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SALT 18, UMass Amherst
March 21, 2008

0 OVERVIEW

"if"-conditional	(1)	If Alfonso comes to the party, it will be fun.
Alternative unconditional	(2)	Whether Alfonso comes to the party or not, it will be fun.
Alternative unconditional	(3)	Whether Alfonso or Joanna comes to the party, it will be fun.
Constituent unconditional	(4)	Whoever comes to the party, it will be fun.

Similarities:

- Similar meaning – adjuncts interact with a main-clause operator.
- Similar distributional properties, both internal and external.
- See §1-2; right column of poster.

Differences:

- Different internal structure – interrogative syntax. (See §3; left column of poster)
- Unconditionals lead to an **indifference implication**:

   (5)   "It doesn't matter whether Alfonso comes to the party"

- Different effects in discourse. (See §4; center column of poster)
- Unconditionals always entail their consequent.

Analysis:

- Similarities and differences follow from treating unconditional adjuncts as interrogative conditionals.
  - Variants of this idea previously proposed by Zaefferer 1990, 1991; Lin 1996; Izvorski 2000; Gawron 2001.
- What is crucial and new: compositional Hamblin semantics (Hamblin 1973; Kratzer and Shimoyama 2002).
  - Allows for uniform type for unconditional and conditional adjuncts, $\langle st \rangle$. No syncategorematic or constructional distinctions needed.
  - "If"-conditionals: singleton set containing a proposition. Unconditionals: alternative set containing exhaustive propositions.
  - Allows for alternatives to participate in composition via Hamblin Pointwise Function Application.
- Each alternative provides a distinct domain restriction to main-clause modal, via Pointwise FA.
- Modals presuppose non-triviality; because of Pointwise FA, this projects once for each alternative.
- Indifference implication results from exhaustive non-trivial alternatives.
- Similar to analyses of disjunctive antecedents to "if"-conditionals in Alonso-Ovalle 2004, 2006, 2007.

Agenda:

- What it means to be a conditional.
- Evidence for treating unconditionals as conditionals.
- Evidence that unconditionals involve interrogative syntax.
- Empirical facts to analyze.
- Compositional analysis.
- Previous analyses.
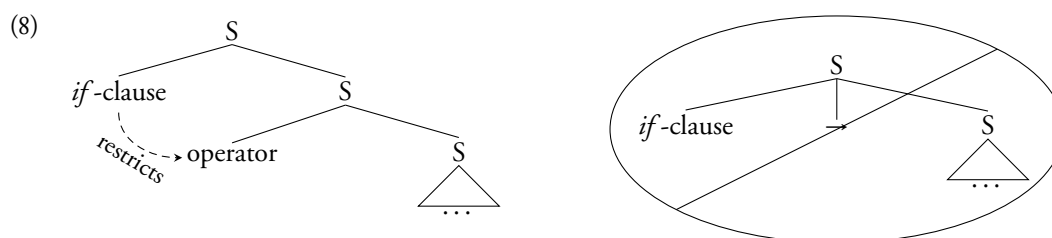
1 WHAT IS A CONDITIONAL?

- A common implicit answer that can be extremely useful for practical purposes:
   An (English) conditional is a sentence containing an adjoined "if"-clause.

- A few more elaborated versions:

(6) "It is extremely difficult, if not impossible, to give a precise definition of 'conditional meaning' or 'conditional interpretation'. ...Faced with these problems, we have decided to adopt a very broad definition..., which corresponds to the way the term is intuitively used by most linguists: a conditional is a two-clause structure in which one of the clauses is introduced by *if* (possibly preceded by *even*, *only*, or *except*) or by a word or phrase that has a meaning similar to *if*, *only if* (e.g. *provided*), or *except if* (e.g. *unless*)." (Declerck and Reed 2001 pp.8-9)

(7) "We proceed from the hypothesis that a definition of the universal *IF* concept is impossible in principle, because it represents a semantic primitive. In different languages this concept is expressed through a variety of means..." (Xrakovskij 2005 p. 93)

- Is there anything more to it? Can there be anything more to it?
- Lewis/Kratzer/Heim theory of conditionals (LKH): the semantic function of an "if"-clause is to restrict the domain of an operator (Lewis 1975/Kratzer 1977, 1981, 1986, etc./Heim 1982, Partee 1991). "The history of the conditional is the story of a syntactic mistake." (Kratzer 1986)

(8)

- The LKH theory provides a potential answer:[1]

(9) **Lewis/Kratzer/Heim Generalized**
A conditional adjunct is any adjunct that serves to restrict the domain of an operator.

- Are there any other such adjuncts besides "if"-clauses? Yes.

(10) a. Had Alfonso talked to Joanna, he would have known about her brother.
b. When Alfonso talks to philosophers, he gets annoyed.
c. You're gonna kill yourself, you keep driving like that. (Haiman 1986 ex. 17a)

(11) **Infinitival purpose clauses** (von Fintel and Iatridou 2005 inter alia)
a. To get to Harlem, you have to take the A-train.
b. To get this job, you have to speak fluent Spanish.

(12) **Absolutive adjuncts** (Stump 1986)
a. Standing on a chair, John can touch the ceiling.
b. As a blonde, Mary might look something like Jane.

Unconditionals (König 1986; Zaefferer 1990, 1991; Lin 1996; Haspelmath and König 1998; Izvorski 2000; Gawron 2001; Huddleston and Pullum 2002)[2]

(13)	a.	Whether or not Alfonso's great at his job, we have to fire him.	**Alternative unconditional**
	b.	Whether Alfonso's lazy or simply dumb, we have to fire him.	**Alternative unconditional**
	c.	Whatever Alfonso's good at, we have to fire him.	**Constituent unconditional**
	d.	No matter what Alfonso's good at, we have to fire him.	**Headed unconditional**
	e.	Regardless of what Alfonso's good at, we have to fire him.	**Headed unconditional**
	f.	Good or bad, we have to fire him.	**Bare unconditional**

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[1] Of course, other operations besides "restriction" may be involved, if exceptives are to be considered conditionals; von Fintel 1994; Declerck and Reed 2001

[2] They have been called other names, most notably variants of "concessive conditionals." The term "unconditionals" is due to Zaefferer.

- Every single researcher I cited has argued in one way or another that unconditionals are closely related to "if"-conditionals.

  – However, complete lack of agreement – how closely related, and in what way?

  – Most common idea: similar truth-conditions.
    Zaefferer 1990, 1991: Denotation converges with "if"-clause denotation, different composition.
    Lin 1996: Denotation converges, composition based on one version of the LKH theory (Heim 1990). But, specific to Mandarin "wulun...dou" structure.
    Izvorski 2000: Weak adjuncts, in the sense of Stump 1986. (But what are weak adjuncts?)
    Gawron 2001: Denotation converges, different composition. Suggestion of an LKH-based unification.

  – Can these ideas be taken further?

- **My claim**: English unconditionals are literally conditional adjuncts in the LKH sense.

  – Differences follow compositionally from internal structure of the adjuncts – English unconditionals involve interrogative morphology and syntax.

2   The conditionality of unconditionals

- This section goes through a series of evidence in favor of treating unconditionals as conditionals.

  – Caveat: nearly every test here picks out a surprisingly large class of adjuncts.

  – I do not think this is the wrong result, or in contradiction with my goals here.

- Test 1: Intuitive meaning is very close to that of a conditional. (König 1986; Zaefferer 1990, 1991; Lin 1996; Gawron 2001; Huddleston and Pullum 2002)

  – Unconditionals have a close paraphrase as an exhaustive list of conditionals. (Lin 1996)

(14) a.   Whether or not Joanna comes to the party it will be fun.
      b.   If Joanna comes to the party it will be fun, and if she doesn't it will be fun.

(15) a.   Whoever comes to the party it will be fun.
      b.   If Alfonso comes, it will be fun, and if Joanna comes, it will be fun, and if Henry comes, it will be fun . . . and if Fruela comes, it will be fun.

- Test 2: Interaction with an operator: do unconditionals restrict the domain of an operator?

  – Sort of: they might be said, pretheoretically, to "unrestrict" it. (Zaefferer 1990: they "remove background assumptions" as opposed to introducing them.)

  – Both target the same kinds of operators. (Gawron 2001)

(16)   If Alfonso comes to the party, you *should* come.

(17)   Whether or not Alfonso comes to the party, you *should* come.

- Unconditionals and "if"-conditionals can interfere, and can also stack (un)restrictions.

(18)   # Whether or not Alfonso comes to the party, if Alfonso comes to the party, you *should* come.

(19)   Whether or not alfonso comes to the party, if the party is at Joanna's house, you *should* come.

- Bottom line: unconditionals and "if"-conditionals do the same kind of thing to an operator. But any analysis must explain the differences.

- Test 3: Tense/aspect similarities. (Haspelmath and König 1998; Gawron 2001)

- Counterfactual "had...would":[3]

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[3]Interestingly, it does not seem that it is so easy to begin a counterfactual discourse segment with an unconditional.

(20)   (Suppose Alfonso didn't end up going to Bard, and Harvard or Princeton was his other choice.) Whether he had gone to Harvard or to Princeton, he would have become a banker.

(21)   Whatever John had chosen, Mary would have been pleased with it. (Gawron)

- Dependent present tense (see Haegeman 2003 inter alia; present tense in antecedent gets future reading due to "will" in consequent):

(22)   Whether Alfonso is tired or not, he will have a good time at the party.

(23)   Whatever alfonso is wearing, Joanna will make fun of it.

- Test 4: Relevance/speech act/biscuit conditionals. (cf. Austin 1956, Iatridou 1991, Haegeman 2003 etc., Siegel 2006, and much other work)

(24)   If you're hungry, there's a sandwich in the fridge.

(25)   Whether you're hungry or not, there's a sandwich in the fridge.

(26)   Whatever you're hungry for, there's probably some in the kitchen.

(27)   Whatever Alfonso said, you have to pull yourself together and go back to work.

3   The interrogative structure of unconditionals

Alternative unconditionals as interrogatives
- May seem obvious, but worth verifying.
- Test: Characteristic properties of embedded alternative interrogatives. Negative stripping ("or not"), and unexpected leftward appearance of "or not".

(28)   Alfonso wondered whether the party was cancelled or was not cancelled.

(29)   Alfonso wondered whether the party was cancelled *or not*.

(30)   Alfonso wondered whether *or not* the party was cancelled.

- Alternative unconditionals show the same pattern:

(31)   Whether the party is cancelled or is not cancelled, we should go out tonight.

(32)   Whether the party is cancelled *or not*, we should go out tonight.

(33)   Whether *or not* the party is cancelled, we should go out tonight.

Constituent unconditionals as interrogatives
- Somewhat less obvious: competing analysis as a free relative.
  - Adjoined relative structure familiar from correlative constructions in e.g. Hindi (see Srivastav 1991; Dayal 1995; Bhatt 2003 and many others).
  - Solid evidence against any kind of relative analysis, and against a correlative analysis in particular.
- A preemptive strike: "-ever" is not a useful diagnostic – found in root interrogatives.

(34)   Whoever could have done that?

(35)   Whatever is Alfonso be saying to that woman?

- (Does tell us that the structure is not e.g. a relative clause, or an exclamative.)
- Test 1: Multiple "wh". Possible in questions, unconditionals, not in free relatives (Gawron 2001; Huddleston and Pullum 2002; Grosu 2003):[4]

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[4]Interestingly, the least marked way to express this involves a headed unconditional.

(36)   Alfonso knows who said what.

(37)   * Alfonso talked to who(ever) said what.

(38)   Whoever buys whoever's property, the town council will still grant a building permit. (Gawron)

(39)   ? Whoever said what to whom, we've got to put this incident behind us and work together as a team. (CGEL)

- Test 2: Correlatives typically must involve a proform in the main clause: (cf. Hindi, Dayal 1996)

    (40)   **The correlation requirement in correlatives**
            Every relative pronoun in a correlative adjunct must have a corresponding proform in the main clause.

- Not true of English unconditionals.

    (41)   Whatever Alfonso said, Joanna got mad.

    (42)   Whoever brought the beer, it is a good brand.

- Constituent unconditionals of course can antecede a pronoun, but also true of questions.

    (43)   Who is Alfonso talking to? *She* looks really bored.

    (44)   Henry wondered what Alfonso was eating – *it* looked tasty.

    (45)   If Alfonso knows what Joanna is working on, he tries to help her with *it*.

- Most correlative languages seem to have some restrictions on the kind of proform, e.g. demonstratives in Hindi. No restriction in English.

    (46)   Whatever Alfonso is standing on, *it* is about to collapse. (Gawron)

    (47)   Whoever Alfonso talks to, he tries to convert *that person* to linux.

    (48)   Whoever Alfonso talks to, he tries to convert *the poor bastard* to linux.

- Test 3: Echo question licensing. Jespersen 1949; Baker 1968; Caponigro 2003: Can only question/echo interrogatives with "what". (Echo-)questioning a FR uses interrogative pronoun based on head of FR.

    (49)   A: Alfonso knows who Joanna talked to.
            B: What does Alfonso know? / Alfonso knows WHAT?
            B':   * Who does Alfonso know? / Alfonso knows WHO?

    (50)   A: Alfonso talked to whoever Joanna did.
            B: * What did Alfonso talk to? / Alfonso talked to WHAT?
            B':   Who did Alfonso talk to? / Alfonso talked to WHO?

- Difficult to apply directly to unconditionals; can't directly question or echo-question the adjunct.

- However, a very interesting echo pattern:

    (51)   A: Whoever Joanna talked to, Alfonso will be jealous.
            B: Alfonso will be jealous regardless of WHAT?
            B':   * Alfonso will be jealous regardless of WHO?

- "Regardless of" takes a question complement.[5]

- Artstein 2002 (following Schwarzschild 1999 on questions): echo questions subject to a *givenness* requirement.

- i.e. the context entails the existential closure of the sentence, along with any presuppositions introduced by the variables.

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[5]Actually, this simplifies: it has a concessive reading along the lines of "despite" adjuncts when it takes a DP that is not a concealed question, and an unconditional meaning when it takes a question.

- "what" presupposes non-human, so is the only one compatible with abstract entities ("issue", "proposition", etc.)
- "who" presupposes human, so is compatible with e.g. a human-denoting FR, but not a question antecedent.
- The question/issue of who Alfonso talked to, but *not the referent*, must be given in order for (51B) to be licensed. Therefore, unconditional denotes a question, not a FR.
- (Artstein does not discuss these cases, but discusses many independent reasons for assuming that "what" works like this.)
- Test 4: A question-only idiom: Huddleston and Pullum 2002 (§5.3.6 fn. 17) notes that "what were they doing VP-gerund" is ok in questions, but not in FRs. It is also ok in unconditionals:

    (52)   What were they doing reading her mail?

    (53)   * She didn't complain about whatever they were doing reading her mail.

    (54)   Whatever they were doing reading her mail, it didn't lead to any legal problems.

- Final point: simply the fact that constituent unconditional adjuncts and alternative unconditional adjuncts have the same distribution is quite telling.

> **Summary of evidence**
> - Alternative unconditional adjuncts look like run-of-the-mill alternative interrogative CPs.
> - Constituent unconditionals clearly involve a CP structure, following Izvorski 2000.
> - Constituent unconditionals are clearly not free relatives or relative clauses, contra Izvorski 2000.
> - (Note: Izvorski 2000 takes unconditionals to be FRs as an assumption, and shows from this that it follows that FRs involve a CP structure. None of the evidence there is actually evidence *for* a FR structure, and it is entirely coherent without the free relative assumption.)
> - Constituent unconditionals pattern most closely with interrogative CPs, and root "wh-ever" questions in particular.

4   What we are analyzing

- Major task: analyze the *indifference implication*.

    (55)   Whether or not Joanna's good at her job, we have to fire her.

- "It doesn't matter whether she's good at her job."
- Compare:

    (56)   # If Alfonso goes to the party or not, it will be fun.

    (57)   If Alfonso or Joanna goes to the party, it will be fun.

- Also, consequent entailment.

Status of the indifference implication
- Q: At-issue entailment, presupposition (cf. von Fintel 2000 on "wh-ever" free relatives), or conversational implicature (Klinedinst 2004)? A: entailment.
- Not cancellable:

    (58)   # Whether or not Joanna's good at her job, we have to fire her, and it does matter whether she's good at her job.

(59) # Whether or not Joanna's good at her job, we have to fire her, and if she is good at her job we can keep her on.

- Does not project:

(60) It's not true/the case that <u>whether or not Joanna's good at her job, we have to fire her.</u>

(61) Is it true/the case that <u>whether or not she's good at her job, we have to fire her?</u>

(62) If we have to fire her <u>whether or not she's good at her job,</u> I'll be shocked at HR.

(63) Unless we can fire her <u>whether or not she's good at her job,</u> we should make sure that HR knows about her bad reviews.

Discourse effects of indifference implication

- Characteristic use: to avoid taking a stance on an interlocutor's contribution while still moving forward with a question under discussion.

(64) A: Alfonso is really great at his job.
     B: Whether or not he's great at his job, we have to fire him.

- In contrast:

(65) A: Alfonso is really great at his job.
     B: ? We can/can't fire him.

(66) A: Alfonso is really great at his job.
     B: If he's great at his job, we can't fire him.
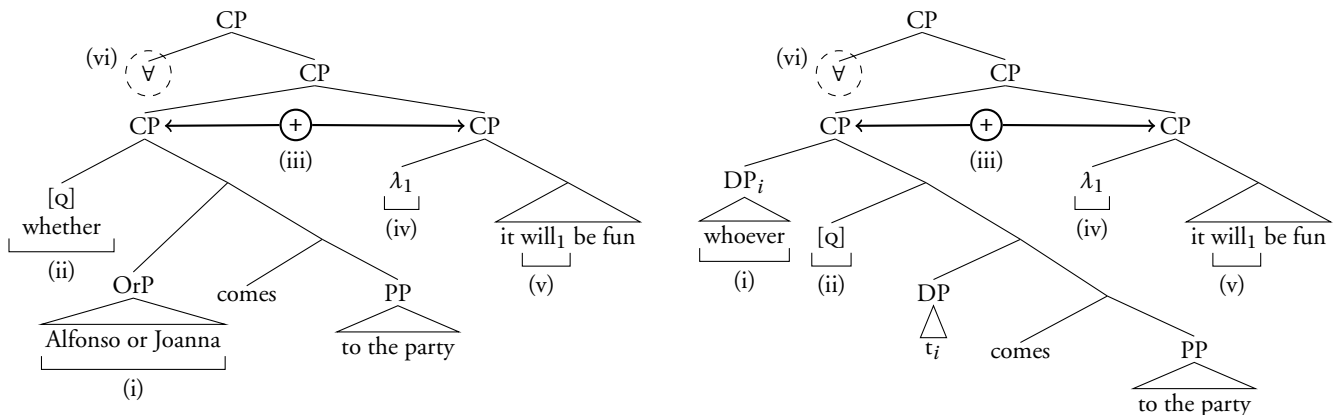   B': # If he's not great at his job, we can fire him.

- Plain modal sentence and positively anteceded "if"-conditionals: causal-type meaning.
    – Factual/modus ponens conditionals (Zaefferer 1990, 1991; Iatridou 1991)
- Negatively anteceded conditional not felicitous, unless subjunctive or counterfactual.

5 ANALYSIS

(67) **Anatomy of an unconditional**

(i) The *wh-ever* item introduces alternatives into the composition.
(ii) The question operator introduces an exhaustiveness presupposition.
(iii) Alternatives compose pointwise with the main clause via Hamblin pointwise function application – one modal claim for each alternative.
(iv) A conditional adjunct (whatever its content) restricts the domain of a main clause modal.
(v) The modal imposes an existence presupposition on its conversational background – leading to a distribution presupposition.
(vi) A default Hamblin universal operator collects alternatives.

- Structural ingredients: disjunction, "wh-ever" pronoun, interrogative morphology, operator domain restriction, and an operator.

Disjunction and interrogative pronouns

- Hamblin-style disjunction introduces alternatives into the composition (Alonso-Ovalle 2005; Simons 2005; Alonso-Ovalle 2006).

  (68) $[\![\textbf{Alfonso or Joanna}]\!]^{g,w,c} = \{\text{Alfonso}, \text{Joanna}\}$

  (69) $[\![\textbf{Alfonso comes to the party or Alfonso doesn't come to the party}]\!]^{g,w,c} =$
  $$\left\{ \begin{array}{l} \lambda w'. \text{Alfonso comes to the party in } w' \\ \lambda w'. \text{Alfonso doesn't come to the party in } w' \end{array} \right\}$$

- Hamblin style interrogative pronouns

  (70) $[\![\textbf{whoever}]\!]^{g,w,c} = \{x \,|\, x \text{ is human}\}$

  (71) $[\![\textbf{whatever}]\!]^{g,w,c} = \{x \,|\, x \text{ is not human}\}$

- What is the role of "-ever"?
  - While extremely important, I ignore this here.
  - My proposal (work in progress): it marks intensional domain widening. (cf. Jacobson 1995)
  - Also, may play some role in licensing the ∀ operator; see below.
- Each of these composes with its sisters via Hamblin pointwise FA. e.g.

  (72) $[\![[_S \textbf{Alfonso or Joanna comes to the party}]]\!]^{g,w,c} = \left\{ \begin{array}{l} \lambda w'. \text{Alfonso comes to the party in } w', \\ \lambda w'. \text{Joanna comes to the party in } w' \end{array} \right\}$

Question operator

- Role of interrogative morphology: presupposition that alternatives exhaust the domain (Karttunen and Peters 1976; contra Karttunen 1977 and Groenendijk and Stokhof 1984).
- Result: every world in the domain is presupposed to be in some alternative.

  (73) **Question operator** $[\![[\textbf{Q }[\alpha]]]\!]^{g,w,c} \underset{\text{def}}{=} [\![\alpha]\!]^{g,w,c}$
  defined on g, w, c only if
  $$\forall w' \in \bigcap f_c(w) : \exists p_{\langle st \rangle} \in [\![\alpha]\!]^{g,w,c} : p(w') = 1$$

- f_c is a salient conversational background.
- Therefore:

  (74) $[\![\textbf{whether Alfonso or Joanna comes to the party}]\!]^{g,w,c} = \left\{ \begin{array}{l} \lambda w'. \text{A. comes to the party } w', \\ \lambda w'. \text{J. comes to the party in } w' \end{array} \right\}$
  defined for g, w, and c only if
  $$\forall w'' \in \bigcap f_c(w) : \exists p_{\langle st \rangle} \in \left\{ \begin{array}{l} \lambda w'. \text{A. comes to the party in } w', \\ \lambda w'. \text{J. comes to the party in } w' \end{array} \right\} : p(w'') = 1$$

  (75) $[\![\textbf{whoever comes to the party}]]\!]^{g,w,c} =$
  $\{p_{\langle st \rangle} \,|\, \exists x_e \text{ s.t. } x \text{ is human} : p = \lambda w'_s. x \text{ comes to the party in } w'\}$
  defined for g, w and c only if
  $$\forall w'' \in \bigcap f_c(w) : \exists p_{\langle st \rangle} \in \{p_{\langle st \rangle} \,|\, \exists x_e \text{ s.t. } x \text{ is human} : p = \lambda w'_s. x \text{ comes to the party in } w'\} :$$
  $$p(w'') = 1$$

- Note: some technical complications with this presupposition and "wh-ever" items.
  - General problem: if an alternative-introducing item scopes over an alternative-aware operator that collects presuppositions, wrong predictions on a standard account.

- Solution: the λ operator involved in "wh"-movement binds a variable denoting the entire alternative set, not just one element. No pointwise composition here.
- Intuitively, need to reconstruct alternative-introduction to the base position.

Denotation of a conditional

- Analysis is compatible with a range of analyses in the Lewis/Kratzer/Heim tradition.
- Here I use a binding/correlative-type analysis (Geis 1985; von Fintel 1994; Schlenker 2004; Bhatt and Pancheva 2006).
  - Conditional adjunct binds a variable that provides a restriction to a main-clause modal.
  - Conditional adjunct is intuitively a free relative over possible worlds.
- A λ operator present at LF mediates the binding.

(76) $[\![\lambda_i[\alpha]]\!]^{g,w,c} = \{\lambda p_{\langle st \rangle} . [\![\alpha]\!]^{g/1 \to p, w, c}\}$

Denotation of a modal

- I assume here that modals give rise to a non-triviality presupposition.
- Very traditional denotation following Kratzer. (Kratzer 1977, 1981, 1986, 1991)
- Restriction arrives via binding. (compatible with other approaches.)
- Only singly relativized formalization here; ordering source could be added.
- I treat "will" as a simple necessity modal; implicitly assuming the "broomstick" model of worlds and time. (Thomason 1984; Belnap 1992)

(77) $[\![\mathbf{will}_i]\!]^{g,w,c} = \{\lambda p_{\langle st \rangle} . \lambda w' . \forall w'' \in ([\cap f_c(w')] \cap g(i)) : p(w'')\}$
defined on w', g, w, c only if
$[\cap f_c(w')] \cap g(i) \neq \emptyset$ (**non-triviality**)

- Therefore:

(78) $[\![\lambda_1 [\mathbf{the\ party\ will}_1 \mathbf{\ be\ fun}]]\!]^{g,w,c} = \{\lambda p_{\langle st \rangle} . \lambda w' . \forall w'' \in ([\cap f_c(w')] \cap p) : \text{the party is fun in } w''\}$
defined on w', g, w, c only if
$[\cap f_c(w')] \cap p \neq \emptyset$ (**non-triviality**)

Hamblin Function Application and composition of the conditional adjunct

- Conditional adjunct composes with main clause via pointwise function application (FA).

(79) **Mixed set/function version of Hamblin FA** (from Kratzer & Shimoyama)
If α is a branching node with daughters β and γ, and $[\![\beta]\!]^{w,g} \subseteq D_\sigma$ and $[\![\gamma]\!]^{w,g} \subseteq D_{\langle \sigma \tau \rangle}$, then $[\![\alpha]\!]^{w,g} \underset{\text{def}}{=}$
$\{a \in D_\tau \mid \exists b \exists c [b \in [\![\beta]\!]^{w,g} \land c \in [\![\gamma]\!]^{w,g} \land a = c(b)]\}$

- Normal "if"-clause:
  - Adjunct denotes a singleton set containing a proposition. (Content of clause.)
  - When combining singletons, pointwise FA reduces to standard Montagovian FA.
  - Consequently, reduces to traditional compositional analysis of "if"-conditionals.
- Unconditional:
  - Adjunct denotes an exhaustive set of propositions.
  - Pointwise FA applies each proposition to the main clause in turn.
  - Result: an exhaustive set of conditionalized propositions.
- Therefore:

(80) $[\![[\text{\bf whether Alfonso or Joanna comes to the party}]\ [\lambda_1\ [\text{\bf it will}_1\ \text{\bf be fun}]]]\!]^{g,w,c}=$

$$\left\{\begin{array}{l} \lambda w'.\forall w''\in\left([\cap f_c(w')]\cap(\lambda w'''.\text{A. comes to the party in }w''')\right):\text{the party is fun in }w'',\\ \lambda w'.\forall w''\in\left([\cap f_c(w')]\cap(\lambda w'''.\text{J. comes to the party in }w''')\right):\text{the party is fun in }w'' \end{array}\right\}$$

defined for g,w,c only if

$$\forall w''\in\cap f_c(w):\exists p_{\langle st\rangle}\in\left\{\begin{array}{l}\lambda w'.\text{A. comes to the party in }w',\\ \lambda w'.\text{J. comes to the party in }w'\end{array}\right\}:p(w'')=1$$

First alternative defined for w',c only if
$$[\cap f_c(w')]\cap(\lambda w'''.\text{A. comes to the party in }w''')\neq\emptyset$$
Second alternative defined for w',c only if
$$[\cap f_c(w')]\cap(\lambda w'''.\text{J. comes to the party in }w''')\neq\emptyset$$

(81) $[\![\text{\bf whoever comes to the party}]]\!]^{g,w,c}=$

$$\left\{p_{\langle st\rangle}\ \middle|\ \exists x_e\text{ s.t. }x\text{ is human}:p=\lambda p_{\langle st\rangle}.\lambda w'.\middle|\begin{array}{l}\forall w''\in\left([\cap f_c(w')]\cap(\lambda w'''_s.x\text{ comes to the party in }w''')\right)\\ \qquad\qquad:\text{the party is fun in }w''\end{array}\right\}$$

defined for g,w and c only if
$$\forall w''\in\cap f_c(w):\exists p_{\langle st\rangle}\in\{p_{\langle st\rangle}\ |\ \exists x\text{ s.t. }x\text{ is human}:p=\lambda w'_s.x\text{ comes to the party in }w'\}:$$
$$p(w'')=1$$
each alternative defined for w',c, where x is the x referred to in that alternative, only if:
$$[\cap f_c(w')]\cap(\lambda w'''.x\text{ comes to the party in }w''')\neq\emptyset$$

Collecting the alternatives

- Hamblin universal operator collects alternatives:

  (82) Where α has a denotation of type $\langle st\rangle$,
  $$[\![\forall[\alpha]]\!]^{g,w,c}\underset{\text{def}}{=}\{\lambda w'.\forall p\in[\![\alpha]\!]^{g,w,c}:p(w')=1\}$$

- Why?
- An idea following Menéndez-Benito 2006 (see §3.7): Default Hamblin $\forall$ operators inserted up to interpretability.
    - Variant: default $\forall$ inserted at spell-out if no other operator?
    - Very hard to test empirically.
- Proposed for Dayal-sentences like (83), without generic aspect:

  (83) Cualquier estudiante podría haber estado aquí ayer.
  　　　 Any　　　 student　 could　 have　 been　 here yesterday.

- Alternative: licensed (via agreement) by "-ever" / disjunction.
- Evidence: intervention effects? (Right adjoined conditional attached low, VPish; see Iatridou 1991.)

  (84) # Whether Alfonso or Joanna comes to the party, will it be fun?
  (85) 　Will the party be fun whether Alfonso or Joanna comes to it?
  (86) # Will the party be fun or boring whether Alfonso or Joanna comes to it?

- Result, either way:
    - At-issue component: conjunction of conditional claims.
    - Presupposed component: non-triviality for each claim, i.e. projects as a distribution presupposition; alternatives exhaust domain.
    - Exhaustiveness leads to entailment of main-clause claim.
- Indifference implication: exhaustive non-trivial conditional claims.
- Discourse effect follow from distribution presupposition, in combination with main-clause claim.

- Background: presupposes that rejected claim is false.
- Foreground: asserts that it doesn't matter.

6   Previous analyses

- Sketch of Zaefferer 1990; Lin 1996; Gawron 2001.
- I will focus on what each analysis makes of the relation between "if"-conditionals and unconditionals.
  - Does not do all aspects of them justice.

Zaefferer's analysis (Zaefferer 1990, 1991)

- Syncategorematic approach; three kinds of infons: "*if* $\sigma(\tau)$", "*x-ever* $\sigma(\tau)$", and "*whether* $\Sigma(\tau)$"
- Denotations defined separately for each kind of infon.
- "If" and alternative unconditionals have identical asserted content (Barwise and Perry-style situation semantic account of conditionalization).
  - Presupposition of "if"-conditionals: antecedent's content not exhaustive.
  - Presupposition of alternative unconditionals: antecedent's content exhaustive.
- Constituent unconditionals very similar, with additional quantification over an individual variable.
- Main criticism: completely non-compositional. Denotations converge by stipulation.

Lin's analysis

- "Wulun"-conditionals (Lin 1996):

  (87)   (wulun/buguan) ni   zuo shenme, wo dou mei yijian
          no.matter   you do what,   I   all not opinion
          No matter what you do, I won't have an opinion.

- Hamblin approach to interrogative clauses, "wulun" operates on alternatives.
  - Takes the generalized union of alternatives – forms proposition of worlds that make every alternative true.
- Composition with main clause via (Heim 1990-style) conditional construction. Specific to "dou", which is required in Chinese.
- Difference from regular conditionals is content of antecedent – produces exhaustive proposition.
- Not directly applicable to English, because of the "dou"-requirement, and lack of "no matter" in many cases.
- Main criticism, if generalized: the domain expansion problem.
  - Domain restriction is actually vacuous on this account, if treated in a standard way (intersection of domain and proposition).
  - Proposition guaranteed to be ⊇ any domain.
  - In general, any account which collects alternatives inside the adjunct will have this issue.
  - Problem noticed and exploited in Klinedinst 2004, in order to derive an implicature. (But, indifference not implicature.)
- See also Giannakidou and Cheng 2006; Cheng and Giannakidou pear for a different analysis of this data – treat "wulun"-conditionals more like correlative structures.

Gawron's analysis (Gawron 2001)

- The earlier caveat especially applies here; complex & comprehensive analysis.
- Unconditional construction: S with a feature [cond] consists of an adjunct with "-ever" and a regular S.
  - Assumption: "whether" + "-ever" = "whether"
- "-ever" acts determiner-like, and operates on alternative and constituent "pre-questions".

- Meaning like that of "even": presupposes that sister is low point on a scale, indefinite quantificational determiner.

- Unconditional construction: put together "-ever α" with contextual domain restriction for "-ever", and form a Heim 1990-style conditional denotation. Bind variable denoted by "wh-ever" clause in process.

- Quantificational force determined by operator; existential is possible. (e.g. for "Whatever John is standing on, it is about to collapse.")

- Criticisms:
  - Not clear that presupposition of "-ever" projects in a desired way for non-existential readings.
  - Not clear that there are real existential readings.
  - Subject to domain expansion problem (See above).
  - Real problem for present purposes: no easy way to unify with "if"-conditional.

- Alternative way of thinking about last criticism: what I have done is take Gawron's suggestion of using an alternative semantics, and apply it to a more general variant of his analysis.

7 Conclusions

- Completely compositional analysis, with every piece independently motivated.
  - Though, some questions about $\forall$.
- Unconditional meaning simply falls out from the structure if done right.
- Exact same external semantics for "if"-conditionals and unconditionals.
- Hamblin semantics provides the keys: pointwise FA, and uniform semantic type for interrogative clauses and "if"-clauses.
- Future directions:[6]
  - Languages where unconditional not formed with interrogative structure (Haspelmath and König 1998).
  - Role of "-ever", and connection to disjunction.
  - Connection to concessives and "even if" conditionals.
  - Cross-categorial approach to conditionals (my analysis amounts to a cross-categorial approach to unconditionals).

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[6]Ad: see my dissertation, appearing this spring/summer.

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