could sometimes be registered only in a rough manner. In particular, I could not always capture follow-up sequences verbatim. This is definitely a drawback, since these sequences could often tell quite a lot about participants’ relation to contexts in what they have said and heard.

The total number of items in the collection is 250. However, since there were insufficient details in the context descriptions in 30 cases, these were removed and ignored for the purpose of the present study. This leaves us with 220 items. ⁹

A few more specific characteristics of the data should be mentioned. First, the corpus is strongly biased towards informal everyday conversations of a kind that Goffman (1983) called ‘open state of talk’, i.e. situations that allow for moments of silence, interruption by practical activities, and sudden changes of topic. If we had used institutional talk instead, we would most probably have found fewer mishearings, and in particular, fewer cases of situational or other near-at-hand anchorings (⁸ and O below, Section 5.1). Secondly, several of the persons producing the mishearings had slight hearing impairments. However, this would arguably not change the contextual types of mishearings, which means that it is irrelevant for the present study.

The mishearings that I will study in this article are silent events in the listener’s mind, although some of them surface indirectly, in some form or another in follow-up sequences. In other words, the mishearings themselves are not publicly and directly accessible, but they presuppose public practices (utterances in interaction), of which hearers make sense in certain regular ways. Mishearings are not illusions, but real events that need to be attended to, if we want to expand the analysis of true languaging (cf. example (3)).

However, there are some specific methodological problems. Many analysts would in fact argue that mishearings are too shaky to serve as legitimate data for a scientific study, even when based on actual interactions. Since they are personal, private, subjective experiences that are not publicly observable behavioural practices, they can not be recorded like overt utterances and subjected to repeated hearings. Moreover, they are highly transient phenomena that are easily forgotten by their producers. The indirect indications (see Section 3) are not systematic, let alone obligatory. Those mishearings which are never disclosed in any way in interaction, cannot be subjected to analysis, unless they are experienced by the analyst him/herself. Therefore, the method deployed in this study cannot account for their absolute incidence. ¹⁰

3. Participants’ own treatment of apparent mishearings

Mishearings are silent events. However, they can be made partly public, or inferable from the follow-up sequences. For example, in (3), after receiving an unfitting comment by B in line 6, the speaker meta-comments in line 7 on what she had said originally (the source utterance in line 1). In other cases, such as (1), the mishearing as such was never made public.

As far as follow-up sequences are concerned, there seem to be a number of common types: (i) no mention of or allusion to the mishearing, (ii) repair initiated by hearer’s minimal query (“what”), (iii) hearer’s repeat of the misheard part, (iv) first speaker’s repeat of original, (v) inferencing from irrelevant response, and (vi, vii) meta-commenting by either party or both.

(i) : it often happens that the mishearing is not made public at all:

(4) (PL: MH 176) A and B are visiting the bistro carriage in an express train. They are almost finished with their meal, when A says:

1. A: kan inte du hämta ett bröd till?
   couldn’t you bring another piece of bread?
2. (no reaction from B)
3. A: då gör ja de själv då. ((raises)) sitt kvar då.
   I’ll do it myself then remain seated then

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¹⁰ These are among the reasons why another journal rejected an earlier version of this paper. One of the reviewers’ arguments was that the hearer’s memory and interpretation of a given mishearing are unreliable. Yet, effects of subjective filtering can apply to all utterances, including those commonly analysed with such a rigorous method as Conversation Analysis. Yet, it must be admitted that there may be several reasons to doubt details of notes of data which are temporally transient and non-recordable (since they are, by definition, “silent” events). This is why I tried to be very cautious in approving of examples.
What happens in (4) is that B misunderstands the communicative act by A (line 3), hearing her uttering as an offense (3'), rather than a mildly frustrated comment. There is no follow-up sequence, other than A’s physical movement (she gets up herself and walks up to the bar). Hence, the mishearing is never made public, nor commented upon. One may speculate that a reason for B’s non-disclosure is that his mishearing would have been offensive, and therefore shameful and mutually face-threatening.

(ii): a second possibility is that the hearer, instead of telling about the specific mishearing, responds by an ‘open’ class repair initiator (like “what?”: Drew, 1997):

(5) (PL: MH 249) At the supermarket (mainly grocery store): A has wandered off, out of B’s sight, to a division for magazines and stationery, and now returns from there. He greets B with line 1. Incidentally, the stationery division is physically rather close to where coffees are stored.

1. A: ja har vatt å tittat på gaffelpärmar
I had a look at the loose-leaf (lit: forked) binders
(1'. B): kaffe
coffee
2. B: va?
what?
3. A: gaffelpärmar
the loose-leaf binders
4. B: jasså
oh I see

In this situation, at the grocery supermarket, it is presumably seldom that anybody visits the stationery division. In this case, A’s excursion to it was unannounced. (A and B had visited the grocery store in question hundreds of times without even knowing that there were binders for sale.) In addition, the term gaffelpärmar, the label used here, is not part of common usage. It is therefore hardly unexpected that B hears something different from gaffel ‘fork’, namely kaffe ‘coffee’ (the mishearing was disclosed by her after the sequence cited here). However, although coffee would be a much more plausible thing than binders to buy in the grocery store, kaffepärmar sounds like a very strange compound word. Although talk about coffee definitely makes sense in the situation, the new compound does not seem to index any plausible referent. The mishearing is both situationally comprehensible (it was coded as S/#S in the terms introduced below (Section 5.1)), and highly implausible. No wonder that B continues with an open class repair initiator (line 2: “what?”). The first speaker then repeats his original contribution (line 3). We therefore get a combination of practices, including also speaker’s repeat as described below.

In (1) and (3), the actual mishearings were not disclosed, but were followed by responses coherent with them. In (4), neither mishearing nor a comment on the problem were made public. In (5), the mishearing itself was not disclosed directly (but told afterwards, on request), but the communication problem was announced through the repair initiation.

(iii): however, mishearings can also be handled by repeats. One possibility is that the hearer says out loud what (s)he suspects is a mishearing. This we can see as hearer’s repeat of own mishearing. This is usually done with a questioning intonation. We had an example in (2).

(iv): another possibility involving repeats is the speaker’s repeat of own source utterance, perhaps in an expanded version, i.e. repeating the utterance part that presumably caused a hearing problem for the addressee, as in (6).

(6) (PL: MH 202) B is passing through the security control at an airport. The controller A is asking B about the content of a suitcase, while pointing at it on the belt:

1. A: ingen dator "här"?
no computer here?
(1'. B): Ramlösa
Ramlösa (a well-known Swedish brand of mineral water)
2. B: Ramlösa?
3. A: ingen dator, “i váskan”?
no computer, in the suitcase?

11 Such initiators can also be prompted by non-hearings.
In abstracto, there could of course be no explanation of why somebody would hear the word(s) **dator** (här) as Ramlösa. The phonetic discrepancy seems too big. However, in the specific situation concerned, in the airport security control, the possibility that passengers are asked about liquids, or computers, in their hand luggage is near at hand. Indeed, the controllers repeat the same or very similar questions to each and every passenger.12

(v) : yet another possibility is for the mishearing to be revealed by inference from the hearer’s topically irrelevant response (seen from the speaker’s point-of-view). This was an ingredient in (1) and (3). In both these cases the inadequate response was followed by the speaker’s repeat of her utterance ((iv) above) and/or a meta-comment ((vii) below). However, in some examples we find (v) occurring without such a discursive follow-up, as in (7):

(7) (PL: MH 21) An elderly married couple are sitting in their drawing-room in the late afternoon. The husband (A) breaks the silence:

1. A: **har diskmaskinen gått?**
   *Is (lit.: has) the dish-washer finished (lit.: gone)?*
   (1’. B:) **én visky skulle va gott**
   *a glass of whisky would be nice*
2. B: **ja de skulle inte va så dumt**
   *yeah, that wouldn’t be so bad*
3. A suspects that a misunderstanding has happened and comments on this, etc. (not noted down and therefore not shown here).

In (7), although there are clear phonological similarities, especially as regards the focally stressed words, between source and mishearing (**disk** vs. **visk**, and the homonymous **gått** ’gone’ vs. **gott** ’good, nice’), some parts are more distorted in the mishearing. This is linked to the fact that the whole utterance is affected, not just one word or a short phrase. The source and the mishearing would both initiate new episodes in an ‘open state of talk’, and they are both plausible (”near-at-hand”) utterances in the current situation. Yet, although line 2 is not an entirely impossible response to line 1, it appears a bit odd and suggests that there is a misunderstanding involved, which is then commented on by the first speaker (line 3: unfortunately, I don’t have the exact wording).

(vi) : in (3) and (7) the mutual misunderstanding is topicalised in the sequence following the listener’s response by the initial speaker (A). However, it may just as well be the listener who meta-comments on the mishearing incident. Such a case is (8):

(8) (PL: MS 222: A and B share a room in a hospital ward. On one morning, B is looking for the switch of his bedside lamp, and A makes a comment (lines 1–2). The evening before there was a football match between national teams on the TV.)

1. A: **hitta du lampknappen?**
   *did you find the lamp button?*
   (1’. B:) **titta du på landskampen?**
   *did you look at the international match?*
2. A: **(0.3) till den lampan**
   *of that lamp*
3. B: **jäså, ja tyckte du så titta du på landskampen**
   *oh, I thought you said did you look at the international match*

Here, B (line 1’) initially interprets A’s utterance (line 1) as referring to the football match, which both know was televised the previous evening, but after A’s turn expansion (increment; Schegloff, 1996) in line 2, he (B) realises that he has heard line 1 erroneously, and makes a meta-comment stating this (line 3), thereby also explaining why he has not answered A’s question in line 1.

(vii) : finally, a meta-comment may also be made by the speaker. Such a speaker’s meta-comment occurs in (9), together with other practices that we have already had examples of:

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12 One may speculate that it is the routinised format in cases like (6) that compensates for the phonetic dissimilarity, that is, that people can mishear in quite dramatic ways if the situation is highly constrained. However, plausible this hypothesis may appear to be, I cannot test it, since I have too few relevant data.
(9) (PL: MH 194) Two women in their sixties, A and C, have been for an afternoon excursion to an outlet for clothes, especially underwear. One of them (A), who was also the driver, is later telling a friend (B) over the phone about the trip, and adds:

1. A: **ja släppte av Ann-Britt (=C) för en stund sen**
   *I dropped Ann-Britt off a while ago*

   (1’ .B:)
   **klädde dressed (cf. klädde av ‘undressed’)**

2. B: klädde **av?**
   *undressed?*

3. A: **släppte av. du hör torrt.**
   *dropped off. your hearing is bad (lit: dry)*

Here, B seems to suspect that his somewhat bizarre interpretation is a mishearing but announces his hearing out loud (line 2). In this regard the example is of the same type as (6). Note, however, that the whole sequence involves two repeats, by the hearer (line 2) of his own prior mishearing, and then by the speaker (line 3). The latter corrects A with a repetition of her actual word(s), with a contrastive stress on the verb stem to make it more salient. Then, she makes the meta-comment on A’s bad hearing.

These are the major types. Since I have insufficient data on follow-up sequences, I shall not present any quantitative data. However, where appropriate and possible, I shall use them as evidence for what I am after in the first place, the contextual anchorings of the mishearings themselves.

4. Context types

Conversations can and often do relate to different discourse worlds, i.e. contexts which are or can be made relevant for the interpretation of contributions to dialogue. Contexts and contextual resources comprise the actual talk or text (‘co-text’), the surrounding situation and various more abstract contexts, such as situation definitions and background knowledge of topics, etc. (e.g. Linell, 2009; p. 17). Contexts may support each other, or compete for relevance. Some such competitions relate to differences between participants, and their current concerns and foci of attention. There is an obvious asymmetry between participants; whereas the speaker knows what (s)he has just said or is just about to say (at least as regards major content words), the listener often cannot know in advance what will be said (although, as the evidence shows, (s)he can sometimes anticipate the gist). In addition, competing aspects can also relate to changing foci of attention in the single participant. Mishearings tend to involve the invocation of other contextual aspects than those intended by the speaker. (There are of course (more trivial) context-internal misperceptions, as when a name of a person or a local address, or the digits of a number, are misheard.)

Topical contexts can stay the same across a sequence of utterances. Such a sequence usually forms a topical episode. As long as a coherent episode continues, we will talk about the participants’ (at least partially) shared, current topic. But participants, or one of them, may also change topics. Such topic changes, leading (if successful) to topical episode boundaries in the discourse, may be classified into four or five types (Linell and Korolija, 1997): (a) topic recontextualisation, which is a change of topical aspect within an overall topic, i.e. a shift of focus within roughly the same topic or topic domain; (b) reinitiation of an earlier but currently closed (although latently accessible) topic; (c) situational elicitation, which consists in initiating a topic related to the local, physically present, situation (‘local sensitivity’; Bergmann, 1990); (d) initiation of other topics which are near-at-hand (at least for the speaker, often associated more abstractly with the situation type or with current cultural topics, e.g. in the media). In addition (e), speakers can initiate topics "out-of-the-blue"; such topic initiations appear to listeners as unmotivated and therefore difficult to grasp, although for the speakers they are often linked (though covertly) to the situation, previous topics or something near-at-hand. But hearers-recipients expect new utterances to be either continuations of ongoing topics (relevant contributions to a topic in progress, but perhaps another aspects of that topic (cf. (a)), or assume them to be understandable as reinitializations (b), situational elicitations (c) or otherwise near-at-hand (d). Topics raised "out-of-the blue" (e) are therefore often supported meta-communicatively (speaker inserting something like another matter..., now something different..., to change the topic...., it occurred to me that...) or non-verbally by pointing gestures (which, however, normally implies situational elicitation). Linell and Korolija (1997) used these categories to describe the initiation of new topical episodes. Here, we shall use a variant of the same classificatory system to describe mishearings.\(^{13}\)

Mishearings occur when the listener spontaneously and clearly hears something different from what the speaker has said (or intended to say) in his/her immediately prior utterance (which we will call the ‘source utterance’, that which becomes a problem source).

Mishearings are typically triggered by the hearer’s assigning utterances to topics or topical aspects that were not intended by the speaker. They appear when the listener cannot follow the speaker, often in moments when the latter has just tried to

\(^{13}\) There is a vast literature on topics and topicalisation in conversation. Some important contributions are Maynard (1980) and Bublitz (1989). For more discussion and references, see Korolija (1998).
change topic (Schegloff, 1979). Thus they typically occur at attempts to establish topical (episode) boundaries in the discourse (cf. Linell and Korolija, 1997). The hearer can then deviate from the speaker’s intended words in several ways. I will categorise mismatches in terms of a limited number of types based on the codes below.

The analyses of mishearings concern the interlocutors’ knowledge of or assumptions about the topics raised in their situated talk-in-interaction (conversations). Thus, we are not primarily concerned with meanings in the language system, although these are naturally involved in the participants’ activities of language.

5. Coding system and coding procedures

Speakers’ intended interpretations as well as listeners’ spontaneous mishearings can be associated with different discursive worlds, or contexts. Operationally, we shall, on the basis of the above considerations, distinguish between five types of basic categories representing different contextual associations.

5.1. Basic categories

C: Staying at current topic (and its currently relevant aspect): For our operational purposes, a current topic will be defined as one which has been (demonstrably) relevant for the participants over at least two (and often more) immediately prior contributions (utterances) (i.e. the source utterance plus at least one previous utterance). Note that currency in the immediately preceding utterance(s) is the only circumstance that counts for our coding purposes. The topic has often started earlier as a situational (deictic) reference, as an association close-at-hand or a reinitiation of a topic that has been dormant for a while (cf. S, O below).

#C: Listener’s associating with another aspect of the current topic, or another dimension of the current context. i.e. other than the one which has been locally focused (thematised) (= C). That is, participants may shift perspectives on what is broadly the same current topic.

For the purposes of the present categorisation we code as #C cases in which a name (of a person, place, street etc.) or a numerical labelling (e.g. date, year, street number, etc.) is misheard and exchanged for another name, number, etc.

S: Speaker’s or hearer’s associating abruptly with an aspect of the surrounding (physical) situation that has not been mentioned or topicalised in the current context. Note, as was just pointed out, that once such a situation-elicited topic or topical aspect has become topicalised locally (over at least two utterances), it will be regarded as C, i.e. as current topic. A special case of S is when a speaker’s utterance is triggered by his/her reading of a text.

#S: Listener’s associating with another aspect of the surrounding situation than has been earlier topicalised in the local context. (Here, the listener has understood that the speaker’s prior (source) utterance was situationally induced.)

O: Speaker’s or hearer’s associating with a new (“other”) topic, that is not current, nor situationally induced through the utterance or mishearing under analysis. Such a topic is nevertheless typically “close-at-hand”; participants do not usually bring up, at least not abruptly, topics that cannot be identified fairly easily by co-participants. Note that topics to be coded by O are not related to just any context other than C or S. Participants treat topics as “close-at-hand” (coded as O), if the topics are associated with the communicative activity type going on (rather with aspects of the physical situation), or if they are commonly known (often “hot news” in the media), or if they are part of participants’ earlier common biography prior to the present conversational exchange, or if they have been on topic earlier in the same conversation but dormant for a while. Note that, for the purposes of our codings, we treat all these reinitiations as cases of “O” (thus, collapsing the two types reinitiations (a) and near-at-hand (c) cases of the category system of Linell and Korolija, 1997).

#O: Listener’s associating with a new (“other” close-at-hand) topic different from the one just brought up by the speaker.

U: Uncategorisable associations: Here we are faced with mishearings that are perceived (and reported) and yet cannot be explained and therefore not categorised by analysts (and participants themselves often fail to do so as well). In these cases the hearer seems to perceive something “out-of the blue”, a kind of counterpart of speakers’ introductions of something “out-of-the-blue” (e) in Linell and Korolija).

We note that C, S, O and U can occur in speakers’ source utterances as well as in listeners’ (mis)hearings. By contrast, #C, #S and #O are always second-positioned: they can only occur in the mishearings, not in the source utterances. The latter categories are motivated by the fact that we are concerned not only with one participant’s (the speaker’s) (intended) association, but also with listeners’ associations that may be different from the speaker’s.

5.2. Codes

Using the above categories we will apply composite codes for the relations of the speaker’s source utterance and the listener’s spontaneous mishearing. In the following codes, the speaker’s choice is given before the slash, and the hearer’s after the slash. The attribution of categories is based on assumptions of which contextual dimensions prompt the choices.

C/#C: the speaker chooses to stay on current topic (C), but the responding hearer connects with another associative space or topical aspect within this frame (#C);
5.3. Divergent opportunities for interpretation

I have briefly commented on possible codings of the examples given in connection with discussing other aspects above. Therefore, I only give the codings given to these examples here: (1, debatten) = C/#S, (2, torsk) = S/#S, (3, kliipt håret) = S/#S, (4, skitapa) = C/S, (5, gaffelpärmar) = S/#S, (6, visky) = O/#O, (7, landskampen) = S/O, (8, Ramlösa) = C/#C, (9, klädde av) = C/#C. Some of these codings may require some short explanations.

There are sometimes arguments for classifying mishearings, which are multi-aspectual, as either of C or S, C or O, or S or C. Yet we have adopted some meta-rules of coding. Thus, if a categorisation as C (or #C) is arguable, this is to be preferred to S (#S) or O (#O); C/#C is therefore a “default” categorisation. Similarly, if S (#S) and O (#O) are the alternatives, S is to be preferred over O. These rules are adopted, because of assumptions that participants try to be (locally) coherent (treat utterances as locally relevant in relation to prior utterances), and that a situational anchoring (associating with something physically present) is preferred to a more abstract (“O”) anchoring.

Nonetheless, some codings are bound to be contentious. For example, example (4) above was coded as a case of C/S, that is, B understands the utterance as a reaction to his behaviour in the situation, rather than a remark on the current topic, which would have been C/#C (in that case the current topic is about the communicative situation itself). But it appears that B is anticipating a derogatory remark on his own conduct so strongly that he hears the three-syllable source utterance as having its focal stress as sitting on the first syllable (as in the compound skitapa, which could not have its stress on the second syllable, like the source).

Another contextually ambiguous mishearing could be example (9), in which B’s spontaneous hearing (line 1’) was not entirely unrelated to the previous telling by A. After all, the two female friends had been buying clothes, so one might think that they had temporarily undressed to try them on. However, what A actually said in line 1 was related to another aspect of her own story, that she had taken her friend (here called Ann-Britt) for an excursion and now had dropped her off where she lives. The two interpretations could be classified as tying up with different aspects of the ongoing topic (C/#C). However, one might also suggest that it would be (C/O). The same holds for example (4) above. B takes up another topic than A’s focused one, although one “near-at-hand”.

Another kind of contextual ambiguity, consider example (10):

(10) (PL: MH 130) A and B are travelling in B’s car from the residential neighbourhood in a suburban area down-town to the city centre. A is thinking of what business she wants to do in town, which includes cashing some money from a cashing machine somewhere. She utters line 1, seemingly out-of-the blue. At the same moment, the car passes by a park with a stream and a lawn on which there are many seabirds.

1. A:  
   banker finns de överallt.  
   /banks (there) are everywhere/  

(1’ B:)  
   anker  
   /ducks/  

In (10), we are not faced with a speaker or a hearer linking with a current topic. Instead, A says something about a possible topic which has not been actualised earlier during the car-ride. However, this topic is “near-at-hand” (O), given the purpose of
the whole trip, B, however, hears the utterance as referring to the physical surround (S) that is perceptually accessible in the moment of speaking. Thus, the mishearing would be classified as O/S.

Despite the inherent ambiguities in parts of the data, the inter-coder agreement was relatively high (see section 6, below), which is evidence that there are, after all, clear contextual types.

5.4. Inter-coder agreement

In the coding system applied (Section 5.2), mishearings can be categorised in at least 10 different ways (we treated the U classifications as one single category). Hence, there seem to be plenty of opportunities for two coders to choose different codings. We therefore calculated the degree of inter-coder agreement. The measure of this agreement is defined simply as the percentage of all coded items that the two coders have coded in identical ways.

6. Empirical results

We coded 220 mishearings in total. The different codes received the following numbers of cases, in the order of decreasing frequencies (calculated after resolution of divergent codings, see below):

- C/#C: 42% (92/220), S/#S: 24% (52/220), S/O: 6% (14/220), C/U: 5% (12/220), S/C: 5% (11/220), O/#O: 4% (8/220), C/S: 3% (7/220), C/O: 3% (7/220), O/S: 3% (6/220).

In total, mishearings coded as unclassifiable ([C, S, O]/U) amounted only to 8% (18/220). Instead, as predicted, C, S and O work as contextual representations of source utterances and their mishearings. Staying on current topic (C) was the most common strategy by speakers (54% (118/220)), and in the majority of cases (42%) these utterances were also assumed by mishearers to be on current topic, although on a new aspect (#C). The second-most frequent speaker’s contextual resource in cases leading to mishearings was to reference to something new in the concrete situation (37% (82/220)). The S- or #S-classified mishearings were slightly fewer than the S-coded source utterances (65/220)). However, it is conceivable that our method overestimated the number of C utterances; several of these had started earlier with an S association, but (according to our coding rules) the topic had already been established as current, when the mishearing occurred. Note, however, that we had very few C/S cases (3%), that is, C utterances misheard as S associations.14

As for the inter-coder comparisons, two coders first used 30 cases for training purposes. We then coded 100 test items independently of each other. In both cases disagreements were resolved after discussion, and the agreed codings were used in the calculation of results. The inter-coder agreement in the test was 76 percent. Given the number of different codes, and the fact that several cases involve multiple opportunities for interpretation, this must be regarded as a satisfactory level.

7. Discussion: relations to a general theory of utterance understanding

In this section I will discuss possible theoretical contexts for the findings of the study. Of course, these theoretical contextualisations cannot be derived only or directly from the empirical data; theories do not simply follow from particular empirical generalisations. Instead, we need a discussion of what kinds of theories, especially as regards utterance perception and understanding, the results would be compatible, or incompatible, with. In the end I will interpret the results in terms of a dialogical theory of situated languaging (Section 8).

Mishearings, just like accurate hearings, are evidence that participants’ minds are set on situation-appropriateness. It is an axiom of dialogism (e.g. Linell, 2009) that language and situations or contexts co-determine sense-making in situ. Situations promote, enhance or facilitate particular interpretations of utterances. This implies a focus on pragmatics and situations.

The pragmatics of language is concerned with how languaging is carried out. Pragmatics is, by definition (according to most theories), context-sensitive, and situated meanings are constituted by recourse to both linguistic and contextual resources. Our theory of sense-making assumes that contexts are always communicatively relevant and intertwined with discourse (Norén and Linell, 2007). Participants to communication always go for situates, communicatively relevant meaning; they need to find out about the “why of communication” (“why that now to me”; Sacks et al., 1974) in almost all situations in which they are accountable for their doings. This means that pragmatic-semantic inferences influence word identification, and – in general – perception of speech. This is not to deny that other “levels” of language (phonology, morphosyntax, lexicon) are relevant in these meaning-making processes, but they are means or cues rather than goals in these activities.

In a Distributed Language (DL) approach (Cowley, 2011a, 2011b) it has recently become commonplace to argue for the importance of anticipatory aspects in the activities of both utterance production and utterance perception and understanding. What anticipations amount to is often that pragmatic aspects, related to the “why” of communication, are actualised first, or at least at an early stage, and details of “lower” levels of language, such as phonology, grammar and (partially) lexical choice, are brought in only later and if necessary. The situation-dependence of utterance understanding is most clear for the spontaneous and unreflected understandings that come to mind first in situations of on-line interaction, before the person has had a chance to develop a more reflected interpretation.

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14 In the light of the uncertainties concerning some unknown biases of data collection one should not assign any importance to the absolute numerical differences here. The data collection method might lead to an overrepresentation of specific types that are particularly prone to attracting attention.
Anticipation, foreseeing what might happen in the future and taking action to prepare for it, is pervasive in utterance production too. Auer (2005, 2009) has discussed this in terms of syntactic and pragmatic projection (see also Linell, 2013); beginning an utterance in a certain way commits the speaker to some continuation grammatically (and pragmatically) within a range of possibilities defined by what has been said so far. Grammatical constructions are usually designed so as to make it possible to guess or predict what might come later. This anticipatory property of the unfolding utterance also permits the listener to predict what may come later in the utterance. It allows her to predict where-about the utterance may end, and therefore enables her to take the turn immediately after (or slightly before) the current speaker’s ending his utterance under construction. She can also initiate a collaborative or competitive other-completion of the speaker’s utterance (Lerner, 2002, 2004; Howes, 2012). Arguably, projection also allows the hearer to reinterpret plausible but unintended wordings into the speaker’s utterance, as in the mishearings discussed in this paper.

Of course, pragmatics is not prior to all other levels of linguistic analysis tout court. These different levels are of course operative more or less simultaneously, and feed into each other. But situations and discourse are interdependent, and participants aim at situated, communicatively relevant meanings in both utterance production and utterance understanding. Leveil’s (1989) well-known model of speaking is a case in point. Basically, it runs as follows:

**Linear model of speech production:** Communicative intentions >> pre-verbal message >> formulation of semantic representation >> generation of surface structure >> insertion of lexical items >> phonetic plans

In other words, this model starts with a ‘conceptualiser’ and proceeds linearly via a ‘formulator’ to an ‘articulator’. But Leveil’s theory basically assumes that the whole communicative intention (“message”) behind the utterance is present from the very start. By contrast, empirical studies have convincingly shown that utterance building is an incremental process, proceeding over time bit by bit, something which makes syntactic projection (Auer, 2005), as well as changes of projection in mid course (Linell, 2013), possible. Incrementation also fits the model of utterance understanding sketched in this paper.

Mainstream theories of speech perception and utterance understanding, particularly in psycholinguistics, have, like the above-mentioned theories of speech production, remained largely causal, linear (or ‘serial’15; Marslen-Wilson and Tyler, 1980) input–output theories. Such a linear model has the following basic structure (e.g. Massaro, 1975):

**Linear model of speech perception:** Incoming acoustic (and visual) signals >> phonological identification >> word identification >> grammatical representation >> literal interpretation >> indirect interpretation (pragmatics)

If we couple these two models of speech production and perception, we get an “autonomous transmission account” (Pickering and Garrod, 2004), or in other terms, a monologist model (Linell, 2009) of the “speech chain” (cf. Denes and Pinson, 1963). According to the linear model of speech perception, pragmatics comes in as an end result, rather than as an assumption that is to some extent present from the very beginning. The listener is instead portrayed as completely dependent on acoustic–phonetic information from the source utterance for her initial identification of a word (Marslen-Wilson and Tyler, 1980, p. 10). In most cases, a pool of word-candidates activated solely on the basis of acoustic–phonetic properties of the input only would then be subjected to a set of contextual criteria which could select a single choice from this pool (Marslen-Wilson and Tyler, 1980, p. 29). Studies like ours on mishearings show that this cannot be right; pragmatics comes in early. In speech perception others’ (and self’s) utterances are first and foremost used for finding a situated meaning, rather than creating a detailed phonological representation. In fact, already Marslen-Wilson & Tyler (op.cit.) performed word-monitoring experiments under varied conditions, and were able to conclude that an “on-line interactive” model of spoken language understanding, in which “the recognition of each word [...] is directly influenced by the contextual environment in which that word is occurring” (Marslen-Wilson and Tyler, 1980, p. 2), was clearly substantiated; there are “context-effects” already at the very beginnings of sentences (p. 41); pragma-semantic and syntactic predictability facilitates word recognition.

Marslen-Wilson & Tyler (op.cit.) discuss matters in terms of an information-processing model in which processing components at different levels interact and in which context-effects occur early, a “distributed processing model” (p. 29). Working with a “mechanistic dialogue model”, Pickering and Garrod (2004) argue that the linear, bottle-neck model (in which the phonetic signal is the only link between speaker and listener) is untenable. Instead, both participants use different available pragmatic and situational evidence and assumptions to develop their partially shared understandings on-line. This affords speakers and listeners with fairly parallel predicsments (Pickering and Garrod, 2013). It does not seem too far-fetched to connect the “mechanistic” theory of Pickering and Garrod with more of dialogicality (Schegloff, 2004).

Linear models in theories of speech production and perception are essentially monological, and based on ideas of Human causality. Such models have been very influential. Why has the linear model been largely been taken for granted in perceptual psychology? Järvilehto et al. (2011) suggest that it is only too near-at-hand to assume that in spoken communication, the only phenomena we can perceive and therefore use are the phonetic-phonological signals; we cannot observe abstract grammatical structures or “mental” entities like meanings. One other reason may have been the common predilection for simple (and therefore “elegant”) theories; a linear model looks nicer than one with various feedback and feedforward loops. Yet

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15 For a popular account of linear theories of processing, see Clark and Clark (1977).
another, and related, reason may be the preference for theories that start out exclusively from elementary components and work “from-bottom-up”, thus eschewing the potential role of “top-down” processes, what Thompson (2007, p. 417ff) has called “downward causation” (see also Thibault, 2011). Despite all these various (sometimes implicit) theoretical groundings, the linear, “pragmatics-last” theories have not received much empirical substantiation. In fact, they have been empirically falsified by many kinds of data (including the experiments by Marslen-Wilson and Tyler, 1980). Later, other studies have confirmed the interpenetration of “early” perception by pragmatic assumptions.16

Specific mishearings and their explications, like those exemplified and analysed in this paper, are entirely post-hoc (or ad-hoc), and not amenable to prediction. For some scholars, this point could be seen as undermining our whole analytic enterprise, but we do not see it in that way. Rather, it is precisely our point; immediate perceptions are, apart from mishearings, also cases of non-hearing, when listener cannot identify the words spoken at all. On the other hand, that a listener hears everything of the speaker’s utterance adequately is no guarantee that (s)he understands the intended situated meaning. Conversely, one can also understand the essentials of an utterance without hearing everything. Moreover, one may ignore one’s failure to understand and keep silent, perhaps in hoping that things will eventually become sufficiently clear anyway. In general, one may claim that there are seldom any completely shared understandings in communicative exchanges; deep down, there are aspects of mutual misunderstanding (Taylor, 1992). On the other hand, most of these potential misunderstandings are being ignored, for good communicative reasons.

Mustajoki (2012), in his overview of forms of miscommunication, claims that misunderstandings between participants in conversation involve many factors and multiple dimensions. He refers primarily to miscommunication that is somehow speaker-based (chiefly “slips of the tongue”), but the same point applies to misperceptions (“slips of the ear”). However, misunderstandings comprise, as stated above, a much wider range of phenomena than mishearings. Moreover, the latter seldom lead to persistent misunderstandings, as our examples indicate. Parties may entertain misunderstandings because of discrepant referent identifications (for example, when two people believe they have the same referent in mind when in actual fact they don’t) or slippage in conceptualisation (as when two people use (what seems to be) the same word although they have different meanings in mind), but such cases do not ordinarily involve mishearings. Also, Mustajoki’s (Mustajoki, 2012, p. 237) general claim that “failures of communication are, in the end, caused by poor recipient design” is not valid for mishearings.

In the explanation of misunderstandable and miscommunication, the hearer is not the only one who makes occasional mistakes; the speaker can also contribute to miscommunication, for example, by articulating badly, using inaccurate words, or changing topics unexpectedly. Thus, speakers are often co-responsible for listeners’ difficulties (Linell, 1995). The exclusive focus on mishearings in this paper may seem to have downgraded the importance of this aspect. The point is quite general; a coding approach aiming at quantitative results brackets a considerable part of the dialogical interplay in conversations and other interactions (Linell, 2009, chapter 18). If we are to uncover more details of dialogicality, we need sensitive qualitative analyses of single situated episodes. Glimpses of such occasional details have been hinted at also here, for instance, in the discussion of (5), with its interplay between an unknown term (gaffelpärm) and situational affordances (the availability of coffee).

Yet, the focus on mishearings in this article, and the codings revealing generalisable patterns, have produced two important sets of results, corresponding to our twofold purpose. First, it has brought into light the important categories of mishearings which are at play in conversations. At a general level, this has brought additional evidence for a theory of topics

16 Many other relevant studies could be adduced. For example, Järvilehto et al. (2011) demonstrated, in experiments with subjects reading texts aloud under experimental conditions, that readers look ahead in order to anticipate what will come later, something which will alleviate reading aloud. Reading is therefore not linear signal transmission. To pick just one more example, Rommetveit and Kleiven (1968) conducted experiments, as early as in the 1960’s, on binocular rivalry in which they demonstrated that subjects’ immediate perceptions of letter combinations (sometimes being “nonsense-words”) were influenced by knowledge of language as well as current semantic contexts in the experiment (see e.g. Linell, 2009, p. 260). Yet, the rapid reactions to the stimuli were not accessible to consciousness. Rommetveit (1992, p. 38) talks about these phenomena as being “cognitively penetrated” but “cognitively impenetrable”. In a similar discussion, Thompson (2007, p. 12) talks about the “cognitively unconscious”.
and topical transitions that has earlier been proposed in studies of topical episode initiations (Linell and Korolija, 1997). Despite various methodological problems in the study of mishearings highlighted in this article, we have seen that current contexts, situational references and near-at-hand associations account for mishearing events; mishearings are very seldom situationally or contextually unmotivated. At the same time, this contextual influence implies that mishearings cannot be explained only in terms of phonetic/phonological similarity.

This brings us to the second set of results, which concerns the basic role of pragmatics in languaging more generally (e.g. Cowley, 2011b). Contrary to what so-called linear models of speech production and perception models suggest, pragmatics comes in quite early in speech perception and understanding. The spontaneous, unreflected perceived words that immediately appear in the hearer’s mind are overwhelmingly prompted by relevant contextual assumptions pertaining to current topic, situational objects or events, and other topics near-at-hand. These pragmatic assumptions or prompts are clearly present from the beginning, being continuously sustained and negotiated by parties to the interaction, rather than being something resulting from prior processing of phonetic, grammatical and semantic processing, as the linear models suggest. This is not to say that pragmatic aspects are the only factors having an impact on hearings and mishearings. Clearly phonetic aspects are co-determinants, and grammatical and semantic factors too (cf. on-line syntax). Thus, the multi-level model of Pickering and Garrod (2004) is supported. This also implies that speakers and listeners are faced with partly parallel tasks in situated languaging, rather than indulging in utterance production and understanding as processes working in largely opposite directions. This kind of parallel processing confirms hypotheses emergent from dialogical theory (Linell, 2009) and empirical interaction analyses (e.g. Howes, 2012).

The findings from the study of mishearings support a dynamic, dialogical theory, rather than a linear model of perception (and production), for a number of reasons. They fit an incremental theory of production and perception (Linell, 2013). They support assumptions of similar activities in speech production and perception (Pickering and Garrod, 2013); the listener tries to follow the speaker in his on-line production, in building a situationally appropriate meaning. The findings also show that speech production and understanding are dynamic activities that change over time; we are not faced with a mental processing of static representations of the same message (as in linear models). They raise doubts about the necessity of internal, full phonological representations in speech perception; it seems to suffice that words can be identified or posited on the basis of some phonetic and pragmatic features (plus grammatical projection). Mishearings also exhibit both anticipatory and retrospective aspects; they are relevant to specific situations (thus being indexes of responsive understanding), but they are (by definition) immediate and non-reflected, and may therefore fail to fit normal coherence patterns. This latter point is shown in the parties’ follow-up sequences, in which the mishearings are found to be precisely mishearings.

Finally, let us ask if mishearings are really private and subjective in a deeper sense. The answer is not as self-evident as one might think in the first place. There are two reasons for this. On the one hand, they are dependent on others’ contributions to interaction. Hence, there is a dialogical interplay between speaker’s and hearers’ activities, in patterns of co-activation and anticipation. (Naturally, this involves an asymmetrical progression; the speaker has in some ways a privileged position.) Languaging involves a mutual development and engagement of various contextual dimensions and embodied behaviours (articulatory gestures organised in syntactic gestalts resulting in acoustic–phonetic events); situated, communicatively relevant meanings are always the result of both these dimensions.

On the other hand, some aspects of languaging are “pre-” or “sub-cognitive”, and this applies in particular to spontaneous hearings and mishearings. The processes leading up to them are not accessible to consciousness; they are not mediated by conscious reflection, and cannot be planned or willfully performed by the hearer. Yet, they are, as we have seen, culturally and contextually co-determined. In the terms of Pylyshyn (1980) and Rommetveit (1992) they are “cognitively penetrated but cognitively impenetrable”. Cultural dialogue has become internalised and operative in processes exempt from awareness.

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