Conversational backoff

Kyle Rawlins (Johns Hopkins University)
rawlins@cogsci.jhu.edu
SALT 20, UBC/SFU
Apr 29, 2010

0 INTRODUCTION

- Some truisms: to model the flow of discourse, you need: (cf. Veltman 1996)

Component:	Examples:
• Representation of discourse participants' information states and/or joint information states.	Stalnaker's 1978 common ground/context set, Thomason's 2000 inter-agent modal frames, Gunlogson's 2001 commitment sets, etc.
• Set of operations that update one or more of these representations.	Intersection of a context set with a proposition (Stalnaker), removal of a proposition from a knowledge state via "downdate", Groenendijk's 1999 partitioning update, etc.
• Theory of the mapping between linguistic/communicative moves, and update operations.	Assertive speech act ⤳ intersective update (Stalnaker), Question act ⤳ partitioning operation (Groenendijk 1999), presupposition failure ⤳ accommodation, Asher and Lascarides's 2003 SDRT system, etc.

- Today's phenomena: *conversational backoff.*

  (1) A: Is Alfonso going to the party?
       B: Yes, he is.
       A: What if Joanna is there? ⇒ Will he go if Joanna is there? (*backoff reading*)
                                     ⇒ (What will happen if Joanna is there?)

       A′: What about Joanna? ⇒ Will he go if Joanna is there? (*backoff reading*)
                                ⇒ (What will happen if Joanna is there?)
                                ⇒ (Is Joanna going to the party?)
                                ⇒ (...)

- backoff readings: challenge B's attempt at an answer, but only for special case where Joanna is there.
  - Net effect: discourse participants *back off* of the exhaustivity of B's answer.
  - General phenomenon (proposal): resolution of vagueness about context – public backing off of particular tacit assumptions of how to circumscribe (i.e. domain restrict) the context.
  - Analysis following Lewis 1979.

> Central questions:
> 1. What kind of information state representations do we need to model conversational backoff?
> 2. What kind of update operation(s) do we need?
> 3. What are the linguistic cues of conversational backoff, and how are they causally related to the backoff update?

- Claim 1: to model conversational backoff, we need to model:
  - (i) individual information states distinctly from joint information states (Hamblin 1971; Thomason 2000; Gunlogson 2001; Farkas and Bruce 2010; Thomason et al. 2006 a.o.), and
  - (ii) vagueness of the information states (Lewis 1979; Beaver 2001; Barker 2002).
- Claim 2: Conversational backoff involves a defective joint context:
  - Participants discover that they disagree about domain, but not about content, of context. (Different ways of precisifying information states.)
  - Resolution involves backing off to larger domain restriction, and re-asking question.
- Claim 3: Conversational backoff is not cued by any particular lexical item (in English), but a certain class of phenomena lend themselves especially well to it – conditional questions and related constructions.

1 EMPIRICAL BASIS

Backoff examples

- Backoff "triggers" – various types of conditional-ish questions:

  (2) A: Is Alfonso going to the party?
       B: Yes, he is.
       A: What if Joanna is there?   ("what if" questions)
  (3) A: What about Joanna?   ("what about" questions)
  (4) A: Even if Joanna is there?   ("even if" questions)
  (5) A: Will he go if Joanna is there?   (full conditional questions)

- The direct approach – mention overlooked possibility (Lewis 1979 example 6):

  (6) Lewis' scenario: "Suppose I am talking with some elected official about the ways he might deal with an embarrassment. So far, we have been ignoring those possibilities that would be political suicide for him."
       O: You see, I must either destroy the evidence or else claim that I did it to stop Communism. What else can I do?
       L: There is one other possibility – you can put the public interest first for once!

- Less direct approach – raise the salience of some fact that might have been overlooked.
- Possibility modals (first example is another of Lewis')

  (7) C = commonsense epistemologist, S = skeptic
       C: I *know* the cat is in the carton – there he is before my eyes – I just *can't* be wrong about that!
       S: You might be the victim of a deceiving demon.
  (8) A: Is Alfonso going to the party?
       B: Yes, he is.
       A: Joanna might be there.

- Less direct – pointed questions, simply mention potentially relevant facts.

  (9) A: Will Joanna be there?
  (10) A: He looked a little sick earlier today...

- **Generalization**: backoff responses leave main claim untouched, just address its generality. ("does your claim hold if you consider this possibility?")

- Licensing condition (obvious, but worth pointing out):
  - Backoff not licensed if possibility explicitly raised in prior discourse.

  (11) A: Is Alfonso going to the party?

  B: Yes, he is, even though Joanna might be there.

  A: What if Joanna is there? (only *what-would-happen* reading)

  A′: # Even if Joanna is there?

- Backoff responses address only *publicly omitted assumptions*.

Corrective/clarifying utterances in general

- Backoff responses are not exactly *corrections* (van Leusen 1994; Asher and Gillies 2003; Asher and Lascarides 2003; Maier and van der Sandt 2003; van Leusen 2004; Spenader and Maier 2009)

  (12) A: Alfonso is driving to the party.

  B: No, he's WALKING to the party.

- Corrections can always be marked with "no" (Asher and Gillies 2003; van Leusen 2004; Kramer and Rawlins 2010):

  (13) B: Alfonso is going to the party.

  A: # No, Joanna might be there.

- van Leusen 2004 defining property: corrections are incompatible with corrected utterance. Backoff responses are not.

- However, a variant of Lewis' example:

  (14) O: You see, I must either destroy the evidence or else claim that I did it to stop Communism.

  L: ? No, you can put the public interest first for once!

- Conclusion: direct backoff responses may be corrections in the van Leusen/etc. sense, but indirect backoff responses are not.
  - They are corrective in some sense, but not corrections.
  - Desideratum: relation between corrections and backoff responses.

- Backoff responses are not exactly *clarification requests* (Ginzburg 1998; Purver 2004; Ginzburg to appear)

  (15) (Ginzburg (to appear) ex. 17)

  A: Did Billie show up at all?

  B: Billie?

  A: Billie Whitechapel.

- Clarifying in some sense: force clarification of interlocutor's assumptions.

- But, don't obviously map on to cases studied by Ginzburg – do not ask to clarify either the form, or content of previous utterance.

- Somewhat similar to clarification requests like:

  (16) B′: Why do you ask?

- Desideratum: relation between clarification requests and backoff responses.

Generalizations:

- Backoff responses (like corrections) call into question some aspect of interlocutor's claim.
  - But don't seem to call into question the *content* of the claim per se – only how generally it applies.

- Backoff responses (like clarification requests) don't put the discourse in a "crisis" state – not a public disagreement.
  - But don't address the form or content of the prior utterance.

2 SKETCH OF ANALYSIS

Central motivation

- Capture limited scope of backoff responses – why do they leave some version of the claim intact?

- Focus on "what if" examples for the moment.

'What if' questions

- Rawlins 2010 analysis: "what if" questions are conditional questions (CQs), with question-part anaphoric to a salient QUD.

  (17) Conditional question update (Isaacs and Rawlins 2008; see also Velissaratou 2000):
  $$c + \text{"if } \phi, \psi?\text{"} = (c + \text{ASSUME } \phi) + ?\psi$$

  (18) What-if update (Rawlins 2010):
  $$c + \text{"what if } \phi\text{"} = (c + \text{ASSUME } \phi) + ?\text{QUD}_c$$

- ASSUME operator is externally dynamic...
  - Introduces temporary assumption into context; following answer interpreted in scope of temporary assumption.

- Conversational backoff reading in *Q-A-What if* sequence: QUD_c is the initial question.
  - ∴ Equivalent update to e.g. "If Joanna goes to the party will Alfonso go?"

What happens in conversational backoff

- The "what if" dialogue:
  1. A asks a question. ("Is Alfonso coming to the party?")
  2. B proposes a complete answer. ("Yes.")
     - Because answer is complete, context would become 'uninquisitive'.
  3. A asks a question that would be trivial if B's answer holds generally. ("What if Joanna is there?")
  4. B infers that A doesn't intend the question to be trivial (neo-Quality inference).
     - B further infers that A believes there is a mismatch between their views of the context.

	A's private information state	B's private information state
Worlds where Joanna is there (W_J)	present	not present
Worlds where Joanna is not there ($W_{\neg J}$)	present	present

Table 1: B's inference about A's view of the context

5. CONVERSATIONAL BACKOFF ADJUSTMENT: To resolve the mismatch, both speakers take the domain restriction on the context to be the larger one – includes W_J.
    – B's response is accepted into the new context – but with domain restriction from old one. (Consequence: response acts only as a partial answer, therefore context is still inquisitive.)
6. Update with "what if" or conditional question proceeds.
7. (Typically) B proceeds to finish resolving question.

- Net result of conversational backoff on public shared information state:
    1. For $W_{\neg J}$: worlds where Alfonso does not go removed (partial answer update).
    2. For W_J: question asked about whether Alfonso will go (CQ update).

- While question is still trivial relative to $W_{\neg I}$ after partial-answer update, not trivial relative to $W_I \cup W_{\neg I}$.

- "Defect" in common ground revealed: B was assuming a way of making the context precise where Isabella isn't there. A does not make this assumption. (Idea due to Lewis 1979)

- Interesting point: B "has the last word" (Lewis) – lacks any way to disagree with the triggered backoff update (e.g. corrective response to "what if" question)...

    (19) **Lewis' expansion principle** (my name)
    "For some reason, I know not what, the boundary [of the context] readily shifts outward if what is said requires it, but does not so readily shift inward if what is said requires that."

3 FORMALIZATION

- Key intuition (Lewis 1979 pp. 354–5, my emphasis):

    (20) "Suppose I am talking with some elected official about the ways he might deal with an embarrassment. So far, we have been ignoring those possibilities that would be political suicide for him. He says: 'You see, I must either destroy the evidence or else claim that I did it to stop Communism. What else can I do?' I rudely reply: 'There is one other possibility – you can put the public interest first for once!' *That would be false if the boundary between relevant and ignored possibilities remained stationary. But it is not false in its context, for hitherto ignored possibilities come into consideration and make it true.* And the boundary, once shifted outward, stays shifted. If he protests 'I can't do that', he is mistaken."

- Vagueness of context – boundaries of context are radically underspecified in many ways.
    – At any stage in the conversation, speakers ignoring possibilities that they judge unlikely, remote, or that they have forgotten about.
    – Conversational backoff is a process that applies when speakers realize that they may have mismatching assumptions about how to make the context precise.
    – In particular, one speaker may have been ignoring some possibilities that aren't absolutely ruled out.
    – Shift context "outward" to include ignored possibilities.

- Ingredients of a formal account?
    – (i) Theory of context that takes into account multiple speakers perspectives.
    – (ii) Theory of context that breaks out accepting into a distinct move.
    – (iii) Theory of vagueness of context.
    – (iv) Theory of issues in context (to explain/understand why conditional questions can force backoff)

3.1 Context: basics

- I will adopt Gunlogson; Gunlogson's 2001; 2008 notion of commitment sets.
    – (An integration of Hamblin's 1971 discourse commitment slates, and Stalnaker's 1978 context sets).

    (21) **Personal ground**
    $g_X \underset{\text{def}}{=} \{p_{\langle st \rangle} \mid X \text{ has publicly committed to } p\}$

    (22) **Commitment set**
    $cs_X \underset{\text{def}}{=} \{w \mid w \in \bigcap g_X\}$

    (23) **Contexts v.1**
    A context C involving participants X, Y is an n-tuple $\langle cs_X, cs_Y, ... \rangle$.

- Notate references to parts of a context with superscripts, e.g. cs_X^C.

- Acceptance/confirming moves.
    – Regular assertion moves don't take immediate effect – interlocutor must tacitly or actively accept them.
    – Farkas and Bruce 2010: privileged slot ("the Table") in context for recent moves (generalization of QUD); accepting an assertion moves it out of the table and into the speaker's commitment set.
    – Differ from F&B in having content of table be semantic, not syntactic, representation. (Also, would want stacks here, but I will not need them.)

- (Note, I will shift back and forth between set-talk and function-talk as convenient.)

    (24) **Table**
    A table T is a pair $\langle A, Q \rangle$ where A is either an object of type $\langle st \rangle$, potentially null ($\emptyset$), and Q is either an object of type $\langle \langle st \rangle t \rangle$, also potentially $\emptyset$.

    (25) **Contexts v.2**
    A context C involving participants X, Y is an n-tuple $\langle T, cs_X, cs_Y, ... \rangle$, where T is a table.

    (26) **Assertive update**
    Where α is a sentence radical, $C + [\text{ASSERT } \alpha] \underset{\text{def}}{=} \langle \langle [\![\alpha]\!], Q_T^C \rangle, cs_X^C, cs_Y^C, ... \rangle$

    (27) **Acceptance move v.1** (made by Y)
    $C + \text{ACCEPT}(B) \underset{\text{def}}{=} \langle \langle \emptyset, Q_T^C \rangle, (cs_X^C \cap A_T^C), cs_Y^C, ... \rangle$
    Defined only if $A_T^C \neq \emptyset$.

    (28) **Questioning update**
    Where α is a sentence radical, $C + [\text{QUESTION } \alpha] \underset{\text{def}}{=} \langle \langle A_T^C, [\![\alpha]\!] \rangle, cs_X^C, cs_Y^C, ... \rangle$

- E.g. A making an assertion or question puts it on a table. X accepting it moves it into Y's commitment set.
    – Linguistic properties of an accepting move? F&B: "One can nod, say uh huh, sure, right, you bet, yup, etc."
    – Can also do nothing – accept by default.
    – I assume that assertion radicals will be of type $\langle st \rangle$, and question radicals of type $\langle \langle st \rangle t \rangle$ (following Hamblin 1973; Karttunen 1977, etc).

3.2 Conditional questions

- CQs involve an "if"-clause restricting domain of question operator.
  - Isaacs & Rawlins 2008: "if"-clause does this by introducing a temporary assumption into context. $c + \text{"if } \phi, \psi?\text{"} = (c + \text{ASSUME } \phi) + ?\psi$
- How to represent temporary assumptions?
  - Kaufmann 2000; Isaacs 2007; Isaacs and Rawlins 2008: stack of temporarily restricted context sets.
  - ⇒ Isaacs and Rawlins 2008: use temporary assumptions to restrict view of context.

(29) **Contexts v.3**
A context C involving participants X, Y is an n-tuple $\langle T, a, cs_X, cs_Y, ... \rangle$, where T is a table, and $a \in \mathscr{P}(\mathscr{W})$.

(30) The G-context g^C of a context C is:
$$\{\langle w_1, w_2 \rangle \mid w_1, w_2 \in (cs_X^C \cap cs_Y^C \cap a) \text{ and } \forall p \in Q_T^C : w_1 \in p \leftrightarrow w_2 \in p\}$$

- Notes:
  - Reconstruct the contexts of Groenendijk 1999. Updating context with question/assertion produces same result on G-context as updating in that system (as long as question radicals always denote partitions of the domain).
  - Definition of G-context guarantees relation is reflexive, symmetric.
  - if Q_t^C is a partition, g^C will be an equivalence relation. Let us assume, for simplicity, that this is always so. (If not, can have overlapping alternatives a la Velissaratou 2000; Groenendijk and Roelofsen 2009)
  - if Q_t^C is $\emptyset$, second conjunct will be trivially true and all worlds will be connected – context uninquisitive.
- Consequence: can define some standard notions:

(31) **Inquisitiveness**
   a. A G-context g is inquisitive iff $\exists w_1, w_2$ s.t. $\langle w_1, w_1 \rangle \in g \wedge \langle w_2, w_2 \rangle \in g \wedge \langle w_1, w_2 \rangle \notin g$.
   b. A context C is inquisitive iff g^C is inquisitive.

(32) A question move in context C resulting in C' is **trivial** iff $g^C = g^{C'}$.

(33) An assertion move α is **completely resolving** in a context C if, for some X, $g^{C+\alpha+\text{ACCEPT}(X)}$ is uninquisitive. (I will say call α a **complete answer** in that context.)

- Temporary assumptions:

(34) **Assuming**
$C + \text{ASSUME } \phi \underset{\text{def}}{=} \langle\langle A_T^C, Q_T^C \rangle, a^C \cap [\![\phi]\!], cs_X^C, cs_Y^C, ...\rangle$

(35) **Popping**
$C + \text{POP} \underset{\text{def}}{=} \langle\langle A_T^C, Q_T^C \rangle, \mathscr{W}, cs_X^C, cs_Y^C, ...\rangle$
Undefined if C is inquisitive.

(36) **Domain-limited update**
$x \vdash_a p \underset{\text{def}}{=} (x \cap \bar{a}) \cup (x \cap a \cap p)$
(cf. Kaufmann 2000)
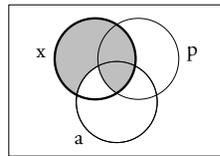
- Domain-limited update: learn about the truth or falsity of p only relative to domain restriction a.
  - Kaufmann's paraphrase for similar operator: learn in a context x that context a supports p.

(37) **Acceptance move v.2** (made by Y)
$C + \text{ACCEPT}(Y) \underset{\text{def}}{=} \langle\langle\emptyset, Q_T^C\rangle, a^C, (cs_X^C \vdash_{a^C} A_T^C), cs_Y^C, ...\rangle$
Defined only if $cs_X^C \cap a^C \cap A_T^C \neq \emptyset$.

- Can now handle the complex conditional question update.
  - I assume that $[\![\textbf{A. goes to the party?}]\!] = \{\lambda w . \text{A. goes to the party}, \lambda w . \text{A. doesn't go}\}$

(38) C + "If Joanna goes to the party, will Alfonso go?" = $(C + \text{ASSUME } [\![\textbf{J. goes to the party}]\!]) + \text{QUESTION } [\![\textbf{A. goes to the party?}]\!]$

- Result: C' with question on the table, and temporary assumption that Joanna goes to the party.
  - G-context is equivalence relation on worlds in intersection of commitment sets and temporary assumption. Worlds connected just in case they resolve $[\![\textbf{A. goes to the party?}]\!]$ the same way.
  - Subsequent answer would be accepted relative to temporary assumption as well – resolve question only for worlds in this domain.
  - (Note: $g^{C'}$ is the top element of the context stack in Isaacs and Rawlins 2008; this system derives much of our earlier analysis of CQs, though without the ability to pop intermediate temporary assumptions.)

3.3 Contextual vagueness and conversational backoff

- How to represent vagueness? Borrow another tool from Gunlogson – reduction set.

(39) Let R be an accessibility relation between contexts C, C' such that $\langle C, C'\rangle \in R$ iff
   (i) $cs_X^{C'} \in \mathscr{P}(cs_X^C)$
   and (ii) $cs_Y^{C'} \in \mathscr{P}(cs_Y^C)$
   and (iii) C' is not empty.
   and (iv) $T^C = T^{C'} \wedge a^C = a^{C'}$

(40) $\mathscr{R}(C) \underset{\text{def}}{=} \{C' \mid \langle C, C'\rangle \in R\}$

- Gunlogson (minus (iv)) uses this to model ways in which the context might evolve – but we will put it to another purpose.
  - Ways in which the context might already be – assumptions a speaker would be willing to commit to at least temporarily if necessary.
- A pruning of a context C is some member of $\mathscr{R}(C)$.
  - Implementation of Lewis' idea: at any point in discourse, a speaker X is non-publicly assuming some pruning $Pr_X(C)$ of C, rather than C itself.
  - First-order defectiveness: $cs_A \cap cs_Y = \emptyset$
  - Second-order defectiveness: $(cs_X^{Pr_X(C)} \cap cs_Y^{Pr_X(C)}) \neq (cs_X^{Pr_Y(C)} \cap cs_Y^{Pr_Y(C)})$
- Since prunings are non-public, we never get direct access to them. But can reason about what they must be...

- A pruning-only mismatch: when prunings differ by some proposition p that is not decided by C. Species of second-order defectiveness.

(41) Unsettledness test: $\lozenge(c, p) = 1$ iff $c \cap p \neq \emptyset \wedge c \cap p \neq p$
i.e. true iff c does not settle whether p is true.

  – E.g. $\lozenge(cs_X^C \cap cs_Y^C, p)$, and $\exists Z : \lozenge(cs_X^{Pr_Z(C)} \cap cs_Y^{Pr_Z(C)}, p)$, but $\exists Z' : \neg \lozenge (cs_X^{Pr_{Z'}(C)} \cap cs_Y^{Pr_{Z'}(C)}, p)$

(42) **Conversational backoff adjustment**
If assertion radical p is on the Table in C due to a move by speaker X, and speakers discover a pruning-only mismatch on proposition q, then they can shift to a new context C':
$$C' = \langle\langle\emptyset, \emptyset\rangle, a^C, (cs_X^C \vdash_{\neg q} p), cs_Y^C\rangle$$
Furthermore, all speakers Z are now publicly committed to $\lozenge(cs_Z^{Pr_Z(C)}, q)$.

- Clear the table, and do a domain-limited update with p: move it into X's commitment set but only relative to the assumption that q is false.
  – May trigger belief revision on part of speakers who were assuming a pruning that entailed q!
  – Similar to accepting move: involves accepting an assertion radical on the table, but not relative to full public context.
  – However...not a move, per se. Repair mechanism to avoid trivial updates.

- Relation between implicit and explicit assumptions?
  – Not formally captured here, but could be.
  – Unclear if they have the same status – question for the future.

- A version of Lewis' expansion principle follows – on the assumption that no other repair mechanisms can handle triviality, Y is forced to accept backoff in order to make sense of X's question.

3.4 Examples

Question-answer discourse
- A basic case (works similarly to Farkas and Bruce's 2010 system):

(43) A: Is Alfonso going to the party?
     B: Yes, he is.
     A: Ok.

  1. $C' = C +$ "Is A. going to the party?":
     – Put the denotation of the polar question on the table in the question slot.
     – $g^{C'}$ is now inquisitive, with two cells in the partition.
  2. $C'' = C' +$ "Yes, he is [going to the party]":
     – Put $(\lambda w . A.$ goes to the party in $w)$ on the table in the assertion slot.
     – No effect on G-context: $g^{C''} = g^{C'}$.
  3. $C''' = C'' + \textsc{Accept}(A)$:
     – Move proposition from table into B's commitment set.
     – g^C is now uninquisitive – proposition fully resolves question.

Conditional question leading to backoff
- Full conditional question/what if discourse:

(44) A: Is Alfonso going to the party?
     B: Yes, he is.
     A: Will he go if Joanna is there?

- Divergence from above example starts at context C''.
- Two possibilities:
  – Case 1: A's CQ is preceded by covert \textsc{Accept}.
  – Case 2: A does not fully accept B's answer.
- In each case the CQ update will involve trivial questioning. Conversational backoff can save case 2.
- Case 1:
  – If accepted, the claim that Alfonso is going to the party is moved into B's commitment set.
  – Will consequently contribute to the domain restriction of the G-context, and affect inquisitivity of subsequent updates.
  – Conditional question involves assuming Joanna is at the party, and then re-asking question. But assumption only shrinks G-context further.
  – Re-asking is trivial, because question has already been resolved, even relative to temporary assumption.
  – Conversational backoff cannot apply – acceptance has cleared the assertion part of the table.
- Case 2:
  – CQ update will lead to trivial questioning.
  – Temporary assumption that J. is at party is not trivial, because context does not determine this.
  – But, partitioning induced of G-context is trivial, because it is identical to existing partition.
  – Conversational backoff can apply, in principle, because there is a proposition on the table.
  – Reasoning: A must not believe the question to be trivial. How could this be? A believes that A,B are assuming different prunings of the reduction set.
  – Minimal difference between prunings: proposition in antecedent of conditional.
- Only way for B to make sense of A's conditional question is to leave answer on table, apply conversational backoff repair, and then update with conditional question.
  – Repair: accept answer into B's commitment set, but only relative to domain imposed by minimal difference between prunings – worlds where Joanna is not at the party. (Note that repair also clears table completely.)
  – CQ then targets exactly the remaining part of context where question is not settled – question does not involve a trivial update.
- How is minimal difference between prunings calculated?
  – Strong possibility: make a temporary assumption. (I.e. could draw q directly from context structure).
  – Weak possibility: proposition becomes salient in some way. (Possibly support by neo-Gricean Relevance reasoning.) I.e triggering move most supply q pragmatically.

Repeated non-conditionalized question

- Goal: derive infelicity of following discourse:

  (45) A: Is Alfonso going to the party?
        B: Yes, he is.
        A: # Is Alfonso going to the party?

- I.e. explain why backoff cannot apply.
- Start with C'' above.
- Two possibilities for A's response:
  - Tacit ACCEPT move. Context rendered uninquisitive; A's new question is a trivial update because question already answered (G-context unchanged).
  - A refuses to accept B's answer. But question is still trivial update; new G-context same as old one because question is the same.
- Can a backoff repair save either of these possibilities?
  - Can't save acceptance possibility, no assertion radical on table.
  - Any proposition orthogonal to proposed answer would do, but..
    * No principled way to infer such a proposition from re-questioning move.
    * Without this, cannot apply backoff.
- Assume: no other repair strategy to save this discourse.
  - A could be outright disagreeing with B's answer. But the felicity conditions on normal questioning (don't ask a question if you already know the answer) rule out re-questioning in this case at least.[1]
- ∴ A's response is infelicitous.

3.5   Further backoff triggers

- Conditional questions & what-if questions: simplest case.
- Other triggers:
  - "What about" questions.
  - "Even if" questions.
  - Possibility modals.
  - Direct mentions of excluded possibility.

"What about" questions

- Not aware of prior analyses – tricky construction.[2]

---

[1]The natural place to look is exam questions, where this felicity constraint doesn't hold. As a matter of fact this re-questioning strategy does seem to be able to be used to reject an answer in this context, albeit in a fairly harsh way.

[2]One place where this construction has been often mentioned is as diagnostic in literature on "aboutness topics", e.g. German left-dislocation (Endriss and Hinterwimmer 2007)

(i) Maria, die   ist eine sehr begabte Saengerin.
     Maria, RP-FEM.NOM.SG is a   very talented singer.
     'Maria is a very talented singer.'

The diagnostic is that LD sentences are usable as an answer to question like "What about Maria?". (Also, command like "Tell me about Maria.") They are not usable e.g. in response to "who is a talented singer?" This provides at least a desiderata for the analysis of "what about", but as of yet I am unsure of how to integrate this kind of data with an analysis. Perhaps looking at backoff in German will provide the clue.

Rawlins – Conversational backoff

- Proposal: "What about α" asks whether a proposition constructed from α would contribute to answering a question already on the table.
  - "Constructed from α" – some species of pragmatic inference. (Very underspecified.)
  - Can model in present system by using proposition constructed as a temporary assumption, and seeing whether context remains inquisitive.
  - I.e. "What about α" functions much like a "what if" question – make a temporary assumption and then re-ask a salient QUD (possibly the question on Table).
  - Behavior w.r.t. conversational backoff the same.

Even if questions

- Proposal: "Even if α" asks whether the proposition on the table remains true if assumption α is made.[3]
  - This kind of update basically forces conversational backoff!
  - I.e. as long as both speakers were assuming α, answer could never be anything but 'yes'.

Possibility modals & mentioning relevant facts

(46) A: Is Alfonso going to the party?
      B: Yes, he is.
      A: Joanna might be there.

- Two possibilities:
  - Kaufmann 2000: possibility modals also trigger temporary assumptions. (Analysis of modal subordination.) Backoff uses this proposition directly.
  - Mentioning of this possibility triggers reasoning about why it would be relevant. In absence of overt acceptance, might challenge generality of response.
- Backoff strictly optional here, very hard (if even possible) to force it.

4   CONCLUSIONS

Summary

- Analysis of conversational backoff:
  - Resolution of vagueness about what propositions speakers are willing to commit to.
  - Repair mechanism – invoked when speakers realize mismatch in assumptions about what propositions are likely & relevant.
  - Only in response to an assertion (in the proposal stage).
  - Involves updating with proposed assertion but only in a limited way – relative to the more restrictive of the mismatched assumptions.
- Triggering mechanism:
  - Certain kinds of updates that can lead to triviality trigger a backoff repair. (Requirement: clear resolution of what mismatch involves.)
  - Certain kinds of reasoning about relevance can (more weakly) lead to backoff.
  - Meaning of conditional questions suited to this kind of repair mechanism, but does not encode it in any way!

---

[3]However, note that like "what about" questions, "even" questions can actually contain nearly any category.

Rawlins – Conversational backoff

- Is backoff a move or repair?
  - Much like acceptance move.
  - Like repair in having preconditions – a defective context.
  - Is there really a principled difference between the two?

The larger picture

- Relation to denials/corrections:
  - Not a denial – accepts interlocutor's claim, but only in a limited way. Monotonic w.r.t. public context.
  - However, involves rejecting tacit assumption about domain of context.
  - Less confrontational approach to disagreement than correction.
- Relation to clarification requests:
  - Not a metalinguistic move.
  - Fundamentally similar to clarification requests in that it results in making more precise a speaker's communicative intentions and assumptions.
- Is backoff a species of accommodation (as Lewis proposed)?
  - Not accommodation of linguistic presupposition.
  - Falls into the category broadly construed – accommodation of speaker presupposition. 'Enlightened' accommodation in the sense of Thomason et al. 2006.
  - Thomason et al. 2006; Simons 2006; Roberts et al. 2009: accommodation involves public recognition of private commitments.
  - Similar to Bonomi's 2006 "discommodation" – reaction to some information A judges to be presupposed by B, but not previously revealed. (However, no suspension of joint information state needed.)
- Final remark: we have much to learn about the kinds of negotiations that can take place between interlocutors, and their linguistic signaling!

Bibliography

Asher, Nicholas, and Anthony Gillies. 2003. Common ground, corrections, and coordination. *Argumentation* 17:481–512.

Asher, Nicholas, and Alex Lascarides. 2003. *Logics of conversation*. Cambridge University Press.

Barker, Chris. 2002. The dynamics of vagueness. *Linguistics and Philosophy* 25:1–36.

Beaver, David. 2001. *Presupposition and assertion in dynamic semantics*. CSLI Publications and FoLLI.

Bonomi, Andrea. 2006. Truth and reference in context. *Journal of Semantics* 23:107–134.

Endriss, Cornelia, and Stefan Hinterwimmer. 2007. Direct and indirect aboutness topics. In *Interdisciplinary studies on information structure 6*, ed. C. Fery, G. Fanselow, and M. Krifka, 83–96. Universitätsverlag Potsdam.

Farkas, Donka, and Kim Bruce. 2010. On reacting to assertions and polar questions. *Journal of Semantics* 27:81–118.

Ginzburg, Jonathan. 1998. Clarifying utterances. In *Proceedings of the 2nd workshop on the formal semantics and pragmatics of dialogue*. Twente.

Ginzburg, Jonathan. to appear. *The interactive stance: meaning for conversation*. CSLI.

Groenendijk, Jeroen. 1999. The logic of interrogation. In *Proceedings of SALT IX*, ed. T. Matthews and D. L. Strolovitch. Ithaca, NY: CLC Publications.

Groenendijk, Jeroen, and Floris Roelofsen. 2009. Inquisitive semantics and pragmatics. Paper presented at Stanford workshop on Language, Communication, and Rational Agency.

Gunlogson, Christine. 2001. True to form: Rising and falling declaratives as questions in english. Ph.D. dissertation, UC Santa Cruz.

Gunlogson, Christine. 2008. A question of commitment. *Belgian Journal of Linguistics* 22:101–136.

Hamblin, C. L. 1971. Mathematical models of dialogue. *Theoria* 37:130–155.

Hamblin, C. L. 1973. Questions in montague english. *Foundations of Language* 10:41–53.

Isaacs, James. 2007. Supposition in discourse. Ph.D. dissertation, UC Santa Cruz.

Isaacs, James, and Kyle Rawlins. 2008. Conditional questions. *Journal of Semantics* 25:269–319.

Karttunen, Lauri. 1977. Syntax and semantics of questions. *Linguistics and Philosophy* 1:3–44.

Kaufmann, Stefan. 2000. Dynamic context management. In *Formalizing the dynamics of information*, ed. Martina Faller, Stefan Kaufmann, and Marc Pauly. Stanford, CA: CSLI.

Kramer, Ruth, and Kyle Rawlins. 2010. Polarity particles and ellipsis: a (somewhat) cross-linguistic perspective. Paper presented at UCSC workshop on polarity particles.

van Leusen, Noor. 1994. The interpretation of corrections. Technical Report LP-1994-21, ILLC, Universitat van Amsterdam.

van Leusen, Noor. 2004. Incompatibility in context: a diagnosis of correction. *Journal of Semantics* 21:415–441.

Lewis, David. 1979. Scorekeeping in a language game. *Journal of Philosophical Logic* 8:339–359.

Maier, Emar, and Rob van der Sandt. 2003. Denial and correction in layered DRT. In *Proceedings of DiaBruck'03*.

Purver, Matthew. 2004. The theory and use of clarification requests in dialogue. Ph.D. dissertation, King's college, University of London.

Rawlins, Kyle. 2010. What if? Talk at WCCFL 28.

Roberts, Craige, Mandy Simons, David Beaver, and Judith Tonhauser. 2009. Presupposition, conventional implicature, and beyond: a unified account of projection. In *Proceedings of new directions in the theory of presupposition*, ed. Nathan Klinedinst and Daniel Rothschild. ESSLLI.

Simons, Mandy. 2006. Presupposition without common ground. manuscript, CMU.

Spenader, Jennifer, and Emar Maier. 2009. Contrast as denial in multi-dimensional semantics. *Journal of Pragmatics* 41:1707–1726.

Stalnaker, Robert. 1978. Assertion. In *Pragmatics*, ed. Peter Cole, 315–332. New York: Academic Press.

Thomason, Richmond. 2000. Modeling the beliefs of other agents. In *Logic-based artificial intelligence*, ed. Jack Minker. Kluwer.

Thomason, Richmond, Matthew Stone, and David DeVault. 2006. Enlightened update: a computational architecture for presupposition and other pragmatic phenomena. Paper presented at OSU workshop on presupposition accommodation.

Velissaratou, Sophia. 2000. Conditional questions and which-interrogatives. Master of Logic Thesis, University of Amsterdam. ILLC Publications.

Veltman, Frank. 1996. Defaults in update semantics. *Journal of Philosophical Logic* 25:221–261.