Disjoined questions as mention-some questions

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1 Introduction

A controversy in the study of co-ordination: can constituent questions be co-ordinated?[1]

- There is agreement that Qs can be conjoined — but, can Qs be *disjoined*?

(1) **A candidate for question disjunction**
What did Al make, or what did Bill make?

- Focus in this talk = matrix questions.

Theoretical controversy: certain theories of questions disallow disjunction; others allow disjunction. Approaches disallowing disjunction include:

- Partition theories (Groenendijk & Stokhof 1984): Q_1 *or* Q_2 does not partition the space of possible worlds into non-overlapping cells.

(2) **Disjunction in this framework**

$$\lambda w\,.\,\lambda w'\,.\quad \forall x\,[\text{make(Al, x, w)} \leftrightarrow \text{make(Al, x, w')}] \vee \forall y\,[\text{make(Bill, y, w)} \leftrightarrow \text{make(Bill, y, w')}]$$

(3) **Not a partition**
a. w_1: Al makes pasta, Bill makes salad.
b. w_2: Al makes pasta, Bill makes pizza.
c. w_3: Al makes salad, Bill makes pizza.
$\rightarrow$ w_1 in a cell with w_2, w_2 in a cell with w_3, w_1 not in a cell with w_3.

- Krifka (2001): Qs cannot be disjoined as speech acts, as disjunction of speech acts is generally unavailable (e.g. *#I hereby baptize you John, or I hereby baptize you Mary*).

[1] I thank Kai von Fintel, Danny Fox, Martin Hackl, Irene Heim, Sabine Iatridou, David Pesetsky, and audiences at MIT for helpful discussion. All inadequacies are my own. I receive partial financial support from the Social Sciences and Humanities Research Council of Canada.

Empirical controversy: candidate question disjunction data have dubious status.

- Szabolcsi (1997): "the *or* [that appears to disjoin questions] ... is an idiomatic device that allows one to cancel the first question and replace it with the second." (p. 325)

  (4) What did Al make? Or (rather), what did Bill make?

- Haida & Repp (2011): question disjunction is possible in embedded environments where polarity-sensitive items are licensed — but otherwise is impossible.

Plan for today:

1. Empirical: new data showing questions *can* be disjoined (also Ciardelli, Groenendijk, & Roelofsen 2015).
2. Analytical: disjoined questions "follow for free" from independently proposed syntactic and semantic mechanism for questions.

   ⇒ **Part 1:** Q_1 *or* Q_2 is interpreted as a *single* question in a Hamblin semantics. *Or* unions the Hamblin sets for Q_1 and Q_2, $Q_1 \cup Q_2$.

   ⇒ **Part 2:** In certain cases, Q_1 *or* Q_2 is interpreted as *mention-some*. This is predictable from the union analysis in Part 1, combined with extant theories of mention-some (Fox 2013).
3. Extending results: the pragmatics of mention-some questions explains further data and accounts for why disjoining questions is not fully productive.

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2 Empirical: questions can be disjoined

A prediction of Szabolcsi (1997): if *or* cancels the first question and replaces it with the second, the responder must answer the second question.

(5) **Cancellation schema: possible answers to Q_1 *or* Q_2:**

a. #A_1 (where A_1 is an answer to Q_1)

b. ✓A_2 (where A_2 is an answer to Q_2)

Alternative "choice" schema (Groenendijk & Stokhof 1989): the responder can answer either of the two disjoined questions.

(6) **Choice schema: possible answers to Q_1 *or* Q_2:**

a. ✓A_1

b. ✓A_2

- The choice schema is the hallmark of bona fide question disjunction — is it attested?

There are data that seem to follow the choice schema: e.g. from Ciardelli et al. (2015):

(7) Where might we rent a car, or who might have one we could borrow?

a. ✓We can rent a car at Avis.

b. ✓Bill might have one.

Further data: the choice schema is attested in a range of examples; data may be subdivided (at least pre-theoretically) into two classes based on their descriptive profile.

CLASS 1 — data where only one question has a true answer, and the questioner does not know which one. Some (likely) examples: (ex. (9)-(11) adapted from Google search)

(8) A: The department made a staffing change this weekend.
B: Really! Who got hired or who's leaving?

(9) *(Bob has landed in jail for committing one crime.)*
Who did he kill, or what other crime did he commit?

(10) *(Trying to get a product the interlocutor has received.)*
Who did you call, or what else did you do?

(11) *(The interlocutor has finally started feeling better in life.)*
Who did you meet or what did you read that helped you?

- The responder provides an answer to whichever question has a true answer.

CLASS 2 — data where both questions have a true answer. (ex. (14) from Google search)

(12) *(Need one identifier.)*
What's your name or what's your SSN?

(13) *(Filling out a form requiring info. about one biological parent.)*
Who's the mother or who's the father?

(14) *(Want to learn something about the other person.)*
What's your superpower or what's your spirit animal?

- The responder can choose to answer either question.

Questions *can* be disjoined. How do disjoined questions come about, and how do they relate to more familiar question types?

3 Analyzing Class 1

This section: Class 1 data "follow for free" from familiar syntactic and semantic mechanisms for questions — most critically, a Hamblin semantics.

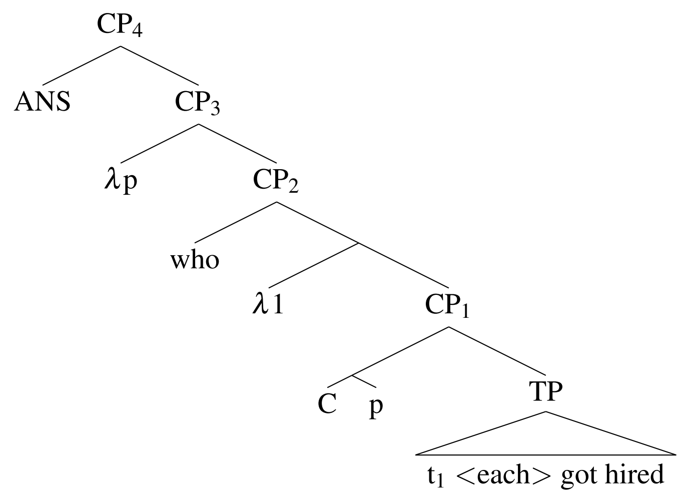
3.1 A familiar syntax and semantics for questions

Assumed internal structure and composition:

- Syntax adapted from Karttunen (1977), following Heim (2000), Fox (2013).
- Hamblin (1973) semantics, with ANS operator (Dayal 1996) introduced.

Illustrate with a simple question: [overleaf]

(15) **Structure for *Who got hired?***



- Composition yields a Hamblin denotation for CP_3:

(16) **Defining the interrogative complementizer**

$[\![C]\!] = \lambda p_{st} \,.\, \lambda q_{st} \,.\, p = q$

(17) **Defining *who***

$[\![who]\!] = \lambda f_{et} \,.\, \exists X\, [f(X)]$ (∃ *ranges over atoms and pluralities*)

(18) **Hamblin denotation at CP_3**

$[\![CP_3]\!] = \lambda p_{st} \,.\, \exists X\, [p = \lambda w \,.\, \forall x <_{AT} X\, [x \text{ got hired in } w]]$

- ANS presupposes that the Hamblin set contains a strongest true proposition, and returns that proposition:

(19) **Defining ANS (Dayal 1996)**

$[\![ANS]\!] = \lambda Q_{stt} \,.\, \lambda w : \exists p\, [w \in p \in Q \,\&\, \forall p' \in Q\, [w \in p' \rightarrow p \subseteq p']]$
$\quad .\, \iota p\, [w \in p \in Q \,\&\, \forall p' \in Q\, [w \in p' \rightarrow p \subseteq p']]$

(20) **Illustrative assumptions about w_0**

a. Bill got hired.
b. No one else got hired.

(21) **Result for CP_4**

$[\![ANS]\!](w_0)([\![CP_3]\!]) = \lambda w \,.\, \text{Bill got hired in } w$

- The structure in (15) contains scope sites for disjunction ...

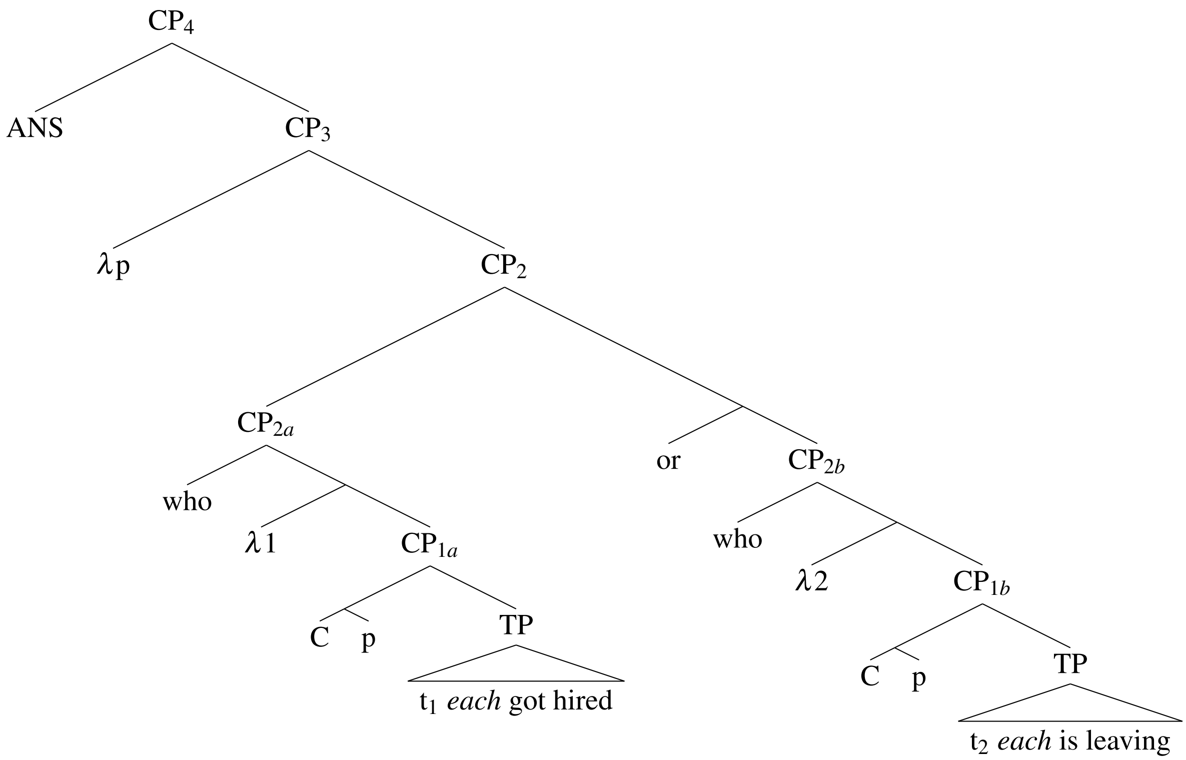
3.2 Class 1 disjoined questions follow

The assumed syntax/semantics provides all the ingredients to derive Class 1 data.

(22) **Illustrative test case**

A: The department made a staffing change this weekend.
B: Really! Who got hired or who's leaving?

- Disjunction scopes at least as high as CP_2 and below ANS:



- In effect, disjunction *unions* the Hamblin sets of the two questions.
(cf. Biezma & Rawlins 2012 on disjoined polar questions; more details in Section 7)

(23) **Prediction for CP_3**

$$[\![CP_3]\!] = \lambda p \,.\; \exists X\, [p = \lambda w \,.\, \forall x <_{AT} X\, [x \text{ got hired in } w]] \vee \exists Y\, [p = \lambda w \,.\, \forall y <_{AT} Y\, [y \text{ is leaving in } w]]$$

- Granting there was only one staffing change, the union contains a unique true proposition — the presupposition of ANS is met, and ANS returns that proposition.

How the choice intuition is captured: the true proposition ANS returns could originally come from the Hamblin set for either question.

- At w_1, it comes from the Hamblin set for Q_1.

(24) **Illustrative assumptions about w_1**

a. John got hired.
b. No one is leaving.

(25) **Result for CP_4**

$[\![ANS]\!](w_1)([\![CP_3]\!]) = \lambda w$. John got hired in w

- At w_2, it comes from the Hamblin set for Q_2.

(26) **Illustrative assumptions about w_2**

a. John is leaving.
b. No one got hired.

(27) **Result for CP_3**

$[\![ANS]\!](w_2)([\![CP_3]\!]) = \lambda w$. John is leaving in w

Key result: the choice intuition does not reflect a choice between questions.

- *Q_1 or Q_2* is a single question with its Hamblin denotation $Q_1 \cup Q_2$.
- With Class 1 examples, choice = variability in whether the true answer in $Q_1 \cup Q_2$ comes from Q_1 or Q_2.

4 Analyzing Class 2

This section: Class 2 disjoined questions are mention-some ('MS') questions.

- MS requires modification of the system presented so far, but once the necessary alternations are made, our Class 2 data again follow for free.

4.1 The system so far does not capture Class 2

Recall an illustrative test case:

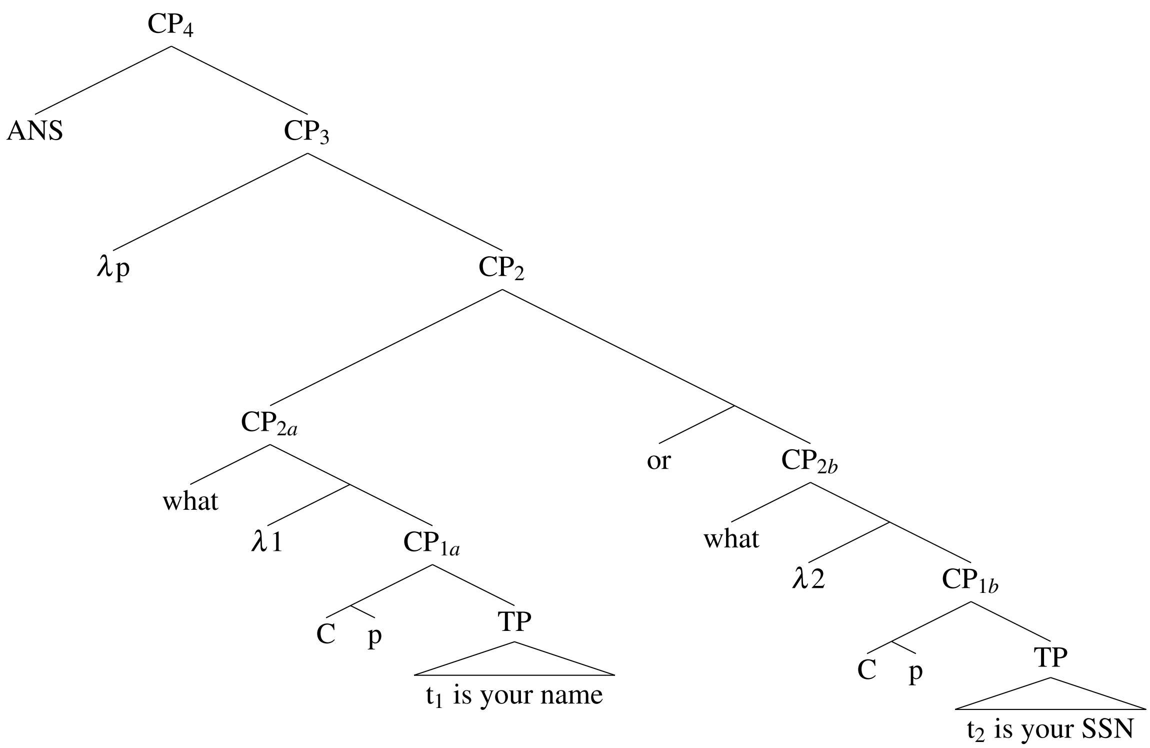
(28) What's your name or what's your SSN?

a. ✓My name is Aron.
b. ✓My SSN is 123-45-6789.

- Both questions have a true answer.
- The responder can provide the answer to either.

Problem if we apply the system:

- The LF for (28), with disjunction scoping at CP_2:



- As before, the effect of disjunction is to union the Hamblin sets of the two questions.

(29) **Prediction for CP_3**

$$[\![CP_3]\!] = \lambda p\,.\quad \exists x\,[p = \lambda w\,.\ x \text{ is your name in } w]$$
$$\vee\ \exists y\,[p = \lambda w\,.\ y \text{ is your SSN in } w]$$

- Assuming the interlocutor has both a name and an SSN, this union contains *two* logically independent true propositions — so, the presupposition of ANS fails.

(30) **Illustrative assumptions about w_0**

a. My name is Aron.
b. My SSN is 123-45-6789.

(31) **Result for CP_4**

$[\![ANS]\!](w_0)([\![CP_3]\!])$ ... *undefined!*

- Class 2 data must not involve ANS.
  - There is a type of simple Q which similarly cannot involve ANS ...

4.2 Parallel with mention-some

Consider an illustrative test case:

- The question in (32) has two readings:

(32) Who can chair the committee?

a. "Tell me all the people who can chair." *(mention-all; MA)*
b. "Tell me some person who can chair." *(mention-some; MS)*

MS has a descriptive profile resembling Class 2:

- The responder can choose between different ways of answering.

(33) Who can chair the committee? (MS)

a. ✓John can chair the committee.
b. ✓Bill can chair the committee.

MS also has a formal profile resembling Class 2:

- The system so far does not derive MS — it derives MA.

(34) **LF for (32)**

$[_{CP4}$ ANS $[_{CP3}$ λp [who λX [[C p] [[X ~~each~~] [can chair the committee]]]]]]

(35) **Hamblin denotation at CP_3**

$[\![CP_3]\!] = \lambda p \,.\, \exists X\, [p = \forall x <_{AT} X\, [\Diamond[\text{chair}(x, \text{committee})]]]$

$\approx$ {John can chair, Bill can chair, John and Bill each can chair}

(36) **Illustrative assumptions about w_0**

a. John can chair.
b. Bill can chair.

(37) **Result of applying ANS**

$[\![ANS]\!](w_0)([\![CP_3]\!])$

$= \lambda p \,.\, p = \forall x <_{AT} \text{John}\oplus\text{Bill}\, [\Diamond[\text{chair}(x, \text{committee})]]$

$\approx$ John and Bill each can chair

(38) **Predicts MA answering pattern**

A: Who can chair the committee?

a. B: ✓John and Bill each can.
b. B: #John can. c. B: #Bill can.

So: what is the mechanism for MS, and does it extend to Class 2?

- I present the analysis of MS in Fox (2013), which extends directly to Class 2.

4.3 Analyzing mention-some: Fox (2013)

Point of departure: not all questions allow both MA and MS.

- E.g. removing the existential modal from the earlier example bleeds MS:

(39) Who has chaired this committee?

a. "Tell me all the people who have chaired this committee." ✓*MA*
b. "Tell me some person who has chaired this committee." **MS*

Fox: MA or MS is predictable from the make-up of the Hamblin set.

MA: arises when the Hamblin set contains a unique strongest true proposition.

- The Hamblin set for (39) necessarily has this profile.

(40) **LF without ANS**

[λp [who λX [[C p] [[X ~~each~~] [has chaired the committee]]]]]

(41) **Hamblin denotation**

λp . $\exists$X [$\forall$x $>_{AT}$ X [chair(x,committee)]]

$\approx$ {John has chaired, Bill has chaired, John and Bill each have chaired, ...}

- The Hamblin set above for *Who can chair the committee?* necessarily does also.

(42) **LF without ANS**

[λp [who λX [[C p] [[X ~~each~~] [can chair the committee]]]]]]

(43) **Hamblin denotation**

λp . $\exists$X [p = $\forall$x $<_{AT}$ X [$\Diamond$[chair(x, committee)]]]

$\approx$ {John can chair, Bill can chair, John and Bill each can chair}

- Both these Hamblin sets are, in effect, closed under conjunction.

MS: arises when the Hamblin set contains multiple true propositions that are logically independent of one another.

- With the modal, another LF is possible: covert *each* can scope below the modal.

(44) **Alternative LF for *Who can chair the committe?***

[λp [where λX [[C p] [can [[X ~~each~~] chair the committee]]]]]

- The resultant Hamblin set is *not* closed under conjunction, and allows the MS profile.

(45) **Hamblin denotation**

λp . $\exists$X [p = $\Diamond$[$\forall$x $<_{AT}$ X [chair(x,committee)]]]

$\approx$ {John can chair, Bill can chair,
it's possible John and Bill both chair ...}

(46) **Illustrative assumptions about w_0**

a. The committee has one chair.
b. John can chair.
c. Bill can chair.

(47) **Two independent true propositions in Hamblin set at w_0**

a. $\Diamond$[chair(John, committee)]
b. $\Diamond$[chair(Bill, committee)]

Defining ANS: Fox re-formulates ANS to unify MA and MS.

- For exposition here, I will use Fox's "first stab" formulation:

(48) **Re-defined ANS**

$$[\![\text{ANS}]\!] = \lambda Q_{stt} \,.\, \lambda w : \exists p\, [w{\in}p{\in}Q \,\&\, \neg\exists p'\, [w{\in}p' \,\&\, p'{\subset}p]] \,.\, \underline{\lambda p \,.\, w{\in}p{\in}Q \,\&\, \neg\exists p'\, [w{\in}p' \,\&\, p'{\subset}p]}$$

- The presupposition of ANS is weakened from uniqueness to *existence*.
  - ANS presupposes that the Hamblin set (Q) contains *at least one* true proposition not entailed by any other true proposition in Q ("strongest true").

- ANS returns *the set of all these strongest true propositions*.

Unifying MA and MS: both MA and MS involve the same ANS.

- **MA:** ANS returns a singleton set.

(49) **MA LF for *Who can chair the committee?* with ANS**
[ANS [λp [who λX [[C p] [[X ~~each~~] [can chair the committee]]]]]]

(50) **Recall Hamblin denotation**
$\approx$ {John can chair, Bill can chair, John and Bill each can chair, ...}

(51) **Output of applying ANS**
$\approx$ {John and Bill each can chair}

- **MS:** ANS returns a set with higher cardinality.

(52) **MS LF for *Who can chair the committee?* with ANS**
[ANS [λp [where λX [[C p] [can [[X ~~each~~] chair the committee]]]]]]

(53) **Recall Hamblin denotation**
$\approx$ {John can chair, Bill can chair, it's possible John and Bill both chair ...}

(54) **Output of applying ANS**
$\approx$ {John can chair, Bill can chair}

- To resolve the question, the answerer must provide *some* proposition in the ANS-set.

Key feature: MS questions have the defining property that their Hamblin set contains multiple propositions that are strongest true.

Note: Fox's "first stab" ANS makes incorrect predictions with singular *which* questions.

- Singular *which* presupposes uniqueness. The system does not predict a uniqueness requirement; if uniqueness is not met, MS is predicted.

  (55) Which professor has chaired the committee?

- Fox modifies ANS further, but ANS as presented will be sufficient for exposition.

4.4 Class 2 disjoined questions are mention-some

With an analysis of MS in hand: the ingredients are in place to derive Class 2.

Class 2 disjoined Qs have the defining property of MS.

- Recall analysis of *What's your name or what's your SSN?* from above.

  (56) **Hamblin denotation**

  $\lambda p . \quad \exists x\, [p = \lambda w . \text{ x is your name in w}]$
  $\qquad \vee\, \exists y\, [p = \lambda w . \text{ y is your SSN in w}]$

  (57) **Two independent true propositions in Hamblin set**

  a. λw . my name is Aron in w
  b. λw . my SSN is 123-45-6789 in w

- Re-defined ANS applies unproblematically to yield a two-membered ANS-set.

  (58) **Output of applying ANS**

  $\approx \{\lambda w . \text{ my name is Aron in w}, \lambda w . \text{ my SSN is 123-45-6789 in w}\}$

- The answerer can provide either proposition — hence, the choice intuition.

Key result: again, the choice intuition does not reflect a choice between questions.

- With Class 2 examples, $Q_1 \cup Q_2$ contains (at least) two strongest true answers, and the responder has the choice to provide either of them (mention-some).

This result is a development of insights in previous work:

- Szabolcsi (1997): a single question containing a disjunction is interpreted as MS.

(59) a. Who did Fido or King bite?
b. "Tell me someone who is such that either Fido or King bit him."

- Groenendijk & Stokhof (1989): entertain an analysis for disjoined questions proper reminiscent of MS, after Bennett (1979) and Belnap (1982).

4.5 Class 1 disjoined questions fit into the new system without issue

Class 1 questions have the defining property of MA.

- Recall analysis of *Who got hired or who's leaving?* from above.

(60) **Hamblin denotation**

$$\lambda p \,.\, \exists X\, [p = \lambda w \,.\, \forall x \in X\, [x \text{ got hired in } w]] \\ \vee\, \exists Y\, [p = \lambda w \,.\, \forall y \in Y\, [y \text{ is leaving in } w]]$$

(61) **Assumptions about w_0**

a. John was hired.
b. No one was fired.

- The Hamblin set contains a unique strongest true element; ANS returns a singleton.

(62) **Output of applying ANS**

$$\approx \{\lambda w \,.\, \text{John was hired in } w\}$$

Key result: disjoined questions come in the same flavors as simple questions.

- Class 1 shares properties with MA; Class 2 shares properties with MS.

5 Pragmatics of Class 2

<u>This section</u>: MS questions are associated with a signature pragmatics. Class 2 data share this pragmatic signature, which helps explain:

1. Further data which at first appear not to fit in either Class 1 or Class 2.
2. Why felicitous disjoined questions are sometimes hard to find.

5.1 A further pragmatic parallel with mention-some

- Van Rooij (2003): speakers ask questions to resolve a "decision problem".

(63) **Pragmatic condition on mention-some questions**
For Q be interpreted as mention-some, the utility of Q under a mention-some reading must be equal to the utility of Q under a mention-all reading.

- Application to a simple mention-some question:

(64) Who can chair the committee?
  a. *Problem*: dilemma of who to install as chair.
  b. *Pragmatic condition*: one chair is all that's needed.

- All of our Class 2 data share this pragmatic property.

  – Ciardelli et al.'s (2015) example:

  (65) Where might we rent a car, or who might have one we could borrow?
    a. *Problem*: dilemma of where to find a car.
    b. *Pragmatic condition*: one place to find a car is all that's needed.

  – Generalizes even when the individual disjuncts are not mention-some:

  (66) What's your name or what's your SSN?
    a. *Problem*: dilemma of how to identify the interlocutor.
    b. *Pragmatic condition*: one identifier is as useful as two.

  (67) Who's the mother or who's the father?
    a. *Problem*: dilemma of how fill out a form requiring one bio. parent.
    b. *Pragmatic condition*: one parent is as useful as two.

5.2 The pragmatics help explain further data

A new example:

(68) Who can take care of the kids, or do you want to take them with us?

(69) **Result of unioning the Hamblin sets**
λp . $\exists x$ [p = λw . x can take care of the kids in w]
$\vee$ p = you want to take the kids with us in w

When both Qs have a true answer, (68) does not neatly pattern as Class 2:

- Suppose (68) has the theoretic profile of Class 2:

(70) **Illustrative assumptions about w_0**
a. John can take care of the kids.
b. I want to take them with us.

(71) **Result of applying ANS to (69) at w_0**
$\approx$ {λw . John can take care of the kids in w,
λw . I want to take the kids with us in w}

- The answering pattern is still more like Class 1:

(72) **Felicitous answering pattern**
a. #John can take care of the kids.
b. ✓ I want to take them with us.

  - There appears to be a unique felicitous answer.

- Does (68) belong to a new Class 3?

  - No! The ex. is predict as Class 2 once the pragmatics are factored in ...

A pragmatic solution:

- The questioner's decision problem: dilemma about what to do with the kids.
- (72-a) and (72-b) are both possible answers to (68) — and both equally well resolve the decision problem. But, they resolve it in different ways:
  - If (72-a) is the answer: the questioner will send the kids to John.
  - If (72-b) is the answer: the questioner will bring the kids.
- To bring about the result that they bring the kids, the responder must answer as (72-b).

5.3 Why disjoining questions isn't fully productive

- This talk has argued that disjoined questions are attested and analytically predicted.
  - Left to explain: why disjoined questions are not fully productive.
- The degraded examples considered in the literature are apparently of Class 2.

(73) a. What did Mary read or what did Judy read?
b. Who did you marry or where did you live?

- These examples do not easily meet the pragmatic condition on mention-some.
  - Ciardelli et al. suggest a pragmatic explanation, linked to van Rooij (2003):

    "It is difficult to see what kind of motivation (or what kind of decision problem, to follow van Rooij 2003) a speaker could have that would lead her to raise or even consider the issue expressed by [many disjoined questions]."

6 Conclusion

⇒ Like declarative sentences, questions can be disjoined. ⇐

Proposal:

- Disjoined questions are interpreted as a *single* question in a Hamblin semantics.
- Disjoined questions comes in the same flavors as simple questions — some are mention-some (Fox 2013).
- The choice intuition = a choice between *answers*, not between *questions*.

7 More to think about: polar questions

In addition to disjunction of *constituent* questions, there is a less controversial case of Q disjunction: disjunction of *polar* questions.

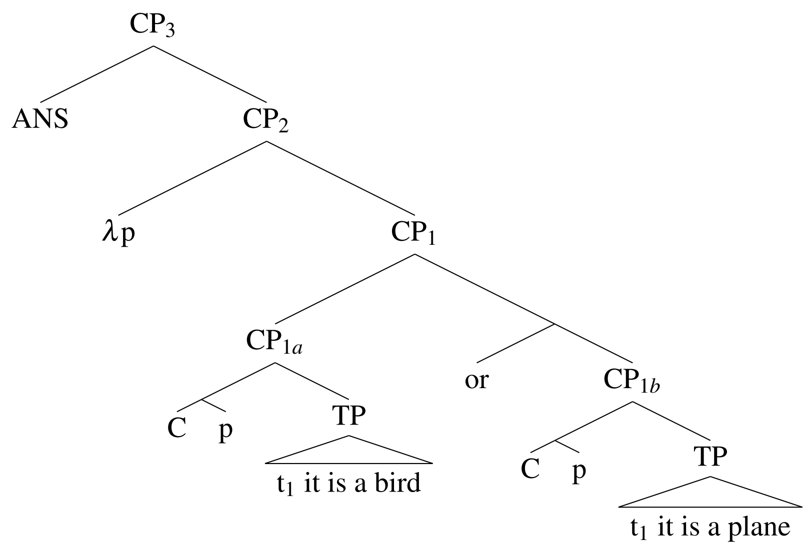
(74) Is it a bird or is it a plane?

- Ex. (74) is interpreted as an alternative question.
  (Belnap & Steel 1976, Rawlins 2008, Pruitt & Roelofsen 2010, Biezma & Rawlins 2012; ex. (74) from Belnap & Steel 1976)

This particular example receives a straightforward analysis in the present framework:

- Analysis adapts Karttunen (1977) and Biezma & Rawlins (2012) to the framework.
- Disjunction scopes at least as high as CP_1.

(75)



- Disjunction creates a two-membered Hamblin set:

(76) **Prediction for CP_2**

$[\![CP_2]\!] = \lambda p \,.\, p = \lambda w \,.\, \text{it is a bird in } w \vee p = \lambda w \,.\, \text{it is a plane in } w$

(77) **N.B. polar questions have singleton Hamblin sets**

a. $[\![\text{is it a bird}]\!] = \lambda p \,.\, p = \lambda w \,.\, \text{it is a bird in } w$

b. $[\![\text{is it a plane}]\!] = \lambda p \,.\, p = \lambda w \,.\, \text{it is a plane in } w$

  - (76) characterizes the union of the two sets characterized in (77).

- Because the same entity can't be both a bird and a plane, the union in (76) contains a unique true proposition — and ANS returns the singleton containing that proposition.

The predictions are less straightforward in other examples.

- An example where the two disjuncts provide mutually compatible propositions.

(78) Do you want coffee or do you want tea?

- Prediction: MS reading should be possible.

(79) **Hamblin denotation**

$\lambda p \,.\, p = \lambda w \,.\, \text{I want coffee in } w \vee p = \lambda w \,.\, \text{I want tea in } w$

(80) **Assumptions about w_0**

a. I want coffee at w_0.
b. I want tea at w_0.

(81) **Output of applying ANS to (80) at w_0**

$\approx \{\lambda w \,.\, \text{I want coffee at } w, \lambda w \,.\, \text{I want tea at } w\}$

- To some extent, the answering pattern looks similar to MS:

(82) Where can we get gas?

a. At Esso.
b. At Shell.
c. At Esso or at shell. You pick.
d. Esso and Shell both work, but let's go to Esso.

(83) Do you want coffee or do you want tea?

a. Coffee.
b. Tea.
c. Either is fine. You pick.
d. I want both, but I'll have coffee.

- Deviance of *both* needs to be explained (perhaps from pragmatic condition on MS):

(84) Do you want coffee or do you want tea?

??Both.

- But, alternative questions are generally taken to presuppose uniqueness. If this is to be maintained, uniqueness may be introduced by the **intonation** (e.g. Biezma & Rawlins 2012). Polar questions require further study in the view presented ...

(Full references omitted to conserve paper.)