What projects and why[*]

Mandy Simons
Carnegie Mellon University

Judith Tonhauser
The Ohio State University

David Beaver
The University of Texas at Austin

Craige Roberts
The Ohio State University

Abstract Projection is widely used as a diagnostic for presupposition, but many expression types yield projection even though they do not have standard properties of presupposition, for example appositives, expressives, and honorifics (Potts 2005). While it is possible to analyze projection piecemeal, clearly a unitary explanation is to be preferred. Yet we show that standard explanations of projective behavior (common ground based theories, anaphoric theories, and multi-dimensional theories) do not extend to the full range of triggers. Instead, we propose an alternative explanation based on the following claim, which is intended to apply to all content which occurs in embedded contexts: Meanings project IFF they are not at-issue, where at-issueness is defined in terms of the Roberts' (1996) discourse theory. Thus, and despite their apparent heterogeneity, projective meaning triggers emerge as a natural class on the basis of the not at-issue status of their projective inference.

Keywords: presupposition; projection; at-issue; conventional implicature; accommodation

1 Introduction

The empirical phenomenon at the center of this paper is *projection*, which we define (uncontroversially) as follows:

(1)   **Definition of projection**
         An implication *projects* if and only if it survives as an utterance implication
         when the expression that triggers the implication occurs under the syntactic
         scope of an entailment-cancelling operator.

Projection is observed, for example, with utterances containing aspectual verbs like *stop*, as shown in (2) and (3) with examples from English and Paraguayan Guaraní

(Paraguay, Tupí-Guaraní).[1] The Guaraní example in (2) and its English translation have at least the following implications: (i) Carla has previously smoked, and (ii) Carla stopped smoking. The first but not the second of these implications is also conveyed by the question version of sentence (2), as in (3a), or when (2) is embedded under entailment-cancelling sentential operators, such as negation, as in (3b), the antecedent of a conditional, as in (3c), or an epistemic modal, as in (3d). Hence, by the definition in (1), the first but not the second implication of (2) projects.

(2)   Cárla o-heja la jepita.
        Carla 3-stop the smoke

        'Carla stopped smoking.'

(3)   a. Cárla-pa o-heja la jepita?
           Carla-QU 3-stop the smoke

           'Did Carla stop smoking?'

        b. Cárla nd-o-hejá-i   la jepita.
           Carla NEG-3-stop-NEG the smoke

           'Carla did not stop smoking.'

        c. Cárla o-hejá-ramo la jepita, a-vy'a.
           Carla 3-stop-if   the smoke 1sg-happy

           'If Carla stopped smoking, I am happy.'

        d. I-katu   Cárla o-heja la jepita.
           3-possible Carla 3-stop the smoke

           'It's possible that Carla stopped smoking.'

    Besides aspectual verbs, projection has been classically studied in conjunction with the presuppositions triggered by factive verbs and nouns, definite noun phrases, additive particles like *too*, clefts and intonational backgrounding, among others (e.g. Langendoen & Savin 1971; Soames 1989; Beaver 1997). In much of the literature, it has been assumed that implications which project are presuppositions, and that projection is in some way a consequence of presuppositional status.

    More recently, however, various authors have noticed that not all that projects is a (standard classical) presupposition (e.g. Chierchia & McConnell-Ginet 1990; Beaver 2001; Potts 2005; Roberts 2006; Roberts, Simons, Beaver & Tonhauser 2009). The

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1 The Guaraní examples in this paper are given in the standardized orthography of Guaraní used in Paraguay (Ministerio de Educación y Cultura 2004), except that all postpositions are attached to their host. Following the official orthography, accents are not written for normally accented words (stress on the final syllable); stressed nasal syllables are marked with a tilde. The following glosses are used: 1/2/3(sg) = first/second/third person (singular), IMP = imperative, NEG = negation, pron = pronoun, QU = question marker, RC = relative clause.

content of non-restrictive relative clauses (NRRCs), for example, projects but is not presupposed (Chierchia & McConnell-Ginet 1990). The NRRC in (4a) introduces the implication that Malena is Juan's friend (in both the Guaraní and the English versions) and this implication is also conveyed by the variant in (4b) where the matrix clause is negated.

(4)   a. Maléna, ha'é-va   Juan angiru, o-ho Caaguasú-pe.
          Malena 3.pron-RC Juan friend   3-go Caagasu-to

          'Malena, who is Juan's friend, went to Caaguasu.'

       b. Maléna, ha'é-va   Juan angiru, nd-o-hó-i   Caaguasú-pe.
          Malena 3.pron-RC Juan friend   NEG-3-go-NEG Caaguasu-to

          'Malena, who is Juan's friend, did not go to Caaguasu.'

The content of NRRCs belongs to the class that Potts (2005) identifies as conventional implicatures. Other Pottsian CIs, including the content of epithets, honorifics and appositives, also project but are not presupposed. In (5), the German second person politeness morpheme *Sie* introduces the implication that the speaker is in a deferential position with respect to the addressee; this implication is conveyed although *Sie* occurs in the antecedent of a conditional, an entailment-cancelling environment. The implications introduced by the appositive in (6), that Bill is a big drinker, and by the expressive *son-of-a-bitch* in (7), that the speaker has a negative attitude towards Bill, likewise survive as utterance implications in this environment.

(5)   Falls Sie   hungrig sind, wird mein Sohn das Essen servieren.
       If   you(formal) hungry are   will my   son   the food serve

       'If you (formal) are hungry, my son will serve the food.'

(6)   If Bill, a big drinker, is here, we'll have fun.

(7)   If that son-of-a-bitch Bill left, he'd better not have taken the flower arrangement.

We hypothesize that projection is a unified phenomenon and in this paper develop the proposal that the relevant implications of these diverse expression types project because they share a pragmatic property, namely *not-at-issueness*, introduced in detail below. Before turning to our proposal, we review in the next section three previous approaches to projection. Since these were developed with only a subset of projective meanings in mind, namely presuppositions, it is perhaps not surprising that extending these approaches to the full range of projective meanings is problematic for both empirical and theoretical reasons.

2 Previous approaches to projection

2.1 Common ground approaches to projection

Among the best known explanations of projection are common ground approaches (Stalnaker 1973, 1974; Karttunen 1974; Lewis 1979; Heim 1983). These approaches are predicated on the assumption that utterances serve to update contexts, which are typically construed as the common ground. When a sentence has a (conventional) presupposition, context update is defined only if the relevant context entails the content of the presupposition. When the presupposition is triggered by an embedded constituent, its presuppositional requirements may be satisfied by a local extension of the context. Global projection arises when the presuppositions triggered by an embedded constituent must be satisfied by the initial (global) context. In the Guaraní and English versions of (8), for example, the possessive noun phrase *che-kyha* 'my hammock' triggers the presupposition that the speaker owns a hammock. Since this presupposition is not satisfied locally, i.e. by the antecedent of the conditional, it must be satisfied by the initial (global) context, resulting in the intuition of projection.

(8)   Context: The speaker is standing next to her hammock.

Nde-kaigué-ramo, e-ke   che-kyhá-pe.
2sg-lazy-if   IMP.2sg-sleep 1sg-hammock-in

'If you're feeling lazy, sleep in my hammock.'

Common ground approaches are generally appealing for accounting for the behavior of a subset of presuppositions, including those of pronouns and of additive particles like *too*. It is not clear, however, that all commonly recognized presupposition triggers are consistently associated with a common ground requirement (see e.g. Abbott 2000 on definites, clefts and embedded announcements, and Simons 2007 on factives). Moreover, it is unnatural to extend this type of account to the full range of projective meanings, many of which, as already discussed, are explicitly distinguished from presuppositions. The content of NRRCs and appositives, for example, is canonically intended as new information to the addressee (Chierchia & McConnell-Ginet 1990; Beaver 2001; Potts 2005); the use of these expressions is ruled out precisely when the relevant content is clearly common ground, as illustrated by the infelicity of the second utterance in (9) as a continuation of the first.

(9)   Bob and Carl are sledders. #Bob, **a sledder**, participated in the 2010 Winter Olympic Games.

As is well known, even classic presupposition triggers can be used when the presuppositions they trigger are not already in the common ground. These cases are

typically treated within a common ground theory as involving accommodation — a process of "pre-updating" the context (common ground) with the presuppositional information prior to carrying out the update indicated by the sentence as a whole. Following Lewis (1979), accommodation is often treated as a kind of rescue strategy, triggered by an apparent violation of a common ground requirement.[2] Suppose, then, that one were to extend the common ground account to projective expressions which are clearly allowed — perhaps only allowed — when their content is not in the common ground. To do this, it would be necessary to allow that accommodation is the default strategy for interpretation of these items. But this seems contrary to the standard understanding of accommodation, as a process triggered by an actual, observable, common ground constraint.

There is, moreover, evidence that true common ground constraints are in fact not amenable to accommodation. Perhaps the most convincing cases of expressions which robustly require some existing shared information are anaphors, including ordinary pronouns as well as additive particles like *too*. These require the salience (or familiarity) of an antecedent in the common ground: (10) is felicitous only if a unique woman is salient in the common ground, thus satisfying the presupposition of the pronoun *she*.

(10)   If she didn't sleep in the hammock, I don't know where she slept.

The common ground requirement of anaphors is well known to resist accommodation (e.g. Geurts & van der Sandt 2004; Zeevat 2002; Beaver & Zeevat 2007; von Fintel 2008; Gauker 2008). Thus, in the paradigm case of a common ground constraint, accommodation is generally ruled out. This suggests that it is conceptually problematic to treat accommodation of common ground constraints as the norm for some constructions. We conclude that common ground approaches to projection, which were developed mainly with presuppositions in mind, cannot plausibly be extended to capture projective behavior in general.

2.2   Anaphoric approaches to projection

Presuppositions are analyzed as a type of anaphor in e.g. van der Sandt (1992) and Geurts (1999). The identification of an antecedent produces the effect of projection: in e.g. van der Sandt's Discourse Representation Theory model, the antecedent of the pronoun *she* in (10) would preferably be accommodated in the global Discourse Representation Structure, thus producing the effect of projection.

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2 Stalnaker (e.g. Stalnaker 2002: pp.710–711), however, sees accommodation as part of the normal evolution of contexts in response to incoming information, not as a rescue strategy. A formal model of accommodation as evolution of common ground is given by Beaver 1992, 2001.

Like the common ground approaches, the anaphoric approaches were never claimed to account for the full range of projective meanings. In fact, it would be unnatural to so extend them as there is no evidence that e.g. appositives or expressives carry anaphoric requirements. Rather, there is evidence against such a requirement, as illustrated by (9) above. The appositive "a sledder" in the second sentence of (9) does not have an anaphoric requirement: if it did, we would expect the requirement to be satisfied by the first utterance.

A second peculiarity of anaphoric approaches, at least if extended to the full range of projective meanings, mirrors the issue discussed above for common ground approaches: the paradigm cases of anaphoric presuppositions are precisely the cases where accommodation is highly restricted. Thus it would be peculiar to *explain* accommodation as the result of an anaphoric requirement.

2.3   Multicomponent approaches to projection

Karttunen & Peters (1979) and Potts (2005) divide meanings into independent components (or dimensions). An utterance like (11a), for example, might be analyzed into the two components in (11b):

(11)   a. Bill, the son-of-a-bitch, owes me a drink.

      b. ⟨ owes(me, bill, drink), son-of-bitch(bill) ⟩

In Potts' (2005) system, conventional implicatures are a distinguished type of meaning, which cannot interact semantically with ordinary, non-CI meanings and in particular, cannot be arguments of operators which are part of the non-CI component. This independence between meaning components is what gives rise to the effect of projection in his model.

The proposal we advance below also maintains that projection is the result of operators "ignoring" some of the content triggered in their scope. However, there are two reasons we do not attempt to explain projection as a result of semantic independence. First, while Potts provides empirical evidence for independence between meaning components (e.g. with respect to binding between regular content and conventional implicatures), his conclusions have been questioned by Amaral, Roberts & Smith (2007), who provide evidence that there may be semantic dependencies between ordinary content and conventional implicatures. Second, independence of meaning components could not possibly be a general explanation of all types of projection (and we must note here that Potts never claimed it could be), since presuppositions interact with ordinary content, and e.g., can be bound. Historically, this is perhaps the main reason why Karttunen & Peters' (1979) two-component model was dropped as an account of presupposition projection.

3 Proposal: Not-at-issue content projects

The proposal we motivate in this paper is that projection is intimately tied to discourse structure. We claim that projection is a consequence of the scope of sentential operators such as negation, conditionals and modals typically being limited roughly to what is understood as the main point, or, in the terminology we will use, the *at-issue content* of the utterance. Whatever does not belong to the main point — the *not-at-issue content* — is left out of the scope of the operator, and hence projects. Thus, the specific hypotheses we will defend are these:

(12) **Hypotheses about what projects and why**

a. All and only those implications of (embedded) sentences which are not-at-issue relative to the Question Under Discussion in the context have the potential to project.

b. Operators (modals, negation, etc.) target at-issue content.

Before making the notion of at-issueness more precise below, we want to point out that the idea that projective meanings have a particular discourse status is not entirely new but has, in fact, been advanced under a number of related guises by previous authors about different kinds of projective meanings. Stalnaker (1974: 198), among others, describes presuppositions as "background beliefs of the speaker", which are "propositions whose truth he takes for granted, or seems to take for granted, in making his statement" and Soames (1989: 553) likewise characterizes presuppositions as having this non-central status in the set of propositions conveyed by an utterance when he writes that "[t]o presuppose something is to take it for granted in a way that contrasts with asserting it"; see also Chierchia & McConnell-Ginet 1990: 280. Horton & Hirst (1988: 255) characterize a presupposition as "a proposition that is conveyed by a sentence or utterance but is not part of the main point", with "not part of the main point" a notion not defined but reminiscent of Potts' general claim that the content of conventional implicatures is not at-issue, or not 'what is said'. Abbott (2000: 143f.) likewise hints at the relevance of the discourse status of a proposition for projection when she writes that "...what is asserted is what is presented as the main point of the utterance — what the speaker is going on record as contributing to the discourse. [...] Anything else will have to be expressed in another way, typically by being presupposed". The remainder of this paper fleshes out more precisely what it means for an implication to be not at-issue in a particular discourse context and how such implications can be identified.

4 Defining at-issueness

The notion of at-issueness which we will characterize draws on Roberts' (1996) concept of a Question Under Discussion (QUD). The QUD is a semantic question (i.e. a set of alternative propositions) which corresponds to the current discourse topic. The QUD may be the value of an actual question that has been asked; more typically, it is implicit in the discourse. Once a question is under discussion, it remains so until it has been answered or determined to be practically unanswerable. We will say that such a question is *resolved*. Felicitous conversational moves must constitute attempts to resolve the current QUD. We will say that an utterance which constitutes such an attempt, or a speaker who produces an utterance which constitutes such an attempt, *addresses the QUD*. Here, we restrict attention to two types of conversational moves: assertions and questions.

Utterances can address the QUD in a variety of ways. The simplest way is just to answer it. Answers can be complete or partial: A complete answer eliminates all alternatives but one; a partial one eliminates at least one alternative. So, a complete answer to the question: "Which students are defending this semester?" will list all who are defending. An answer such as "Francesco, and maybe some others," constitutes only a partial answer. Assertions which constitute either complete or partial answers to the QUD count as addressing the QUD. In addition, a speaker may address the QUD by making an assertion whose content merely *contextually entails* a (partial or complete) answer to the QUD. For example, a speaker might answer the question "Is Avi old enough to drink?" by saying "He's twenty-two." Assuming that the legal age for drinking in the relevant location is common ground, then the assertion will contextually entail an answer to the question. Another way to address the QUD is to raise another question, perhaps initially easier to answer than the QUD itself, which will help in ultimately resolving the QUD, in the sense that giving an answer to the new question will provide at least a partial answer to the QUD. So, for example, a speaker might address the question "What will Bill drink?" by raising the related question "Does Bill drink beer?". Using these basic relations, we define a notion of Relevance to the QUD for assertions and questions:

(13)   **Relevance to the QUD**

   a. An **assertion** is relevant to a QUD iff it contextually entails a partial or complete answer to the QUD.

   b. A **question** is relevant to a QUD iff it has an answer which contextually entails a partial or complete answer to the QUD.

Relevance to the QUD is the fundamental notion in our definition of at-issueness.[3] For technical reasons, rather than defining at-issueness directly for a proposition, we

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3 This definition of Relevance is overly restrictive and should be weakened at least to allow for

define it via the yes/no question associated with a proposition. For any proposition *p*, let *?p* denote the question whether *p*, i.e. the partition on the set of worlds with members *p* and ¬*p*. Then the basic definition of at-issueness is:

(14)   A proposition *p* is **at-issue** relative to a question Q iff *?p* is relevant to Q.

In section 6, we'll consider some apparent difficulties with this simple notion of at-issueness, and consider a revision. To begin with, though, let's see how the proposed definition works in an example, how it gives rise to the desired predictions, and some further desirable consequences of our general approach. In example (15), A's reply is our target utterance:

(15)   *Background scenario: a nutritionist has been visiting first grade classrooms*
        to talk to the children about healthy eating
        Q: What most surprised you about the first graders?
        A: They didn't know that you can eat raw vegetables.

To identify the implications that project (from under the matrix clause negation) in A's utterance, we examine which implications of the proposition embedded under negation, i.e. the implications of "They knew that you can eat raw vegetables", are (not-)at-issue. For ease of presentation, we examine only two of the candidate propositions. The first candidate is the factive entailment:

(16)   You can eat raw vegetables.

Let's call this proposition *p*. From *p*, we derive the yes/no question *?p* "Can you eat raw vegetables?". We then observe that in the context given, this question has no answer which contextually entails an answer to the QUD Q in (15). That is, learning that you can eat raw vegetables does not enable one to derive an answer to question Q; and neither does learning that you cannot eat raw vegetables. Since *?p* is not relevant to the QUD, *p* is not-at-issue according to our definition in (14), and thus, on our account, is predicted to project, according to hypothesis (12a), as indeed it is observed to do.

Now we consider the maximal entailment of the embedded proposition:

(17)   They knew that you can eat raw vegetables.

discourse moves which merely raise or lower the probability of some answer to the QUD being correct. Consider for example the sequence: Q: "Is it going to rain?" A: "It's cloudy." A's utterance does not contextually entail an answer to the QUD (at least not in Pittsburgh, PA). Intuitively, it is relevant because it somewhat raises the probability of an affirmative answer to the QUD. For now, we restrict attention to the simpler type of case characterized by the definition given.

Let's call this proposition *q*. Again, we construct from *q* the associated yes/no question *?q*. The question of whether the knowledge claim holds has an answer (i.e. the assertion) which contextually entails an answer to the QUD. Hence, this question is relevant to the QUD, and hence *q* is at-issue. By hypothesis (12b), it is because it is at-issue that it can be targeted by negation, and hence does not project.

5 Discussion of the hypotheses

5.1 Some desirable consequences

We have proposed that projective material is not-at-issue relative to the QUD, with at-issueness characterized as relevance to the QUD. One important aspect of this proposal is that it provides a unified account of projection, regardless of whether the projecting element is a classical presupposition, a conventional implicature, or something not easily classifiable (such as the prejacent of *only*).

Indeed, this proposal suggests a rather straightforward treatment of another well-known case of projection, that of intonationally backgrounded material. There is a long standing observation that this material projects, while focussed material "associates" with operators, as illustrated by the examples in (18) from Kratzer 1989, where the F-marked expressions are focused and targeted by negation:

(18)   a. Paula isn't registered in [Paris]$_F$.
         (≈ Paula is registered somewhere, not in Paris.)

    b. [Paula]$_F$ isn't registered in Paris.
         (≈ Someone is registered in Paris, not Paula.)

Other researchers have proposed special purpose rules for explaining projection of non-focussed material, most notably Geurts & van der Sandt (2004) in the recent literature. For us, however, the observation is accounted for by two independently motivated claims. First, we adopt the rather standard assumption that focus indicates what question is under discussion (cf. Jackendoff 1972; Roberts 1996). The QUD can, in effect, be constructed from intonationally prominent material, while intonationally backgrounded material is treated as independent of the QUD, that is, as not-at-issue. Second, we claim that not-at-issue material projects, cf. hypothesis (12a). From these two claims, the observation about the projection of non-focussed material follows directly. Certainly, this sketch requires further fleshing out, but it suggests that this case of projection too can be brought under the umbrella of our hypotheses.

There is a further very basic benefit yielded by our account. As discussed earlier, there is a standard observation in the literature that typically projective material is "backgrounded" (Stalnaker), "non-main-point" (Abbott) or "not-at-issue" (Potts).

Our approach provides a straightforward explanation of this cluster of observations: on our account, that which projects is necessarily not-at-issue.

5.2 Interaction of projection and answerhood

Our hypothesis that material projects if and only if it is not-at-issue predicts that if typically projective material is rendered at-issue, it will fail to project. In this section, we will argue that this is indeed the case; but we will also show that the construction of examples which demonstrate this is a delicate matter.

The easiest way to test the prediction is in question/answer sequences, in which conversational structure is transparent. However, the most basic examples of this sort seem to run counter to our hypothesis. Consider for example:

(19)　Q1:　Are there any boys in your class?
　　　　A1: # I (don't) like the boys in my class.

(20)　Q2:　What's the weather like?
　　　　A2: # Bob realizes / doesn't realize that it's raining.

According to the simple version of our definition of *at-issueness* in (14), the presuppositions of the responses in these sequences are at-issue and hence the responses should be given non-projective readings. But, intuitively, we interpret the responses as a whole as (inappropriately) answering the questions; that is, we seem to give the responses readings in which the typical presuppositions indeed project.

Examples such these demonstrate, unsurprisingly, that attempts to answer questions using presuppositions or conventional implicatures are typically infelicitous.[4] They appear, at first blush, to be counterexamples to our proposal because they allow projection (of the presuppositions), even though this content is at-issue relative to the QUD. Observe, though, that readings of the responses in (19) and (20) where the presuppositions do not project would fail to give even partial answers to the QUD. For example, on its non-projective reading, utterance of the negated version of A2 in (20) is equivalent to "Either it is not raining, or it is raining and Bob doesn't realize that it is". This fails to answer Q2, the question of what the weather is like, while also introducing a completely irrelevant proposition regarding Bob's knowledge state. A

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4 Common ground approaches do not give satisfying accounts of the answerhood constraint even for standard cases of presupposition since they must allow for *transparent accommodation*: a presuppositional expression is used although it is transparent to speaker and addressee that the relevant proposition was not part of the pre-utterance common ground. But if this is allowable, then why shouldn't this sort of accommodation be utilized to provide an answer to a question? To explain this within a common ground approach, some additional principle would need to be invoked. But this cannot be a principle along the lines of "Don't pretend that material is common ground when it obviously isn't.", because it would be violated by every case of transparent accommodation.

listener is thus faced with a choice between two infelicitous readings: one reading where negation has maximal scope (and the presupposition does not project), which produces irrelevance to the QUD; and another (where the presupposition projects) which provides an answer to the QUD, but requires a mismatch between projection and at-issueness. We conclude, then, that the strong infelicity of these sequences reflects the fact that neither the projective nor the non-projective interpretations are conversationally appropriate. The apparent preference for a projective reading may be due to the fact that this reading, although infelicitous, is still better than the alternative non-projective reading; or may be due to the fact that, given that both readings are bad, the default projective reading is prominent. (We return to the issue of defaults below.)

Interestingly, identical or at least very similar examples to the ones we have just looked at can be rendered quite acceptable given some additional background:

(21)   *Context: My daughter Chloe is writing invitations to her birthday party to kids in her class. I notice that all of the invitations are to girls.*
        Mom: Are there any boys in your class?
        Chloe: I don't like the boys in my class.

(22)   *Context: Quentin, Ann and Bob have just eaten dinner at a restaurant where the tip is usually incorporated into the bill. Bob handed Quentin what he said was his share of the bill, then left the table. Quentin is confused by the amount of money Bob has handed him:*
        Quentin: Are we supposed to leave a tip?
        Ann: Bob doesn't realize that the tip is included in the price.

These sequences appear to be counterexamples to the standard claim noted above, that the answer to a question may not felicitously be given by presuppositional content. They also appear to be counterexamples to our hypothesis, for the content which projects is at-issue relative to the question asked.

But these sequences require a closer look. We need to consider why added contextual information makes the sequences felicitous, when, absent that information, they seemed extremely odd. It appears that the effect of the added information is to allow us to make inferences about the broader conversational goals of the questioner (as perceived by the responder), and thus to identify implicit questions under discussion. Consider first example (21). In responding to the question, Chloe not only answers the direct question actually asked, but also an implicit question along the lines of "Why aren't you inviting any boys to your party?". The asserted content of her response contains an answer to that question, while the existence implication is backgrounded (but can also be construed as at-issue, as we discuss below.) What renders this sequence felicitous is precisely that it is possible to reconstruct this higher question which is answered by the non-projective part of the response.

Sequence (22) is similar: Ann construes Quentin's question as aimed at answering a larger question, namely, "Why did Bob give me this amount of money?".

Again, on a non-projecting reading, the responses in both cases would be irrelevant to the discourse topic. In order to find a felicitous interpretation for the response, it is necessary to construct the higher question relative to which the typically projective material is not-at-issue. What differentiates between the contextualized examples and the non-contextualized ones is simply the availability of information which allows for the construction of this implicit question. Once the implicit question is identified, the projective reading becomes consistent with our hypothesis.

If our hypothesis is correct, we would expect to find *some* question/answer sequences where the at-issueness status of content affects projection. Here are two:

(23) Q3: Does France have a king?
      A3: Well, the king of France didn't attend the opening of Parliament.

(24) Q4: Is Harry dating Sally?
      A4: Bill doesn't know that he is.

Let's work through what is going on with these sequences. A's answer in (23) receives an interpretation in which the existence implication of the definite does not project over negation, an interpretation paraphrasable as "There was no king of France attending the opening of Parliament". Making sense of this response requires accommodating an assumption that if there were a king of France, he would attend the opening of Parliament. Given this assumption, the response can be read as providing evidence that there may well not be a king of France. The felicity of the response improves with a special intonation contour (c.f. the Uncertainty Contour of Ward & Hirschberg 1985). We take the intonation and the discourse particle *well* to signal a less-than-maximally coherent discourse move (see Schiffrin 1987 for *well*).

The existence implication of the definite is here clearly at-issue by our current definition; and it does not project, as predicted by our hypothesis (12a). Unlike examples (19) and (20), the non-projecting reading is relevant to the QUD (given accommodation of the necessary assumption) and hence felicitous. Hence, in this example, we can finally see the effect we wanted to demonstrate: projection is suppressed where the relevant content is at-issue — but only where the resulting non-projecting interpretation is itself relevant to the QUD.

Example (24) has a similar structure. The response A4 requires intonation marking uncertainty. Given this intonation, it receives a non-projecting reading "It is not the case that Bill knows that Harry is dating Sally". Making sense of the sequence again requires the accommodation of a particular assumption, in this case the assumption that if Harry were dating Sally, Bill would know about it. Given this assumption, the non-projecting reading of A4 is conversationally felicitous.

6 Back to the definition of at-issueness

So far, we have worked with a rather simple definition of at-issueness, and a simple characterization of the relationship between at-issueness and projection. In this section, we discuss some complications and open questions.

The first issue in need of discussion is the role of convention. At-issueness, as we have defined it in (14), is determined solely by conversational structure. Whether or not a particular (propositional) implication of an utterance is at-issue depends only on what the current QUD is. If the implication (or its negation) is a potential answer to the QUD, the proposition is at-issue; otherwise, it is not.

But this runs counter to intuitions and observations that linguistic form is, at the very least, a strong indicator of projective status — hence the widely accepted view that presuppositions are conventional parts of lexical content. Now, it is also the case that linguistic form is a strong indicator of at-issueness status. The use of a definite, for example, is a good indicator that the question of existence of the relevant entity is not under discussion. As we have seen, we can force the existential implication of a definite to be at-issue, but this is not the norm. It is precisely such observations which led us to our hypothesis connecting projection to at-issueness in the first place.

There is thus a natural way to connect at-issueness to conventional marking. We posit that at least some constructions or lexical items conventionally mark their content as not-at-issue. The infelicity of examples like (19) and (20) can then be explained in terms of a mismatch between conventional marking and actual at-issueness status: the material marked as not-at-issue is what carries the answer to the question (hence is in fact at-issue); while the unmarked material which should be the candidate for at-issue content is not relevant to the QUD.

We remain agnostic as to which expressions conventionally mark at-issue status. In some cases where content introduced by an expression is typically not-at-issue, an account in terms of general pragmatic principles may be available. We note also that expressions which mark not-at-issueness apparently do so defeasibly. For example, if definites are treated as indicators of the not-at-issue status of an existence implication, it must be allowed that some uses are not so understood, given that definites can sometimes be used felicitously to introduce at-issue content. Allowing that at-issueness status is sometimes linguistically marked does not change the predictions of our account as currently framed. Our hypothesis claims that material projects if and only if it is *actually* not-at-issue. Since (by assumption) conventional marking at most indicates a default expectation of not-at-issue status, such marking is of very limited significance in the version of our theory considered so far.

This takes us to the second issue in need of discussion. Sometimes, more than one proposition conveyed by an utterance turns out to be at-issue, according to our current definition; and sometimes, these additional at-issue propositions are

projective. Consider the following case, a slight modification of example (19) above:

(25) Q: Why aren't you inviting any boys from your class to the party?
A: I don't like the boys in my class.

As discussed above, the definite in A's response gives rise to the implication that there are boys in her class. But this proposition is at-issue relative to the QUD since the question of whether or not there are boys in the class has an answer (namely the negative) which would answer the QUD. We easily recognize that this is *not* intended as (part of) the answer in part because of the form used. In light of these observations, we propose a more complex (and admittedly less clear-cut) characterization of at-issueness that takes into account the intention of the speaker.

(26) **Revised definition of at-issueness**

a. A proposition p is at-issue iff the speaker intends to address the QUD via *?p*.

b. An intention to address the QUD via *?p* is **felicitous** only if:

i. *?p* is relevant to the QUD, and

ii. the speaker can reasonably expect the addressee to recognize this intention.

On this definition, speaker intention determines at-issueness. But speaker intention is constrained by relevance to the QUD, and by the requirement that the intention be identifiable by the addressee. This is how linguistic marking of at-issueness status comes to affect projection: if some proposition is linguistically marked as not-at-issue, then, as long as the resulting interpretation is felicitous in other respects, the addressee will take it that the speaker does not intend to address the QUD via that proposition. This allows us to deal with cases like (25): As the existence implication is indicated to be not-at-issue, the addressee can safely treat it as such, and hence as projective, taking the remaining content as the target of negation.

This approach also helps with cases of apparently at-issue NRRCs:

(27) Q:Who's coming to the dinner tonight?

A:Well, I haven't talked to Charles, who probably won't be able to come, but I did talk to Sally, who is coming.

Here, the (partial) answer to the overt question is contained in the NRRCs, but these nonetheless project. (For further discussion and data, see Potts to appear.) The following example, offered by Chris Barker (p.c.) involves an epithet:

(28) Q:What do you think of Bill?

A:I've never met the son-of-a-bitch.

In example (27), we seem to find the at-issue content in the projecting NRRC, while the main clause content is apparently irrelevant. However, the utterance is obviously an appropriate response to the question. We suggest that this is again a case where an implicit question must be reconstructed.

Rather than directly answering the overt question, A instead answers the question of who she has talked to about the dinner, but includes answers to the overt question in the NRRCs. As a discourse strategy, this is reasonable since ultimately it provides more relevant information than a direct answer would have given. What makes this strategy easily retrievable is the fact that the content of NRRCs is by default not-at-issue. Something similar can be said about Barker's example (28). Here it seems that, superficially at least, A is refusing to answer the question explicitly posed. Instead, A gives a negative answer to the unasked question of whether A has met Bill, thus challenging Q's presupposition that A is in a position to offer an opinion about Bill. Since A's negative attitude to Bill is not relevant to this question, it survives as an utterance implication.

The characterization of at-issueness in terms of speaker intention gives us leeway to resolve some difficulties that arise with the previous characterization in (14). However, it makes some simple cases more difficult. Consider our treatment of (23): We argued there that the existence implication of the definite was at-issue, by virtue of the fact that it constitutes an answer to the QUD. According to the revised definition, this implication is at-issue iff the speaker intends to address the QUD via the question of whether there is a king of France. But it is more intuitive here to say that the speaker addresses the QUD via the question of whether the king of France was at the opening of Parliament. It thus appears that in this case, the simpler notion of at-issueness serves us better. We leave this as a topic for further investigation.

7 Conclusion

The proposal we have presented here would benefit from both development, and further empirical work. For example, although the Guaraní data in section 1 provides suggestive evidence for the cross-linguistic relevance of the issues we have discussed, it remains open to what extent projective meaning is a locus of cross-linguistic variation.[5] However, there are three central planks to the theory we are constructing for which we hope to have made a good case.

First, projection is a unified phenomenon, and therefore cannot be given an account relying on specific properties of particular types of meanings (such as

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5 Another empirical issue relates to experimental results of Jayez (2009), a response to an earlier version of our proposal. For reasons of space, we cannot discuss those results here.

presupposition or conventional implicature).

Second, the common property of projective meanings can be characterized in terms of some notion of at-issueness utilizing the concept of relevance to a QUD. Projection itself is intimately related to the structuring of information in discourse. It is a consequence of the fact that in the totality of information conveyed by an utterance, some is central to the speaker's conversational goals, and some is peripheral. The peripheral projects.

And finally, projection is not a matter of elements of content "escaping" the scope of an operator, but rather of elements being "ignored" by operators. Speakers use operators to target content which is central to their conversational goals.

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Mandy Simons
Baker Hall 135, Carnegie Mellon University
Pittsburgh, PA 15213-3890
simons@andrew.cmu.edu

David Beaver
Calhoun Hall 414, 1 University Station B5100
Austin, TX 78712-0198 USA
dib@mail.utexas.edu

Judith Tonhauser
222 Oxley Hall, 1712 Neil Ave
Columbus, OH 43210-1298
judith@ling.osu.edu

Craige Roberts
222 Oxley Hall, 1712 Neil Ave
Columbus, OH 43210-1298
croberts@ling.osu.edu