Asking questions / SALT 34 @ Rochester

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Asking

What is it to ask a question?

(1) *Questioning as requesting* / **The canonical theory**

To ask a question is to request information.

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> *"The speech act of questioning involves a request for information. A felicitous use of a question requires that the speaker not be privy to the information and that he/she must believe that the addressee might be."*
> *(Dayal 2016 p. 1)*

Questions vs. interrogatives

Another canonical assumption:

A (single) root clause, canonically interrogative, is used to ask a question.

(More careful: Interrogative clause vs. interrogative denotation vs. question act, following Dayal 2016 p. 5.)

(2) A: What is his name?

(cf. Dayal 2016 ex. 1: “What is your name?”)

B: Bingley.

A: Is he married or single?

B: Oh, single, my dear, to be sure! A single man of large fortune; four or five thousand a year.

(Pride & Prejudice / Jane Austen[1])

[1] Henceforth *P&P*. Text is quoted from the Project Gutenberg edition: `https://www.gutenberg.org/files/1342/1342-h/1342-h.htm`

A different view

(1) Questioning as requesting / The canonical theory
To ask a question is to request information.

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To ask a question is to open coordination on the public resolution of an issue.

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- Development of Question Under Discussion-based approaches (Roberts 1996/2012, Ginzburg (1996, 2012) a.m.o.)

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Classic roots: Stalnaker 1978 etc., Lewis 1969, 1979.

- Development of Question Under Discussion-based approaches (Roberts 1996/2012, Ginzburg (1996, 2012) a.m.o.)
- More closely: development of Table-based approaches (Farkas & Bruce 2010; Farkas & Roelofsen 2012, 2017; Malamud & Stephenson 2015; Bledin & Rawlins 2020 etc.)

Requests for information

I will not deny that there are utterances of interrogatives that are requests for information. There is something to the idea!

Further main question:

- When does a question act as a request for information, and why?

Plan

1. Asking

1.1 Requests for information

1.2 QUD theory and discourse topics

1.3 Non-canonical puzzles

1.4 Recap: where we stand

2. Coordination

2.1 Coordinating

3. Felicity conditions for discourse

4. Recap and conclusions

Frege on requests

The canonical view is often associated with:

> *"An interrogative sentence and an indicative one contain the same thought; but the indicative contains something else as well, namely, the assertion. The interrogative sentence contains something more too, namely a request.", as translated in Frege 1956 p. 294.*

Searle:

> *"There are two types of questions, (a) real questions, and (b) exam questions. In real questions, S wants to know (find out) the answer; in exam questions S wants to know if H knows." (Searle, 1969)*

Caveat that you can already see: presentations of the view are fully aware of counterexamples!

Hamblin:

"If pressed to define a question, I should do so by saying that it is a sentence which requires an answer; or (I should hastily add) a refusal to answer, or the raising of a point of order." (Hamblin 1958 p. 161)

And more...

Much classic linguistic work on speech acts, representative quote:

> *"Questions are special cases of requests, special in that what is requested is that the hearer provide the speaker with certain information. [...]" (Bach & Harnish 1979 p. 48)*

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Some classical distinctions that I will largely set aside:

- Aqvist (1965): askee should make it so the asker knows the answer
- vs. Searle (1969); Hintikka (1976): askee should provide an answer.
- Authors also differ in what a *request* is, e.g. is it a kind of imperative, a primitive speech act, something else?

Current discussions, examples

"The speech act of questioning involves a request for information. A felicitous use of a question requires that the speaker not be privy to the information and that he/she must believe that the addressee might be." (Dayal 2016 p. 1)

"With an information question, a speaker requests an assertion of a particular type from the other speaker. This can be modeled by a meta speech act that does not change the root of the commitment space, but restricts the possible continuations – to those in which the other speaker makes an assertion of an appropriate type." (Krifka, 2015)

Recap

Questions as Requests is appealing, straightforward, and widespread.

Questions Under Discussion (QUD) theory

QUD view (Roberts / Ginzburg very broadly):

1. Asking a question puts the question on the QUD stack.
2. Moves in discourse must be relevant (i.e. partially answering) to the QUD stack.
3. Questions on the QUD stack go away when resolved.

QUD theories (sometimes implicitly) take a coordination view of discourse in general, but, arguably, do not dispense with a canonical theory.

QUD theory

> *"Addition to the QUD stack entails a strong commitment to answering the question. If a question is accepted by the interlocutors, they are committed to answering it; unless it is determined to be unanswerable, it will remain on the stack until answered. " Roberts 1996 p. 17*

- Most Roberts-inspired approaches therefore may inherit a version of the canonical view. E.g. Büring (2003); Farkas & Bruce (2010); Biezma & Rawlins (2012a), ...
- It should be noted that Ginzburg (an early locus for QUD theory, in Ginzburg 1994, 1996), has a much more complicated view; see e.g. Ginzburg 2012.

QUD theory

Possible third view from QUD theory

Asking a question is setting a discourse topic?

- Requesting is emergent: discourse constraints apply pressure to resolve the current discourse topic.
- This is a starting point for my proposal here.

Tables

Farkas & Bruce 2010 et seq: model involves a shared contextual resource that determines the current goal of conversation, generalizing QUD.

> *"When the Table is not empty, the immediate goal of the conversation is to empty it, that is, to settle the issue at hand."*

(4) **The canonical view** (caricature)
To ask a question is to request information, in the form of answers.

a. *Ignorance*: the asker doesn't know the answer
b. *Viability*: the askee might be able to answer
c. *Obligation*: the askee should attempt to provide an answer (immediately) following the question

(Lots of variants of this, tweaks one might make...)

Puzzles for the canonical view

Exam questions

(5) **Exam questions** ✖Ignorance ✓Viability ✓Obligation

a. *(Scenario: teacher talking to class)*
What is the main point of this paper?

b. *(Scenario: quizmaster at bar trivia)*
What year did the battle of Waterloo happen?

c. *(Border guard to traveller, while looking at screen with travel records)*
When did you last enter the US?

Rhetorical questions

(6) **Rhetorical questions** ✖Ignorance ✓Viability ✖Obligation

a. I don't think we should have Onavi on our short list. (After all,) what does he know about semantics? (Caponigro & Sprouse, 2007)

b. Is this fun or is it fun? (Biezma & Rawlins, 2017b)

c. Is the pope catholic? (Dayal 2016 ex. 1)

d. Who are you to tell me what to do? (Dayal 2016 ex. 1)

See also Han (2002); Rohde (2006), recent work by Farkas, ...

Enhanced ignorance questions

(7) **Ignorance questions** ✓Ignorance ✖Viability ? Obligation
Scenario (Rawlins 2008 ex. 606-8): a reality show is nearing the end of its season. 5 candidates are left, and the competition is fierce. On the task for this episode, all of the competitors do extremely well. It is hard to tell who the judges will pick as the person to send home.

a. Who on earth will they pick?

(8) Ippolito 2024 ex. 21 (see also: den Dikken & Giannakidou 2002; Eckardt & Yu 2020; Martin 2021)

A: Someone will marry Oscar.
B: Who the hell will/would ever do that? You are fool if you think that! Nobody is ever going to marry Oscar.

Conjectural questions

See also Farkas 2022 on non-intrusive questions.

(9) **Conjectural/self-directed questions**

✓Ignorance ✖Viability ✖Obligation

a. *(Scenario: speaker alone in their house just having finished a tv show.)*
What to watch next?

b. What should I watch next, I wonder? (Eckardt 2020)

c. Wo wohl der Schlüssel ist? ('Where might the key be, I wonder?'; Eckardt 2020 ex. 2)

d. Also, collaborative discourse.
Who could the murderer be?

Obligation dispelling responses

The puzzle: obligation can be (easily) defeated in many ways. This is descriptively not a puzzle, but is typically ignored for modeling purposes.

- Hamblin (1971); Asher & Lascarides (2013): treat ignorance responses as a special move type.
- Krifka (2015): require retraction of question to interpret ignorance responses. (Though cf. Krifka 2022)

(10) A: Is it raining?
B: I don't know.

(11) Asher 2014 ex. 5

N: Excuse me. Could you tell me the time please?
B: Fuck you!

Biased questions

(12) **Biased questions** ? Ignorance ✓Viability ✓Obligation

a. Didn't Rosa Montero write poetry? (after a Romero & Han 2004 example)
b. Did Rosa Montero really write poetry?
c. Did Rosa Montero really NOT write poetry?
d. Rosa Montero wrote poetry, right? (tag question)
e. Who could sleep a wink with that racket? (den Dikken & Giannakidou 2002 ex. 3)
f. "Good Lord! Sir William, how can you tell such a story? Do not you know that Mr. Collins wants to marry Lizzy?" (*P&P*)

Vast literature here. See also: tag questions, rising declaratives, ...

Q-Q sequences

(13) **Question-question sequences**

✓Ignorance ✓Viability ✖Obligation

a. What are you cooking for tomorrow's party? Are you cooking pasta? (Biezma & Rawlins 2012b ex. 62)
b. Where is the reception happening? Is it at John's house or what? (Biezma & Rawlins 2017a ex. 5)
c. "Well, Jane, who is it from? What is it about? What does he say?" (*P&P*)
d. "And what sort of young lady is she? Is she handsome?" (*P&P*)

Q-Q sequences

(14) a. A: What is the paper about?
B: What do you think?
B′: Didn't you read it?
B′: Which paper? (*clarification request*: see e.g. Ginzburg 1998, 2012)

b. Vicki: When is, when is Easter? March, April?
(Ginzburg 2012 §4.5 ex. 66, from BNC)

Q-A sequences

(15) **Question-assertion sequences**

✓Ignorance ✓Viability ✖Obligation

a. “Has she been presented? I do not remember her name among the ladies at court.” (*P&P*)

b. “My dear Mr. Bennet,” replied his wife, “how can you be so tiresome? You must know that I am thinking of his marrying one of them.” (*P&P*)

c. “What advantage can it be to you to offend Mr. Darcy? You will never recommend yourself to his friend by so doing.” (*P&P*)

More context on X-A sequences

Data from INTERVIEW data set (Majumder et al., 2020); my work on this data set is joint with PhD student Karl Mulligan.

- NPR interviews – genre biases towards requests for information?
- 127535 unique questions (105103 from the host, 22432 from the guest).

More context on X-A sequences

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- NPR interviews – genre biases towards requests for information?
- 127535 unique questions (105103 from the host, 22432 from the guest).
- 44366 (42%!) participate in a same-speaker sequence. 19133 Q-Q, 25233 Q-A.

What sorts of things do we find in here?

INTERVIEW Q-Q sequences

Stacked requests:

(16) H: President Trump is, of course, a close ally to Netanyahu.
H: Is the president playing a role in the Israeli elections?
H: Is he trying to help Netanyahu win?

INTERVIEW Q-Q sequences

Subquestions:

(16) G: Most leeches in this group and other groups have three jaws, but the number of teeth in those jaws is more variable.
H: So why three jaws?
H: What do they need them for?

INTERVIEW Q-Q sequences

Metaquestions:

(16) H: The president has at least appeared to be weighing the options.
H: What is he signaling?
H: Do we know?

INTERVIEW Q-A sequences

Conjectural + followup:

(17) G: As a former federal prosecutor, I actually have no idea how this would happen [...]
G: How did this happen?
G: It's worthy of an investigation.

INTERVIEW Q-A sequences

Rhetorical:

(17) G: And those states are home to high numbers of Trump's strongest supporter.
G: Who is that?
G: The white working-class voter.

INTERVIEW Q-A sequences

Self-addressed + answer:

(17) G: Well, I think he's going to come to the table.
G: Is it going to be substantive?
G: I don't think it's going to be substantive.

The state of the canonical theory

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To ask a question is to request information, in the form of answers.

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Violated in: exam questions, rhetorical questions, maybe biased questions, ...

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b. *Viability*: the askee might be able to answer
Violated in: ignorance questions, conjectural questions

c. *Obligation*: the asker should attempt to answer following the question
Violated in: rhetorical questions, conjectural questions, Q-X sequences, refusals to answer

The state of the canonical theory

Further puzzles for the canonical view:

- Response sequencing is much looser and more complex than you might expect.
  - A single request appears to be spread out over multiple utterances in many, many cases.
  - Lots of work explores complex response sequencing! E.g. Asher & Lascarides (1998); Ginzburg 2012; Commitment Spaces (Cohen & Krifka, 2014; Krifka, 2015, 2022), ...
  - How to integrate?

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2. Provide a canonical theory which *defeats canonical principles under certain circumstances*: following Dayal (2016); Farkas & Roelofsen (2017); Farkas (2022); Rudin (2022).
   "The conversational contribution of questions that are not requests for information are still calculated based on the semantics associated with canonical questions." (Dayal p. 5)

What to do? Some possible strategies:

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   "The conversational contribution of questions that are not requests for information are still calculated based on the semantics associated with canonical questions." (Dayal p. 5)
3. Give an alternative to the canonical theory that explains why under certain circumstances these principles might follow, and when they don't.

Coordination

Let’s revisit:

(3) *Questioning as Coordinating*
To ask a question is to open coordination on the public resolution of an issue.

What is coordination and how do you open it? What is an ‘issue’? What is ‘resolution’?

Coordinating actions

Do you drive in the left or the right lane? (Lewis 1969 p. 6)

	R	L
R	1,1	-1,-1
L	-1,-1	1,1

Two familiar notions of coordination

See also Murray & Starr (2021) for a recent overview and view of how coordination and force relate.

(19) **Action-oriented coordination**: actions are coordinated between agents if the interdependencies between those actions are managed by the agents in service of a common goal. (Schelling, 1960; Lewis, 1969; Malone & Crowston, 1994; Clark, 1996)

Two familiar notions of coordination

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(19) **Action-oriented coordination**: actions are coordinated between agents if the interdependencies between those actions are managed by the agents in service of a common goal. (Schelling, 1960; Lewis, 1969; Malone & Crowston, 1994; Clark, 1996)

(20) **Attitude-oriented coordination**: an attitude (e.g a belief) is coordinated between agents if the attitude 'agrees' for all of the agents, and it is commonly supposed by the agents that this is so. (after Thomason 1990; Stalnakerean. (Observation: Stalnaker very rarely talks in these terms himself...)

The classical view on coordination

"What is necessary is to coordinate predictions, to read the same message in the common situation, to identify the one course of action that their expectations of each other can converge on. They must 'mutually recognize' some unique signal that coordinates their expectations of each other." [...] "People can often concert their intentions or expectations with others if each knows that the other is trying to do the same." (Schelling 1960 p. 54, p. 57)

The classical view on coordination

> *"Coordination problems [..] are situations of interdependent decision by two or more agents in which coincidence of interest predominates and in which there are two or more proper coordination equilibria" (Lewis 1969 p. 24)*

(21) A **coordination equilibrium** is "a combination in which no one would have been any better off had *any one* agent acted otherwise, either himself or someone else."

(vs. (regular) equilibria: "a combination in which no one would have been better off had he acted alone.")

Coordination problems for polar questions?

Is it raining?

	Yes	No
Yes	1,1	-1,-1
No	-1,-1	1,1

Coordination problems for polar questions?

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- Simultaneous game ⇒ extensive-form game

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- Simultaneous game ⇒ extensive-form game
- Actions: Incorporate belief states, explicit moves

How to get to the extensive form?

Big picture idea

Agents track coordination goals across discourse, and may update them in a fine-grained way.

Coordination and the QUD

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- Ginzburg (2012) (see Ginzburg 1996): "The most important consequence of being [the maximal element q of the QUD graph] is that it circumscribes what can be said: it introduces an expectation for utterances that are *specific* to q, that is are either partial answers or sub-questions of q."

Coordination and the QUD

Sound familiar? Extension of QUD / Table approaches:

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- Ginzburg (2012) (see Ginzburg 1996): "The most important consequence of being [the maximal element q of the QUD graph] is that it circumscribes what can be said: it introduces an expectation for utterances that are *specific* to q, that is are either partial answers or sub-questions of q."
- Farkas & Bruce (2010): all moves in a discourse must address what is currently on the Table. "The Table records what is 'at issue' in the conversation. When the Table is not empty, the immediate goal of the conversation is to empty it, that is, to settle the issue at hand."

How to get to the extensive form?

(22) B: Assert(*It's raining*)

- Farkas & Bruce (2010) et seq: Decompose assertive updates into proposals + meta-moves (acceptance, rejection, etc). See also Krifka (2015) et seq.

How to get to the extensive form?

(22) B: Assert(*It's raining*)
A: Accept (may be tacit; 'ok' etc)

- Farkas & Bruce (2010) et seq: Decompose assertive updates into proposals + meta-moves (acceptance, rejection, etc). See also Krifka (2015) et seq.

How to get to the extensive form?

(22) A: Question(*Is it raining*)
B: Propose(*It's raining*)
A: Accept (may be tacit; 'ok' etc)

- Farkas & Bruce (2010) et seq: Decompose assertive updates into proposals + meta-moves (acceptance, rejection, etc). See also Krifka (2015) et seq.

How to get to the extensive form?

(22)

A:	Propose(*Is it raining?*)	
B:	Accept	(usually tacit)
B:	Propose(*It's raining*)	
A:	Accept	(may be tacit; 'ok' etc)

- Farkas & Bruce (2010) et seq: Decompose assertive updates into proposals + meta-moves (acceptance, rejection, etc). See also Krifka (2015) et seq.
- Biezma & Rawlins (2017b): Decompose question updates in the same way

Case study: response moves

Let's examine responses following the simple A question:

(23) A: Question(*Is it raining*)
B: Propose(*It's raining*)
A: Accept (may be tacit; 'ok' etc)

Example: Building up to coordination equilibria

- $\mathbb{W} = \{w_1, w_2\}$. Raining in w_1, sunny in w_2.
- A asks B, $[\![\textbf{Is it raining?}]\!] = \{\{w_1\}, \{w_2\}\}$.
- 3 (non-absurd) belief states for A or B: $\{w_1\}, \{w_2\}, \{w_1, w_2\}$

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Given some straightforward constraints on updates, for each belief state, there is a B-A response sequence to the question (call it the coordinated response) that is a coordination equilibrium.

A bit more on interrogative denotations

Interrogative sentences denote ‘issues’ that are ‘inquisitive’ (tbd).

(I won’t be saying much about the semantics here, but this builds directly and indirectly on a large body of literature that tackles the compositional problem, e.g. Hamblin (1958, 1973); Karttunen (1977); Groenendijk & Stokhof (1984, 1997); von Stechow (1991); Ginzburg (1995a,b); Higginbotham (1996); Roberts (1996); Lahiri (2002); Kratzer & Shimoyama (2002) among many others.

A bit more on interrogative denotations

How to model resolution? I will use inquisitive semantics: (key references: Ciardelli et al. 2013, 2019; Ciardelli 2017)

(24)
a. An *alternative set* is a non-empty set of type $\{\{s\}\}$ (e.g. a set of sets of worlds; Hamblin 1973 and much subsequent work)
b. An *issue* is a downward-closed alternative set
c. $Q^{\downarrow}$ is the non-empty *downward closure* of Q: $\{p \subseteq q \mid q \in Q \wedge p \neq \emptyset\}$
d. An issue Q is *resolved* by a proposition $p_{\{s\}}$ iff $p \in Q$

Informative and inquisitive issues

- An issue is informative iff it doesn't cover $\mathbb{W}$.

The *informative content* of Q; output type: $\{s\}$:

(25) $\quad \inf(Q) \underset{\text{def}}{=} \bigcup Q$

- An issue is inquisitive iff its upward closure is non-singleton.

(26) $\quad Q^{\uparrow}$ selects the maximal sets from Q:
$\{q \in Q \mid \neg\exists q' \in Q : q \subset q'\}$

(finite only...)

Case study: response moves

- Some possible response moves:

(27)
a. $[\![\textbf{yes}]\!]$: $\{\{w_1\}\}$, $[\![\textbf{no}]\!]$: $\{\{w_2\}\}$
b. $[\![\textbf{idk}]\!]$: $\{\{w_1, w_2\}\}$ (not a resolving response)
c. ok: anaphoric acceptance move (Farkas & Bruce, 2010).
d. disagree: anaphoric reverse move for informative content (Farkas & Bruce, 2010).

Some basic conversational constraints (informal)

Informal versions:

(28) If A utters ϕ relative to QUD Q:

a. **Quality**: the informative content of ϕ should be entailed by A's belief state.

b. (**Consistency**: the output state should be consistent with each agent's belief state.)

c. **Resolvedness**: If possible, the result of updating with ϕ should 'move towards' resolving Q

Crucial: the if possible in Resolvedness will do a fair amount of work here.

Some basic conversational constraints

(29) If A utters ϕ relative to QUD Q in context c:

a. **Quality-1**: $\text{Dox}_A \cap \text{Inf}(\phi) \neq \emptyset$
Quality-2: $\text{Dox}_A \subseteq \text{Inf}(\phi)$

b. **Consistency**: $(cs_c + \phi) \cap \text{Dox}_A \neq \emptyset$

c. **Resolvedness**: $(\text{Inf}(\phi) \not\in Q) \rightarrow (Q \cap \{\text{Dox}_A\}^{\downarrow} = Q)$
'If ϕ is not resolving, A's doxastic state doesn't resolve Q.'

(This is far from the last word on Resolvedness, but it's enough for the example here.)

Side note: implementation

I won't dwell on this in today's talk, but an implementation of these constraints can be found at:

`https://github.com/rawlins/asking-questions/blob/main/salt-2024/asking-questions.ipynb`

Coordinated responses

(We are momentarily ignoring *why* A asked the question.)

A: *Is it raining?*

	Dox_A	Dox_B	coordinated response	
1.				
2.				
3.				
4.				
5.				
6.				
7.	A$\{w_1, w_2\}$	B$\{w_1\}$	B: yes. A: ok.	Request for info
8.	A$\{w_1, w_2\}$	B$\{w_2\}$	B: no. A: ok.	Request for info
9.				

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1.				
2.				
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5.				
6.				
7.	A$\{w_1, w_2\}$	B$\{w_1\}$	B: yes. A: ok.	Request for info
8.	A$\{w_1, w_2\}$	B$\{w_2\}$	B: no. A: ok.	Request for info
9.	A$\{w_1, w_2\}$	B$\{w_1, w_2\}$	B: idk. A: ok.	RfI, conjectural

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A: *Is it raining?*

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1.	A$\{w_1\}$	B$\{w_1\}$	B: yes. A: ok.	rhetorical, exam
2.	A$\{w_1\}$	B$\{w_2\}$	B: no. A: disagree.	exam
3.	A$\{w_1\}$	B$\{w_1, w_2\}$	B: idk. A: yes.	exam
4.	A$\{w_2\}$	B$\{w_1\}$	B: yes. A: disagree.	exam
5.	A$\{w_2\}$	B$\{w_2\}$	B: no. A: ok.	rhetorical, exam
6.	A$\{w_2\}$	B$\{w_1, w_2\}$	B: idk. A: no.	exam
7.	A$\{w_1, w_2\}$	B$\{w_1\}$	B: yes. A: ok.	Request for info
8.	A$\{w_1, w_2\}$	B$\{w_2\}$	B: no. A: ok.	Request for info
9.	A$\{w_1, w_2\}$	B$\{w_1, w_2\}$	B: idk. A: ok.	RfI, conjectural

Coordinated responses

(We are momentarily ignoring *why* A asked the question.)

A: *Is it raining?*

	Dox_A	Dox_B	coordinated response	
1.	$\text{A}\{w_1\}$	$\text{B}\{w_1\}$	B: yes. A: ok.	rhetorical, exam
2.	$\text{A}\{w_1\}$	$\text{B}\{w_2\}$	B: no. A: disagree.	exam
3.	$\text{A}\{w_1\}$	$\text{B}\{w_1, w_2\}$	B: idk. A: yes.	exam
4.	$\text{A}\{w_2\}$	$\text{B}\{w_1\}$	B: yes. A: disagree.	exam
5.	$\text{A}\{w_2\}$	$\text{B}\{w_2\}$	B: no. A: ok.	rhetorical, exam
6.	$\text{A}\{w_2\}$	$\text{B}\{w_1, w_2\}$	B: idk. A: no.	exam
7.	$\mathbf{A}\{w_1, w_2\}$	$\text{B}\{w_1\}$	B: yes. A: ok.	**Request for info**
8.	$\mathbf{A}\{w_1, w_2\}$	$\text{B}\{w_2\}$	B: no. A: ok.	**Request for info**
9.	$\mathbf{A}\{w_1, w_2\}$	$\text{B}\{w_1, w_2\}$	B: idk. A: ok.	**RfI**, conjectural

Types emerge by conditioning on possible doxastic states.

Coordinated responses

(We are momentarily ignoring *why* A asked the question.)

A: *Is it raining?*

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More generally: condition on various assumptions about agents.

Why do exam questions exist?

Very simple answer: condition on assumption that the asker is prevented by a norm from obeying Resolvedness.

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- Further effects. If the responder thinks the asker may reveal the answer, they have incentive to guess.
- (This can be seen in the implemented version, which uses a restricted set of A response moves, leading to guessing being equilibria.)

Why do rhetorical questions exist?

Very simple answer: as long as issue is not resolved publicly, nothing prevents coordination that has a short resolution.

- There is no constraint against issues other agents are known to be able to resolve.

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Very simple answer: as long as issue is not resolved publicly, nothing prevents coordination that has a short resolution.

- There is no constraint against issues other agents are known to be able to resolve.
- Further: fixing the relevant doxastic state, there's a unique coordinated response.
- An agent who accepts a proposed issue to resolve can simply do so immediately, even tacitly.

Why conjectural questions? Why ignorance questions?

Very simple answer: Nothing requires that a goal be immediately achievable to coordinate on it.

Why biased questions? Why same-speaker sequences?

Example after Ladd 1981; Frana & Rawlins 2019:

(30) Clara has just arrived to visit her friend Luigi in Napoli.

L: You must be starving, shall we we get something to eat?

C: Wasn't there a good pizzeria around here? Michele's or something like that?

- Agents should contribute to the goals they introduce, if possible.
- Crucial: Resolvedness applies to sequences rather than utterances!

Decision problems and larger goals

Observation

Questioning sometimes appears to be in service of a choice of actions. (van Rooy, 2003; Bledin & Rawlins, 2019)

(31) (Bledin & Rawlins 2019 p. ex. 103)

A: Who are we going to invite to speak at the next colloquium?

B: What if we invite Professor Plum?

Claim: coordinating on the resolution of a question can be part of a larger coordination goal, in this case, the decision problem of who to invite.

Felicity conditions for discourse

What about felicity conditions?

(32) ~~The canonical theory~~

To ask a question is to request information, in the form of answers.

a. ~~*Ignorance*~~: the asker doesn't know the answer
b. ~~*Viability*~~: the askee might be able to answer
c. ~~*Obligation*~~: the asker should attempt to answer (immediately) following the question

What, if anything, goes in the place of these?

Felicity conditions on coordination?

(33) Coordination viability

Asking a question $Q_{\{\{S\}\}}$ is felicitous in c only if agents are not already publicly coordinated on a resolution of Q in c.

(34) Coordination obligation

Agents who agree to participate in coordination should contribute towards the coordination goal up to the limits of both encoding and their beliefs.

Ignorance?

More on ignorance. If it can be reasonably expected that A should know how to resolve Q, and doesn't, then either: A is ignorant, or there should be some contextually salient reason why A does not contribute whatever they can to the game.

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- neo-Gricean(-ish) reasoning: if an agent appears to be deviating from a coordination equilibrium during coordination setup, reason about why.

Ignorance?

More on ignorance. If it can be reasonably expected that A should know how to resolve *Q*, and doesn't, then either: A is ignorant, or there should be some contextually salient reason why A does not contribute whatever they can to the game.

- neo-Gricean(-ish) reasoning: if an agent appears to be deviating from a coordination equilibrium during coordination setup, reason about why.
- Unmarked questions simply present an issue with minimal further contribution to coordination. Bias towards ignorance for this case?

Viability?

Answer viability is not a principle of the system.

- However, cases that don't satisfy viability do coincide with coordination failures. An agent may have many practical reasons to avoid these cases!

Obligation

- We should not expect an asymmetric obligation principle at all.
- In fact: an asking agent should probably do what they can early on. Biased questions, Q-A sequences, etc.

Coordination and turn-taking

- A lot here rests on the dynamics of turn-taking, traditionally ignored within theoretical linguistics.
    - Speculative: There may be general principles that push towards a turn release following a question. if there is a turn release bias, this will interact with the calculation of ignorance.
- A lot here rests on 'encoding'. We know that natural languages productively allow encoding of bias. What follows from what?

Recap and conclusions

Recap

(1) ~~Questioning as requesting / The canonical theory~~
To ask a question is to request information.

(3) Questioning as Coordinating
To ask a question is to open coordination on the public resolution of an issue.

Recap

(1) ~~Questioning as requesting / The canonical theory~~
To ask a question is to request information.

(3) Questioning as Coordinating
To ask a question is to open coordination on the public resolution of an issue.

Requests for information emerge as a special case of coordination setup sequences.

What's really new?

To some degree, what I have done here is spelled out a particular view on what QUD/Table approaches mean when they identify resolving the QUD as a discourse goal.

1. Asking agent is also a participant in coordination.
2. Reasoning about how and why a speaker frames a coordination goal can lead to inferences about their doxastic state, and therefore, felicity conditions.
3. Requests for information can be reconstructed, but aren't a primary illocutionary effect.

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3. Requests for information can be reconstructed, but aren't a primary illocutionary effect.

How much of QUD/Table structure follows from coordination, rather than the other way around?

Thank you!

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