How to Reject What in Dialogue

Schlöder, J.J.; Fernández, R.

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Julian J. Schlöder and **Raquel Fernández**
Institute for Logic, Language and Computation
University of Amsterdam
julian.schloeder@gmail.com   raquel.fernandez@uva.nl

Abstract

The ability to identify and understand *rejection moves* in dialogue is vital for successful linguistic interaction. In this paper, we investigate the different linguistic strategies available to express rejection and categorise them in a two-dimensional taxonomy. To wit, we categorise rejections by *what* aspect of their target utterance they reject and by *how* that rejection is expressed. Using this taxonomy, we annotate a set of 400 natural instances of rejection moves. From this data, we draw some tentative conclusions about the role of certain linguistic markers (such as polarity particles) with respect to the different strategies for expressing rejection.

1 Introduction

Partaking in a dialogue requires all interlocutors to coordinate on what they mutually take for granted, i.e. their *common ground* (Stalnaker, 1978) or their *shared commitments* (Asher and Lascarides, 2008). That is, dialogue proceeds (at least in part) by the making and accepting of proposals to update the shared information through the collaborative process of *grounding* (Clark, 1996; Poesio and Traum, 1997; Ginzburg, 2012).

However, the process of grounding can fail. A substantial part of prior research focuses on failures resulting from various kinds of misunderstandings (e.g. issues related to the acoustic channel, parsing, reference retrieval) and the mechanisms to repair such misunderstandings (e.g. clarification requests) (Schegloff et al., 1977; Purver, 2004; Ginzburg and Cooper, 2004; Schlangen, 2004). Moreover, it is evidently the case that not every proposal made in a dialogue is acceptable to all participants. Hence, even in the absence of misunderstandings, grounding can fail because one participant in the conversation *rejects* the proposal to update the common ground. As we point out

in earlier work (Schlöder and Fernández, 2015a), there is a continuity between rejections and other failures to ground. Notably, the repair mechanisms associated with rejections are clarification requests like *Why not?*.

Hence, to maintain coordination on what is mutually supposed, it is incumbent on any participant in a conversation to keep track of which proposals have been rejected. This issue also arises in some practical applications, e.g. summarisation tasks, for which one needs to compute which issues have been raised in a dialogue and which of these issues have been accepted (Galley et al., 2004; Wang et al., 2011; Misra and Walker, 2013).

It is however far from trivial to determine whether some response to a proposal constitutes a rejection (Horn, 1989; Walker, 1996; Lascarides and Asher, 2009). Compare for example (1b) and (2b), taken from Schlöder and Fernández (2014). Both have the same surface form, but when considered in context the former is an acceptance move whereas the latter is a rejection (also see Farkas and Bruce, 2010, Roelofsen and Farkas, 2015 for formal takes on the ambiguity of such responses).

(1) a. A: But its uh yeah its uh original idea.
    b. B: Yes it is.

(2) a. A: the shape of a banana is not its not really handy.
    b. B: Yes it is.

Comparing (3), (4) and (5) reveals another interesting contrast. The utterance (3b) rejects by making a counterproposal, i.e. by making a proposal that is incompatible with the proposal that is being rejected. This is not so in (4) and (5), where the second utterance rejects the first, but the propositional contents of proposal and response are compatible. This can be seen by observing that

the contents of (4a) and (5b), respectively, entail the contents of (4b) and (5a).

(3) a. B: Yes, a one.
   b. A: I say a two.

(4) a. B: No that's for the trendy uh feel and look.
   b. C: Yeah but everything is.

(5) a. A: It's your job.
   b. B: It's our job.

The rejecting force of (4b) and (5b) can instead by appreciated as follows. (4b) rejects (4a) by implicating *normal* $\rightsquigarrow$ *not interesting* whereas (5b) is rejecting the implicature of (5a) that *your job* $\rightsquigarrow$ *not my job* (Schlöder and Fernández, 2015b).

In this paper, we aim to get a more comprehensive and systematic picture of the different ways to express a rejection. We consider three dialogue corpora that are annotated with categories that allow us to identify rejection moves: The AMI Meeting Corpus (Carletta, 2007), the ICSI Meeting Corpus (Janin et al., 2003) and the Switchboard Corpus (Godfrey et al., 1992). We survey the rejection moves found in these corpora and develop a taxonomy that classifies them along two dimension: *what* they reject, and *how* this rejection is expressed. To see how these dimensions interact, we annotate a substantial fragment of the rejection moves in these corpora.

In the following section we outline some previous theoretical work about rejecting speech acts, noting that some substantial assumptions go into our working definition of *rejection move*. In Section 3 we present our taxonomy, including multiple examples from our corpora for each category. We describe our annotation procedure in Section 4 and summarise our results in Section 5.

2 Theoretical Background

To investigate the notion of *rejecting force* in dialogue requires making some theoretical choices. One tradition, going back to Frege (1919), sees a rejection of a content *p* as equivalent to the assertion that *not p*. Another tradition, where this is not so, may be traced back to Austin (1962). Austin talks about *cancellations* of arbitrary speech act, which amount to making it so that the effects of the cancelled speech act do not obtain. This latter, Austinian notion seems to be more appropriate for the study of dialogue.

When we talk about grounding a dialogue act, we mean that the act is *taken up* such that a certain,

essential effect of that act obtains (Clark, 1996). In the context of assertion, that effect would be that the assertion's content becomes common ground (Stalnaker, 1978). Cancellation (or, rejection) of that effect means that the content does *not* become common ground—but not that the negation of that content becomes common ground (which would be the essential effect of a Fregean rejection). Indeed, Stalnaker (1978) himself appears to espouse the Austinian view:

> "It should be made clear that to reject an assertion is ... to refuse to accept the assertion. If an assertion is rejected, the context [common ground] remains the same as it was." (Stalnaker, 1978, p.87).

Sometimes, Stalnakerian models are associated with the idea that the essential effect of an assertion—i.e. addition to common ground—is achieved immediately after the assertion has been made or understood (e.g. Murray, 2009). Taking rejection seriously reveals this to be a simplification. The actual picture is more complicated: the essential effect obtains *only if* the assertion has not been rejected. This means that one may view assertions as *proposals* to achieve their essential effect. That proposal is up for discussion and may be cancelled (Incurvati and Schlöder, 2017).

Note, however, that after an assertion is understood, something *is* immediately added to common ground: that the proposal to update the common ground with the assertion's content has been made. Stalnaker (1978) calls this the *first effect* (to be distinguished from the second, essential effect). This effect "cannot be blocked" (p. 87). Thus what is up for rejection is exactly the essential effect.

So far, this applies only to rejections of assertions, but as pointed out by Schlöder et al. (2018) one may associate *every* dialogue act with a proposal to achieve some essential effect that characterises what happens upon successful grounding of that act. They identify this effect as the *speech-act related goal* of the dialogue act, in the sense of Asher and Lascarides (2003). One significant consequence of this view, noted by Schlöder et al., is that one may reject rejections. To wit, a rejection proposes to achieve the effect of leaving some prior dialogue act ungrounded—this itself is up for acceptance or cancellation.

Thus, following Stalnaker and these additional considerations, we say that an utterance has *rejecting force* if it is interpreted as a proposal to *not*

achieve the essential effect of an earlier utterance. For example, assertions that *p* are rejected by utterances that propose to *not* add *p* to common ground. This may be achieved by asserting *not p*, but not necessarily (Khoo, 2015). Questions are rejected by dialogue acts that propose to not make any answer common ground; Commands are rejected by dialogue acts that propose to not create the obligations proposed by the command. Etc.

Furthermore, the essential effect of a dialogue act may be pragmatically enriched (Lascarides and Asher, 2009). That is, for example, an assertion proposes to make common ground not just its literal content, but also all of its implicatures. Hence rejections of implicatures, as seen in example (5) are rejections. Similarly, a dialogue act may implicate a rejection, as seen in example (4).

In what follows, we adopt the following terminology: an utterance is a rejection if it is about the essential effect of a prior utterance (the *rejection target*) and if it proposes to *not fully* achieve the (pragmatically determined) essential effect of that utterance. We refer to the part of the rejection target's essential effect that is proposed to remain unachieved as *what is rejected*.

3 How To Reject What: A Taxonomy

To create a taxonomy of the different ways in which rejections may be expressed, we surveyed a fragment of 250 utterances annotated as rejection in the AMI Meeting Corpus (Carletta, 2007) and identified commonalities. In this section, we discuss these categories—and their relevant subcategories—in turn.[1] In these descriptions, we mention examples from our data set which we have edited for readability by removing speech disfluencies.

• *What* is rejected in the target utterance:
  - (Some of) its content.
  - (Some of) its implicatures.
  - (Some of) its preconditions.
• *How* the rejection obtains its rejecting force.
  - By having content that is contrary to what is rejected.
  - By conversationally implicating content that is contrary to what is rejected.

  - By conventional implicature.
  - By expressing disbelief.
  - By irony.

In earlier work (Schlöder and Fernández, 2015b), we identified the additional theoretical option of rejecting *by* having a presupposition that is contrary to what is rejected, e.g. as in the constructed example (6), where *Frank stopped smoking* presupposes *Frank used to smoke*, which contradicts the content of (6a).[2]

(6) a. A: Frank never smoked.
    b. B: He stopped before you met him.

We did not, however, find any example of such a rejection move in our initial sampling or our annotation study. Similarly, it may be theoretically useful to separate rejections of conversational implicatures from rejections of conventional implicatures, but we did not find any examples of the latter in our data.

3.1 What

Content. We identify a rejection move as rejecting the *content* of its target if one interprets it as rejecting the semantic (as opposed to pragmatically enriched) contribution of the target. The principal members of this category (a) use propositional anaphora to select the content of the rejection target, as in (7), or (b) repeat the target content with an inserted or removed negation, as in (8) and (9), respectively.

(7) a. A: We can't make a docking station anyway.
    b. D: That's not true.
    what: content, how: contradiction

(8) a. B: It's a fat cat.
    b. C: It is not a fat cat.
    what: content, how: contradiction

(9) a. B: No, not everything.
    b. C: Yeah, everything.
    what: content, how: contradiction

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[1] Geurts (1998) already notes out that one can negatively respond to contents, implicatures, preconditions and metalinguistic content. His analysis of what he calls *denials* is however restricted to uses of the word *not*, wheras we consider a broader variety in *how* one can negatively respond.

[2] More generally, one may say that an utterance can add multiple *discourse units* to the discourse (what is asserted and what is presupposed may be treated as different units) and that a rejection can attach to any such unit by different discourse relations (Lascarides and Asher, 2009). Categorising rejections by *what* they attach to by *which relation* may make up a more fine-grained taxonomy of the *what* and *how* of rejection. We thank an anonymous reviewer for observing this.

Implicated content. We identify a rejection move as rejecting an *implicature* of its target if one interprets it as rejecting part of the pragmatic content of the target. For example, in (10), A does not explicitly assert that *rubber is too soft* in (10a), but B takes A to implicate this and rejects it.

(10) a. A: Rubber is kind of soft.
     b. B: Yeah, but not too soft we have decided.
     what: implicature, *how: contradiction*

We include in this category *rejections of rhetorical questions* like (11), where C conveys *nobody is gonna buy a remote just for the TV unless they've lost theirs* in a rhetorical questions, which A rejects by asserting a contrary content.

(11) C: I was like who's gonna buy a remote just for the TV unless they've lost theirs.
     A: Fashionable chic people will.
     what: implicature, *how: contradiction*

Precondition. We identify a rejection move as rejecting a *presupposition or precondition* if one interprets it as pointing out that some requirement for the rejection target fails. In (12), A does not assert that *they have not redesigned the product*, but D recognises this to be a precondition of A's contribution and points out that it does not obtain. In (13), A points out that an expression in B's utterance does not refer, and in (14), that a presupposition triggered by *know* fails.

(12) A: So I don't think we need to redesign the p the product .
     D: Uh that's what we've just done .
     what: precondition, *how: contradiction*

(13) a. B: you just rub on the cover, so you rub on the painting.
     b. A: No no, there's no painting
     what: precondition, *how: contradiction*

(14) a. B: I didn't know there was such a thing.
     b. A: No, there isn't.
     what: precondition, *how: contradiction*

We include in this category rejections that challenge the felicity condition of their rejection target. For example, it seems to be the case that knowledge is required for felicitous assertion (Williamson, 2000). In (15), C challenges A's assertion on the grounds of this condition.

(15) A: but we did we didn't get that.
     C: You don't know that.
     what: precondition, *how: contradiction*

One important felicity condition is that a contribution must be *relevant* or *on topic* (Asher and Lascarides, 2003; Roberts, 2012). In (16), A rejects C's utterance for being off topic.

(16) a. C: Yes, two, but only when you compare it with elderly.
     b. A: Uh, that is not the question.
     what: precondition, *how: contradiction*

3.2 How

Propositional content. We identify a rejection move as rejecting by *contradiction* if the semantic content of the rejection is incompatible with what it rejects. There are two principal options: (i) By making a claim that is incompatible with what is rejected, as in (17) or (2); (ii) by asserting the falsity of what is rejected, as in (7).

(17) C: And they're double curved .
     A: Single-curved .
     what: content, *how: contradiction*

Conversational implicature. We identify a rejection move as rejecting *by conversational implicature* if its semantic content is compatible with what it rejects, but implicates something that is incompatible.[3]

(18) a. C: This is a very interesting design .
     b. D: It's just the same as normal .
     what: content, *how: conversational impl.*

Prima facie, something can be both *normal* and *interesting*, so the content of (18b) does not outright contradict the content of (18a). However, in this context, (18b) can be read as a rejection move by pragmatically enriching it with the scalar implicature that *normal $\rightsquigarrow$ not interesting*.

For the purposes of this study, we do not wish to commit to any particular theory of conversational implicature. Therefore, we include as *rejections by conversational implicature* also the following special cases that, depending on one's preferred theory, may or may not be classified differently.

We include in this category those rejection moves that point out *counterevidence* to what is rejected, i.e. information that is not outright contradictory, but entails that what is rejected is unlikely (Asher and Lascarides, 2003). One example is (19). While *not having the slogan* and *the slogan*

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[3]On some theories of implicature, this would not be possible as the prior context would be considered as cancelling the contradictory implicature See Walker, 1996, Schlöder and Fernández, 2015b for discussion on how to resolve this.

being obvious are not contraries, the latter constitutes counterevidence to the former.

(19) a. B: We don't have the slogan though.
  b. A: slogan is quite obvious.
  what: content, how: conversational impl.

A special kind of counterevidence are unwelcome consequences of a proposed course of action. In (20), *D* rejects a proposal by *A* by pointing out a drawback that would follow from implementing *A*'s suggestion. However, since one may follow *A*'s suggestion and accept the drawback, the content of (20b) is not contrary to (20a), which is why we categorise this as a rejection by implicature.

(20) a. A: Drop the special colour.
  b. D: Well. That would make it less appealing. So that's no option.
  what: content, how: conversational impl.

We include as rejections by implicature also utterances that express a *negative evaluation* of the rejection target, as in (21) where *A* negatively evaluates *D*'s proposal using the negative sentiment term *weird*.

(21) D: but not important is the channel selection,
  A: That's a little weird.
  what: content, how: conversational impl.

Note that one can express negative evaluations by using vocabulary that expresses a *positive* sentiment, if the rejection target has negative polarity. In (22), *A* uses the positive term *better* to reject *C*'s proposal to *use a ball instead of a wheel*.

(22) a. C: not a wheel but a ball,
  b. A: No, a wheel is better.
  what: content, how: conversational impl.

Finally, we also include rejections that make their point using a rhetorical question, like (23).

(23) a. A: with some kind of cutting edge battery technology
  b. D: For twelve Euros?
  what: content, how: conversational impl.

In (23), *D* rejects the proposal to use *cutting edge battery technology* by using a rhetorical question that implicates that this is impossible to achieve *for twelve Euros* (which is determinable from context to be a constraint on the task *A* and *D* are working on).

Conventional implicature. We identify a rejection move as rejecting *by conventional implicature* if it uses an idiomatic fixed phrase to express rejection, as in the following examples:

(24) a. A: we should get him to do that.
  b. B: I disagree.
  what: content, how: conventional impl.

(25) a. D: That's stupid.
  b. B: We'll see.
  what: content, how: conventional impl.

(26) a. D: Look at it. That is a piece of work.
  b. C: You're kidding.
  what: content, how: conventional impl.

Expression of disbelief. We identify a rejection move as rejecting *by expressing disbelief* if it expresses that the speaker does not believe what is rejected (without having content that is outright incompatible with the target). First, one may directly state *I don't know* (27) or *I'm not sure* (28).

(27) a. A: maybe I can learn something.
  b. B: Well, I don't know how much you can learn.
  what: content, how: expr. disbelief

(28) a. B: but then you buy a new cover.
  b. A: I'm not sure if it's the it's the entire cover you change.
  what: content, how: expr. disbelief

Second, we include a rejection move in this category when it expresses hesitation to accept the rejection target. One example are *Why*-questions as in (29); another are hedging phrases like *maybe not* (30) or *I guess* (31).[4]

(29) A: Yeah, or just different colours would be uh I don't know if people also wanna spend more money on fronts for their uh remote control.
  B: Why not?
  what: implicature, how: expr. disbelief

(30) a. A: I need to get started on that.
  b. B: Well, maybe not.
  what: content, how: expr. disbelief

(31) a. A: that's not the first question.
  b. B: well - well i guess.
  what: content, how: expr. disbelief

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[4]Such expressions of disbelief have also been called *resistance moves* by Bledin and Rawlins (2016), as a category separate from rejection. However, according to our theoretical framework—where rejecting force means non-acceptance into common ground—resistance moves are just a special kind of rejection.

Irony. Finally, we identify a rejection move as rejecting *by irony* if it would be read as an acceptance move, save for the fact that it is best read ironically (e.g. because it is exaggerated). Two vivid examples are (32) and (33).

(32) a. C: I want gold plating.
 b. D: Yeah right.
 what: content, *how: irony*

(33) a. C: it's a normal colour,
 b. A: Yellow rubber.
 c. A: Yeah, normal.
 what: content, *how: irony*

4 Corpus Study

4.1 Data

We collected all utterances from the AMI Corpus (Carletta, 2007), the ICSI Corpus (Janin et al., 2003) and the Switchboard Corpus (Godfrey et al., 1992) that are annotated as rejection moves. ICSI and Switchboard follow the DAMSL definition of rejection moves (Core and Allen, 1997), whereas AMI uses an idiosyncratic scheme for dialogue acts. In particular, the AMI scheme annotates some adjacency pairs as the second part being an *objection or negative assessment* of the first part, which we take to contain the class of rejections. In total, we found 929 such utterances (697 from AMI, 157 from Switchboard, and 75 from ICSI) from which we selected a random sample of 400 to annotate (317 AMI, 63 Switchboard, 20 ICSI).

However, not all these data correspond to our theoretical definition from Section 2. In case of the AMI corpus, there is a systematic reason: the class *objection or negative assessment* also contains adjacency pairs like (34b)–(34c).

(34) a. B: Are you left-handed?
 b. C: No.
 c. B: Oh, pity.

Clearly, (34c) does not cancel any essential effect of (34b): the latter utterance is an answer to the question in (34a) and its essential effect—that the answer *C is not left handed* becomes common ground—is achieved. We therefore instructed our annotators to not take for granted that any item in the data set is a rejection and mark any cases that do not fit the theoretical definition.

To facilitate annotation, we displayed to the annotators the rejecting utterance and its rejection target within context. Specifically, we displayed

dimension	initial set	after refinement
what	0.35	0.68
how	0.56	0.76

Table 1: Inter-annotator agreement (Cohen's κ) before ($n = 99$) and after ($n = 50$) refinement of the annotation manual.

the full turn[5] containing the rejection target, the full turn containing the rejecting utterance and any other utterances in between these turns. For the AMI and ICSI corpora we also added the two utterances preceding the rejection target and the two utterances succeeding the rejecting utterance.

4.2 Annotation procedure

The data was annotated with the two-dimensional taxonomy outlined in Section 3 by two expert annotators who are versed in the theoretical background given in Section 2.

This is a difficult annotation task, in particular in cases where *what* is rejected is not "content" and simultaneously *how* it is rejected is not "contradiction". For example, both annotators agreed that in the following example, C uses an implicature to reject an implicature of B's utterance.

(35) a. B: I don't see why we should use the flipping mechanism.
 b. C: I thought it would be cool.
 what: implicature, *how: conversational impl.*

The interpretation of (35) is that B implicates, by way of an embedded question, that *they should not use the flipping mechanism*, which is what is rejected by C's utterance in that (35b) positively evaluates that *they should use the flipping mechanism*. Although the annotators were provided with much more context than we display here, this interpretation requires careful and complex reasoning that would be difficult to achieve with naive or crowd-sourced annotators.

We pursued the following strategy. The annotators were first given a shared set of 99 items. They then compared their disagreement, agreed on a gold standard on that set, and proposed refinements to the annotation manual that follow the

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[5]In the Switchboard corpus, we use the preexisting segmentation into turns. In the AMI and ICSI corpora we define the turn an utterance u is contained in to be the maximum sequence of utterances by the same speaker that contains u and that is only interrupted by other speakers with backchannel and fragmented/aborted contributions (where the classification of an utterance as backchannel and fragment follows the preexisting annotation in these corpora).

gold standard. To track the progress made by this refinement, they then annotated another shared set of 50 items. Their inter-annotator agreement (measured in Cohen's κ, Cohen, 1960) before and after the refinement is displayed in Table 1. The inter-annotator agreement after refinement is substantial given the complexity of this task. The remaining 251 items were then annotated by a single annotator using the refined manual.

One result of this intermediate step is that sometimes even substantial context was insufficient to determine the nature of an utterance that was annotated as a rejection. For example, the annotators agreed that example (36) is of this kind; we display this example here with the full context available to the annotators with the rejecting utterance and the rejection target, as previously annotated in the ICSI corpus, in italics.

(36) a. A: right?
   b. A: i mean you scan - i mean if you have a display of the waveform.
   c. B: *oh you're talking about visually.*
   d. C: yeah.
   e. B: i just don't think ==
   f. C: *w- - well | the other problem is the breaths.*
   g. C: cuz you also see the breaths on the waveform.
   h. C: i've - i've looked at the int- - uh - s- - i've tried to do that with a single channel.
   i. C: and - and you do see all sorts of other stuff besides just the voice.

One may read (36c) as B offering an interpretation of what A is suggesting and (36f) as implicating counterevidence to that interpretation. But other readings are possible, e.g. that (36f) points out a problem that neither A nor B have identified.

We instructed the annotators to mark such cases—where one needs to speculate about what *might* be meant, due to the absence of a clearer interpretation—as *insufficient context*. In total, 48 utterances from the 400 selected for annotation were annotated as either being determinately not a rejection (like (34)) or being unclear (like (36)).

4.3 Results

The results of the annotation are displayed in Table 2. Perhaps not unexpectedly, the vast majority of rejecting utterances are interpreted as rejecting the content of their target. Additionally, the majority of rejections are outright rejections by contradic-

how	what		
	content	impl.	precon.
contradiction	142	14	17
convers. impl.	111	34	0
convent. impl.	5	0	0
disbelief	26	0	0
irony	3	0	0

Table 2: Distribution of rejection types.

how	what		
	content	impl.	precon.
contradiction	.85	.86	.82
convers. impl.	.49	.47	-
convent. impl.	0	-	-
disbelief	.65	-	-
irony	.33	-	-

Table 3: % of polarity particles in rejections.

tion (most of them using a polarity particle like *no*, see below). This seems to be somewhat in tension with politeness theory (Brown and Levinson, 1978) that predicts that indirect ways of expressing disagreement are preferred.

Rejections of implicatures and of preconditions have previously been noted to be rather rare (Walker, 1996; Schlöder and Fernández, 2015b). We did, however, find enough of them to make some noteworthy observations.

All rejections of preconditions we found are rejected by outright contradiction. This matches the theoretical claim that utterances that respond to a presuppositions (or not-at-issue content in general) are highly marked and that one needs to be explicit when responding to them (Geurts, 1998; Tonhauser, 2012). Moreover, although there were only a few items annotated as rejections by conventional implicature, expression of disbelief, or irony, these were all annotated as rejecting content. It stands to reason that a conventional implicature rejection also conventionally is about the content of its rejection target. But it is unexpected that there is no expression of disbelief about non-explicit content; we cannot think of a theoretical reason for this. Finally, that rejections by irony only occur as rejecting content in our dataset may be simply due to the sparsity of ironic utterances.

To gain some insight on the use of polarity particles, we computed how many rejecting utterances in each category contain a polarity particle (i.e. one of *yes, no* or the more informal vari-

ants *nope, yeah, nah, nee, nay, yea*). These results are displayed in Table 3. Interestingly, while polarity particles seem to appear somewhat more commonly with utterances that contradict outright (many of these are just bare *no*), they do appear fairly frequently in rejections that reject by conversational implicature and by expression of disbelief as well. This confirms an empirical claim made by Dickie (2010) and Incurvati and Schlöder (2017) that *no* does not always express that the rejection target expressed a falsity.

That no conventional implicature occurred with a polarity particle, however, seems to be an artifact of the sparsity of conventional implicatures, as *No, I disagree* seems intuitively possible as a rejection move. The single rejection by irony that contains a polarity particle is *Yeah right* from example (32); (33) was not counted here because the polarity particle only occurs in the utterance that follows the one annotated as a rejection (per the existing annotation in the AMI corpus).

4.4 Interesting cases

In our annotated data, we find some rejections that deserve more fine-grained attention than captured by our annotation scheme. We close our analysis by discussing two such cases in depth.

First, it seems that rejections of rhetorical questions take the form of an answer to the question interpreted non-rhetorically, as in the example (11) from Section 3. One may be inclined to conclude that rhetorical questions are only interpreted as making claims when they are not rejected. This would complicate the theoretical analysis of such rhetorical questions (see, e.g., Biezma and Rawlins, 2017). However, we found one rhetorical question in our data that is rejected by an utterance that does not have the form of an answer.

(37) a. B: How many people would notice that, though?
   b. A: But they'll notice it after like a year, *what: implicature*, *how: conversational impl*

The analysis of this example is rather complex. The rhetorical question (37a) is interpreted as the claim that *few people would notice that*, which in turn implicates that *that does not matter*. The speaker of (37b) seems to grant that *few people would notice that*, but rejects that *that does not matter* by providing counterevidence (*they'll notice*, hence *it does matter*), making (37b) the rejection by implicature of an implicature of (37).

So, it would be incorrect to conclude that rhetorical questions are rejected by answering them as questions. However, it may still be the case that one answers a rhetorical question (i.e. treats it as a genuine question) to reject its core proposition (which the rhetorical question is interpreted to assert). We do not have enough rhetorical questions in our data to settle this matter definitively.

Second, utterances like (38b) seem to offer *refinements* of a previous utterance.

(38) a. A: um - even though there is probably no train from here to new york.
   b. B not direct.

The interpretation of (38) seems to be this. The utterance (38a) is ambiguous between the claim that *there is no direct train from here to NY* and *there is no train at all from here to NY*. *B* makes clear that she is only willing to agree to the former.

The preexisting annotation of the ICSI corpus identifies (38b) as a rejection of (38a). It is not clear whether (38b) counts as a rejection in the sense of our definition from Section 2. It is oftentimes incorrect to say that an utterance makes a single, unambiguous proposal to update common ground—rather, what precisely is proposed is the subject of a collaborative negotiation process (Clark, 1996). By specifying which possible proposal she is willing to accept, *B* seems to be contributing to this process, but not to be rejecting any proposal; unless, that is, we count the exclusion of one possible proposal as such a rejection. Clearly, we conclude, our theoretical picture is still too coarse to fully capture how speakers negotiate what becomes common ground. For now, we have annotated (38) as not being a rejection move.

5 Conclusion

We have presented a fine-grained taxonomy for categorising rejection moves that is both theoretically motivated and driven by actual dialogue data. We classified rejections along two dimensions—*what* aspect of the target utterance is being rejected and *how* the rejection is realised—and used this scheme to annotate rejection moves from three different dialogue corpora: AMI, ICSI, and Switchboard. We expect the taxonomy and the annotated dataset to be a useful resource for further studies on the linguistic strategies available to express rejection in English conversation.[6]

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[6]Data available at: https://uvaauas.figshare.com/articles/Taxonomy_of_Rejection/8870615

Acknowledgements

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