

Not Knowing or Caring Who

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1 Introduction

Goals of this talk

- Show that modal implications associated with a certain class of free choice items in extensional contexts are the result of the enriched meaning contributed by the alternatives associated with FCIs
 - Propose an analysis of free choice free relatives
 - Show that the analysis naturally extends to epistemic indefinites
- Determine how on different occasions of use an expression can be used to express ignorance or to lead to a stronger assertion
 - One of the puzzles about these modal implications is that they do not seem to belong to the same meaning component
 - Assertive vs. expressive meaning
- Show how FCIs can act as implicature suspenders

The Challenge of Free Choice

Free choice: a family of phenomena that involve the following three properties

Strengthening: conjunctive implications out of a basic disjunctive meaning
(for indefinites: disjunction over witnesses)

- free choice permission
(1a), on one reading, implies (1b) and (1c)
- ‘distribution across worlds’ property of free choice indefinites
see (2)
- universal reading of *any* in episodic contexts
see (3)

Uncertainty: ‘don’t know which’ implication in the absence of strengthening (1a) on another reading, where it can be followed by (1d)

Licensing: requirement of some FCIs for a modal (of a particular kind) to be present; connection with polarity sensitivity
see (4)

- (1)
 - a. You may use the Software to develop and run programs of your own or to run programs written for the Software environment by others.
 - b. You may use the Software to develop and run programs of your own.
 - c. You may use the Software to run programs written for the Software environment by others.
 - d. I don’t remember which. Let’s check the licensing agreement.
- (2) You can use this coupon for any of the following services: oil change, smog check, tire rotation.
Coupon limited to one service only!
- (3)
 - a. At the workshop I spoke to anyone who wanted to speak to me.
 - b. At the workshop I spoke to everyone who wanted to speak to me.
- (4)
 - a. #Anyone of you is the murderer.
 - b. Anyone of you may/#must be the murderer.

The scope and source of free choice

- To what extent are the phenomena revolving around free choice connected?
- What gives rise to the various kinds of free choice implications?
- What is the proper division of labor between semantics and pragmatics in accounting for free choice effects?
- How do pragmatic mechanisms interact with semantic composition?

Some recent approaches

- Zimmermann 2000, Geurts 2003 give a modal conjunctive meaning to *or*.
- Schulz (2004) offers a Gricean account of free choice permission.
- Kratzer & Shimoyama (2003) and Chierchia (2005) assume that domain widening weakens the plain truth conditional content of free choice indefinites, while the alternatives yield stronger meanings and give rise to implicatures accounting for the free choice effect of such indefinites.
- Aloni (2003) and Simons (2005) assume that indefinites and *or* introduce sets of propositional alternatives and propose a revised semantics of modals and *or*.

Another manifestation of the free choice problem

- Free relatives with *-ever* (*who-/what-/whichever*-phrases) in an episodic, non-modal environment give rise to modal implications.
- The ‘distribution across worlds’ property of FCIs shows up with the modal implications of free relatives in extensional environments.
- Free choice implications of free relatives with *-ever* can help disentangle the issue of quantificational force from the source of free choice.
- Free choice effects do not arise just out of basic disjunctive meanings.
- The distinction between the two kinds of modal implications, ignorance and indifference, have implications for any pragmatic reconstruction of the free choice effect.
- Special challenges
 - free choice free relatives are definites and domain widening, the assumed hallmark of FCIs, simply strengthens the uniqueness claim for definites
 - a covert modal operator in logical form is problematic for the kinds of cases to be considered in this talk but necessary in alternative proposals to get distribution across worlds

Modal implications of free relatives

Ignorance: signals the speaker’s (more generally, an agent’s) epistemic uncertainty about the identity of the referent of the FR

- (5) Whoever entered the house last saw what happened.
The person who entered the house last saw what happened.
I do not know who it is that entered the house last.

Ignorance implication: the *namely* test (Dayal 1997, Horn 2001)

- (6) a. # Whatever Mary is cooking, namely ratatouille, has tons of onions.
b. What Mary is cooking, namely ratatouille, has tons of onions.
c. The thing Mary is cooking, namely ratatouille, has tons of onions.
d. Whatever Mary is cooking—be it ratatouille, latkes, or goulash—has tons of onions.

Distribution in pseudoclefts is tied to the ignorance implication (Dayal 1997)

- (7) a. The book Mary bought was Barriers.
b. # Whatever book Mary bought was Barriers.
c. Whatever book Mary bought was certainly not Barriers.

d. Whatever book Mary bought was expensive.

Indifference: signals (intentional or unintentional) indiscriminateness with respect to the identity of the referent of the FR

- (8) In response, I blurted out whatever came to my mind first.
In response, I blurted out the first thing that came to my mind.
Counterfactual implication: I could well have blurted out anything else that came to my mind (instead).

Free choice reading

Context: Suppose I am giving you directions on how to get downtown. There are three exits you can possibly take and you will only take one exit.

- (9) Whatever exit you take will get you onto MLK Blvd.
(10) a. Any exit you take will get you onto MLK Blvd.
b. Every exit you (may) take will get you onto MLK Blvd.

Free choice effect of free relatives

- Ignorance implication: ‘it may be this or that’ (Uncertainty)
- Indifference implication: ‘it was this but it could well have been any other’ (Strengthening)
- Free choice reading: universal implication (Strengthening)

Whence the modality?

- Are free choice free relatives implicitly modal and if so in what part of their meaning?
- Are the two kinds of modal implications on a par?
- Can we give a uniform meaning to *whatever*-phrases in their ignorance, indifference and plain free choice readings ((5), (8) and (9))?

2 Modal Assertion or Presupposition?

Dayal (1997): proposition expressed is modal

- *whatever*-phrases have a modal dimension: they are interpreted with respect to a set of alternatives to the world of evaluation, the i(dentity)-alternatives (related proposal by Giannakidou (2001) for FCIs)

- i(dentity)-alternatives are equivalence classes, determined by the denotation of the free relative, within the set of of worlds compatible with the speaker’s beliefs in the world of evaluation¹
- variation condition: there are distinct i-alternatives (non-trivial partition of the set of of worlds compatible with the speaker’s beliefs in the world of evaluation)

“The definition of i-alternatives . . . requires that there be at least two worlds, distinguishable on the basis of the denotation of the FR. That is, as far as the speaker is concerned, the identity of the object denoted by the FR should still be open. For if the speaker has a belief about the identity of the unique relevant individual, there cannot be two worlds in $f(w)(s)$ that will qualify as i-alternatives. The *ever* FR will be infelicitous because quantification will be over an empty domain.” (Dayal 1997:109)

- (11) Dayal’s analysis (in von Fintel’s (2000) reformulation):
whatever(w)(F)(P)(Q) (where F is a doxastic/epistemic modal base)
 a. presupposes: $(\exists w', w'' \in F) \iota x.P(w')(x) \neq \iota x.P(w'')(x)$
 b. asserts: $(\forall w' \in F) Q(w')(\iota x.P(w')(x))$

Is the truth-conditional content really modal?

- To explain “fact of the matter” entailments the modal base has to be epistemic (realistic).
 - Negation must scope under the universal modal quantifier.
Dayal allows both scopings for independent reasons.
- (12) Whatever she is cooking doesn’t smell good at all.
The thing she is cooking doesn’t smell good.
I don’t know what she is cooking.
 NOT: *The thing she is cooking may well not smell good.*
- As von Fintel (2000) observes, in embedded contexts epistemic certainty is not part of truth-conditional content, while the the implication of epistemic uncertainty projects like a presupposition.
- (13) I suspect there is a lot of garlic in whatever he is cooking.
I do not know what he is cooking.
I suspect there is a lot of garling in what he is cooking.
 NOT: *I suspect I know there is a lot of garling in what he is cooking.*

¹Dayal actually defines i(dentity)-alternative as being a property of individual worlds; the definition itself shows it to be a global property of a set of worlds: a world $w' \in f(w)(s)$ is an i-alternative iff there exists some $w'' \in f(w)(s)$, such that $\iota x[P(w')(x)] \neq \iota x[P(w'')(x)]$.

- In hint-type uses, pointed by von Fintel, the modal base made reference to in the presupposition is the epistemic state of the hearer but the modal base made reference to in the assertion is, arguably, not the hearer's but the speaker's.
- (14) a. I will tell you one thing: there is a lot of garlic in whatever I am cooking.
Context: you are trying to guess (and I know) what I am cooking
- b. Whatever is behind that door has two legs.
Context: you are trying to guess (and I know) what's behind that door
- Strange consequence with respect to plain free choice reading, as in (9):
 - my grounds for asserting (9) are the belief/knowledge that every exit (in the relevant domain) will get you onto MLK Blvd if you take it
 - but I can only felicitously assert (9) if I do not know what exit you will in fact take.
 - Similarly, (8) is predicted to be assertable only if I do not remember anymore what came to my mind first.

von Fintel (2000): proposition expressed is not modal

- simple definite description denotation for free relative
- ignorance and indifference implications are presuppositional
- Ignorance analysis (analysis N)
 - variation presupposition
- Indifference analysis (analysis I)
 - conditional presupposition: minimal change in the identity of the free relative referent would not make a difference to the truth of the sentence
- Unified analysis
 - conditional presupposition with an epistemic or a counterfactual modal base
 - provided the *whatever*-phrase receives widest scope if the modal base is epistemic (consider (23a))
 - and provided the presuppositional content becomes truth-conditional content under embedding if the modal base is counterfactual (consider (23b))

(15) **Ignorance analysis:**

$whatever(w)(F)(P)$ (where F is a modal base)

a. presupposes: $(\exists w', w'' \in F) \iota x.P(w')(x) \neq \iota x.P(w'')(x)$

b. denotes: $\iota x.P(w)(x)$

(16) **Indifference analysis:**

$whatever(w)(F)(P)(Q)$

a. presupposes: $(\forall w' \in \min_w[F \cap (\lambda w''. \iota x.P(w'')(x) \neq \iota x.P(w)(x)])$

$Q(w')(\iota x.P(w')(x)) = Q(w)(\iota x.P(w)(x))$

b. asserts: $Q(w)(\iota x.P(w)(x))$

Variation presupposition is not strong enough

- The variation presupposition in (11a)/(15a) is not sufficient to account for the infelicity of (6a):
 - Consider a situation in which the speaker knows that Mary is cooking ratatouille but does not know whether Mary is cooking the kind of ratatouille with more eggplant than tomatoes or the kind of ratatouille with more tomatoes than eggplant.
 - In such a situation the variation presupposition is satisfied and (6a) ought to be able to be uttered felicitously
- More generally, an analysis tying the variation condition to witnesses for the description predicts, incorrectly, a contrast between (17a) and (17b) (only (17b) is predicted infelicitous, while in fact both are).

- (17) a. # Whatever Mary is cooking, namely ratatouille, has tons of onions.
b. # Whoever entered the house last, namely John, saw what happened.

Free choice reading

- On an analysis with a uniform conditional presuppositional, the plain free choice reading, as in (9), would be a contextual entailment: the result of presuppositional and truth-conditional content taken together.
- But an assertion of (9) is felicitous in contexts in which it is not taken for granted that either all or none of the relevant exits lead to MLK Blvd.

Are ignorance and indifference implications really presuppositional?

- That the identity of referent makes no difference to the truth of the sentence is part of the informative content of a *whatever*-phrase, not taken for granted in advance.
- If the ignorance implication were presuppositional, just like the existential implication is, it would be cancellable via denial. In fact, it is not.

Presupposition denial:

(18) The king of France is NOT bald because there IS NO king of France!

Denying the existential presupposition of a free choice free relative is possible but denying the ignorance implication is not:

(19) A: I want you to empty whatever is in your bag.

a. B: I will NOT empty the contents of my bag because there is NOTHING in my bag!

b. B: I will NOT empty the contents of my bag because you KNOW what's in my bag!
(does not deny the ignorance implication of A's utterance)

(20) A: Will you welcome whoever is visiting?

a. B: I will NOT welcome whoever is visiting because NOONE is visiting!

b. I will NOT welcome whoever is visiting because you KNOW who is visiting!
(does not deny the ignorance implication of A's utterance)

Are there filtering effects?

(21) I don't know what she is cooking but I'll eat whatever she puts on my plate.

She will put more than one thing on my plate.

OR *I will eat indiscriminately.*

(no neutral reading, with no implication of plurality or indiscriminacy, seems to be available)

(22) If I vote indiscriminately, I will just vote for whoever is at the bottom of the list.

I don't know who is at the bottom of the list.

(is there a reading with no implication of ignorance?)

Asymmetry between ignorance and indifference readings

- As von Stechow observes, the indifference implication is part of truth-conditional content in embedded contexts, while the ignorance implication projects out of embedded contexts ((23b) vs. (23a)).

(23) a. Unless whatever John sends us is quite short, we will have to cut down our part of the proposal.

I do not know what John will send us (and how long it will be).

NOT: *Anything John might send us is of comparable length.*

- b. Unless John takes whatever car becomes available first, we won't make the ferry.
Unless John acts indiscriminately and takes the first car to become available, we won't make the ferry.
 NOT: *John will act indiscriminately and unless he takes the first car to become available, we won't make the ferry.*

Plurals

- Modal implications can disappear with plural free choice free relatives
 - Dayal notes that in the case of FRs with plural domains and episodic tense, “it is hard to unequivocally classify the reading as identity [ignorance] or FC [non-modal universal].”
 - Both kinds of readings—one with a modal implication, the other without—are available
 - (24) can be used to simply commit the speaker to having returned all the books the addressee lent her
 - (25), pointed out by Dayal, shows that a free choice free relative can be used in a context where no ignorance or indifference is presupposed
- (24) I've already returned whatever books you've lent me.
- (25) John cooked ratatouille and goulash. They both had onions. Therefore, whatever John cooked had onions.

Summing up

- Modal implications are always present with semantically singular free choice FRs but can disappear with plural FRs.
- Both ignorance and indifference readings have non-modal truth-conditional implications.
- The ignorance implication projects like a presupposition but is, arguably, not a presupposition.
- The indifference implication seems to be part of truth-conditional content in embedded contexts.
- Assuming that modality is part of the truth-conditional content
 - does not capture the projection properties of the ignorance reading
 - cannot explain the difference between singular FRs and plural FRs
 - does not capture the plain free choice reading
- Assuming that modality is part of the presuppositional content

- does not capture the fact that the modal implications are part of the informative content of a FCI, not taken for granted in advance
- cannot account for the difference between singular and plural free relatives.
- does not appropriately distinguish between the components of meaning giving rise to the ignorance and the indifference implications
- We need a variation condition that does not amount just to plurality of potential witnesses.
- Is it possible to unify all the different readings?

3 Modality via Alternatives

Main Idea

- Get at the notion of *don't know/care who* not via potential referents of the description but via alternative, more specific descriptions.
- *Whatever*-phrases convey that any way of specializing their descriptive content is compatible, epistemically or metaphysically, with the truth of the predication.
- Different ways of specializing the descriptive content bring in the modality.

Semantics

- Quantificational force: Free relatives are definites (Jacobson (1995), Dayal (1995, 1997), Rullman(1995), von Stechow (2000))
- Free choice items are associated with alternatives, like polarity items in Krifka's (1995) analysis
- For an FR with descriptive content a given property P , the alternatives are more specific properties P' along a contextually given dimension
 - Alternatives based on the particular individuation scheme assumed
 - The alternatives may be actively entertained in the context, or not
- Individuation of alternatives: incomparable, maximally specific properties instantiated in some world of some contextually relevant set (Condoravdi, Crouch and van den Berg 2001)
 - Incomparable properties cannot be instantiated by the same individual
 - On one kind of individuation scheme, the maximally specific properties are individual concepts

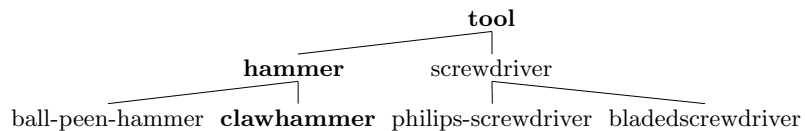
- Non-triviality of alternatives: there are at least two incomparable maximally specific properties in the set of alternatives (each instantiated in some world, not necessarily the same one)
 - In any world, if there is a unique individual with property P , only one among P 's maximally specific alternatives will be instantiated (by that unique individual)
- Distribution across possible worlds comes about through alternative property instantiation
- Non-triviality of alternatives yields the desired results of the variation condition
- The exact individuation scheme intended by the speaker may not be recoverable by the hearer and may not even be determined by the speaker (see Schwarzschild 2002 on the distinction between a parameter fixed by context and the extension of that parameter suitably determined)

An Example

- Consider (26) with the property hierarchy as in (27) and suppose that the tool that was actually in front of me was a clawhammer.
- Then properties like ball-peen-hammer-in-front-of-me or screwdriver-in-front-of-me are not instantiated in the actual world.
- But these properties are made reference to in the meaning of the FCI *whatever tool was in front of me*.

(26) I grabbed whatever tool was in front of me.

(27)



Ordinary content vs. Alternatives

- Take the semantic value of FRs to be a BFA-structure, as in (28). This is the invariant part of the meaning.
- The alternatives can project and be discharged at the assertion level
 - Ordinary content remains separate from alternatives
 - Alternatives are carried along as a second dimension of meaning
- Allow for local discharge of the alternatives in addition to their projection

- Alternatives are incorporated into ordinary content
- Note parallelism with presuppositions: locally accommodated presuppositions become part of truth-conditional content

Two modes of composition for alternatives

- Pointwise application with projection of the alternatives
 - Application with local discharge of the alternatives
 - Locally discharged alternatives strengthen truth-conditional content via the compatibility condition they impose
 - Local discharge is a mechanism akin to Chierchia’s (2004, 2005) implicature freezing
- (28) *whatever* \bar{N} (\bar{N} denoting property P) :
 $\langle \lambda R \lambda Q \lambda w. Q(w)(\iota x. R(w)(x)), P, \{P' \mid P' \subset P\} \rangle$
- (29) Application with projection of the alternatives (pointwise application):
 $\langle \lambda w. Q(w)(\iota x. P(w)(x)), \{ \lambda w. Q(w)(\iota x. P'(w)(x)) \mid P' \subset P \} \rangle$
- (30) Application with local discharge of the alternatives:
 $\lambda w. Q(w)(\iota x. P(w)(x)) \wedge (\forall P' \subset P)(\exists w' \in \mathcal{WS}(w, P')) Q(w')(\iota x. P'(w')(x))$,
 where $\mathcal{WS}(w, P) = \{w\}$ if P is instantiated in w , otherwise a set of worlds maximally similar to w in which P is instantiated.
- (31) *whatever tool was in front of me*:
 $\langle \lambda R \lambda Q \lambda w. Q(w)(\iota x. R(w)(x)), tool, \{P' \mid P' \subset tool\} \rangle$
- (32) *I grabbed whatever tool was in front of me*:
 a. $\langle \lambda R \lambda w. grab(w)(\iota x. R(w)(x))(me), tool, \{P' \mid P' \subset tool\} \rangle$
 b. $\langle \lambda w. grab(w)(\iota x. tool(w)(x))(me), \{ \lambda w. grab(w)(\iota x. P'(w)(x)) \mid P' \subset tool \} \rangle$
 (application with projection)
 c. $\lambda w. grab(w)(\iota x. tool(w)(x))(me) \wedge (\forall P' \subset tool)(\exists w' \in \mathcal{WS}(w, P')) grab(w')(\iota x. P'(w')(x))$
 (application with discharge)

Readings

- The different readings depend on the location of discharge and the individuation scheme assumed
- For plurals this can lead to purely extensional readings

Local discharge

- Local discharge and incorporation of the alternatives into truth-conditional content are the source of the indifference reading and of the plain free choice reading of FRs
- When locally discharged, the alternatives of FRs strengthen the assertive content.
- Reference to \mathcal{WS} ensures that the universal condition on alternatives can be satisfied.
- Embedded contexts is where the effect of local discharge will be visible (consider (23)).

Negation and local discharge

(33) Schematically: $\neg(p^o \wedge \bigwedge p^{alt}) \leftrightarrow \neg p^o \vee \neg \bigwedge p^{alt}$

- (34) a. I didn't (just) vote for whoever was at the bottom of the list.
b. I didn't (just) grab whatever tool was in front of me.

- Negation can negate indiscriminacy implication
- If the plain truth-conditional content is negated, then universal quantification over alternatives cannot hold.
- Hence there are no readings in which the plain truth-conditional content is negated but the counterfactual/indiscriminacy implication projects through negation
 - E.g. (35a) does not have a reading equivalent to (35b) or (35c)

- (35) a. I didn't vote for whoever was at the bottom of the list.
b. I didn't vote for the person at the bottom of the list but I would have voted for anyone else.
c. I voted indiscriminately but/and didn't vote for the person at the bottom of the list.

Singular vs. plural FRs

- Given the non-triviality of alternatives, in the case of an FR with a singular domain, there would have to be at least two maximally specific properties, only one of which is instantiated in the world of evaluation.
- Therefore, (non-dependent) FRs with a singular domain will always give rise to a modal implication.
- In the case of a plural free relative, on the other hand, it is possible for all maximally specific properties to be instantiated in the world of evaluation.

- This would happen when the individuation scheme assumed is the one distinguishing among the individual members of the plural entity.
- With that individuation scheme and an FR in a distributive predication, the condition with universal quantification over alternatives is entailed by the plural predication of the ordinary content and, thus, does not further restrict the proposition expressed.
- On the assumption that a homogeneity condition is operative in the interpretation of plural distributive predications (Löbner 1987), there shouldn't be 'some but not all' non-modal plural readings.
 - Dayal reports such readings: *John didn't like whatever Mary ordered but he liked most of it*
 - These are the cases for which she needs to assume that negation scopes over the necessity modal

Global discharge

- Projected alternatives as in (29) remain separate from truth-conditional content
 - They are discharged globally at the assertion level, imposing the condition in (36).
- (36) For free choice assertions $\langle p, Alt(p) \rangle$:
 If $c \cap p \neq \emptyset$, then $(\forall p^{alt} \in Alt(p)) c \cap p \cap p^{alt} \neq \emptyset$
- The alternatives in combination with the condition in (36) result in the free choice implication 'it may be this or that'.
 - The ignorance implication is a pragmatic inference about the reasons behind the speaker's choice to use an expression resulting in the compatibility requirement in (36).
 - Obviously, if it is common ground knowledge who entered the house, then (37) cannot be used felicitously to imply ignorance since the compatibility requirement cannot be satisfied.
- (37) Whoever entered the house last saw what happened.
- You can use (37) felicitously if you have absolutely no idea who entered the house last but also if you have been able to narrow it down to, say, the butler or the gardener.
 - What you cannot do is utter (37) if you know that John was the last person to enter the house but you don't know whether John is the butler or the gardener.
 - Recall that incomparable properties cannot be instantiated by the same individual.

Global discharge and pragmatic reasoning

- The ignorance reading is in fact one in a family of readings that motivate the compatibility requirement in (36): *I don't know which, I won't tell you which, we needn't resolve which.*
 - By using an expression requiring that the context updated with the proposition expressed be compatible with each alternative, the speaker is signalling that she will/can not distinguish between them any further.
 - Ignorance—not being able to pin down more specifically which is the P that Q 'd—is one reason.
 - Unwillingness to divulge any more information, as in hint-type uses, is another.
 - Disagreement between speaker and hearer that can remain unresolved is yet another.
- (38) A: Susan entered the house last.
B: No, JOHN entered the house last.
A: Well, whoever entered the house last saw what happened.

Projection of ignorance implication

- Why does the ignorance implication exhibit the projection properties of presuppositions?
 - It's because of the interaction of the existential presupposition associated with the ι operator in the ordinary truth-conditional content and in the alternatives and the compatibility condition vis a vis the alternatives imposed by global discharge.
 - Suppose, for instance, that p is the proposition expressed by (39) and p_1 , p_2 two alternative propositions having come about from the alternatives to the description *the thing she is cooking*.
 - The requirement imposed by global discharge is that the common ground c updated with p be compatible with p_1 and with p_2 . This means that c updated with p entails (41a)–(41d).
- (39) Whatever she is cooking doesn't smell good at all.
I don't know what she is cooking.
- (40) p : she is cooking something & the thing she is cooking doesn't smell good
 p_1 : she is cooking soup & the soup she is cooking doesn't smell good
 p_2 : she is cooking stew & the stew she is cooking doesn't smell good
- (41) a. She may be cooking soup.
b. If she is cooking soup, the soup she is cooking doesn't smell good.
c. She may be cooking stew.
d. If she is cooking stew, the stew she is cooking doesn't smell good.

Compatibility requirement

- On both local and global discharge of their alternatives, free choice items impose the requirement that each alternative be possible.
- The possibility is world-dependent, metaphysical possibility, when the alternatives restrict propositional content.
- The possibility is dependent on an information state, like a Veltman-style *Might*, when they enter contextual update.

Epistemic Indefinites

- German *irgend-ein/jemand* (Kratzer & Shimoyama 2003); French *un N quelconque* (Jayez & Tovena 2002); Italian *un N qualunque/qualsiasi* (Chierchia 2004); Spanish *algún* (Alonso-Ovalle & Menéndez-Benito 2003)
 - Same implications of ignorance or indifference
 - Same veridical implications
- (42) a. Ich habe irgend jemanden getroffen.
'I (shot at and) hit someone (or other).'
- b. Er hat irgendeine Krankheit.
'He has some disease (or other).'
- c. Irgend jemand hat angerufen.
'Someone called.'
- d. # Ich habe irgendeine Biene getötet.
'I killed some bee or other.'
(no way of individuating among bees)
- (43) Ich habe einfach irgendein Werkzeug aus dem Kasten genommen.
'I simply took out some tool from the box.'
I took out one of the tools from the box.
I could well have taken out any other tool from the box.
- Epistemic indefinites ought to differ from free choice free relatives in principle only in their quantificational force (and the concomitant presence or absence of presuppositions of existence and uniqueness)
- (44) epistemic indefinite with descriptive content property P :
 $\langle \lambda R \lambda Q \lambda w. \exists x. R(w)(x) \wedge Q(w)(x), P, \{P' \mid P' \subset P\} \rangle$
- With Chierchia (2005), we can assume that epistemic indefinites are associated with a scalar implicature
 - Unlike Chierchia's (2005) analysis, no covert modal operator (affecting the ordinary content) needs to be assumed since a free choice implication is consistent with a scalar implicature

– “One consequence of the present approach is that when an existential FCI is not in the scope of an overt modal, if the resulting sentence is somehow acceptable, the presence of a covert modal operator has to be assumed. For otherwise, the implications associated with the indefinite would be inconsistent.” (Chierchia 2005:41)

- It appears that the Italian existential FCIs require local discharge.
- Epistemic indefinites, to the extent that they allow ignorance readings, should be different in their projection properties.
- In downward entailing contexts there ought to be no free choice effect since the plain truth conditional content entails each one of the alternatives.

– In (45) *irgendein* has no free choice effect (S. Kaufmann, p.c.)

- (45) Es ist (ja) nicht so, daß er irgendein Werkzeug aus dem Kasten genommen hat/hätte.
 ‘It’s not like he took some tool from the box (or something).’

4 Free Choice Items as Implicature Suspenders

- Have we built too much into our semantics?
- Shouldn’t we construe universal quantification over alternatives as an implicature of some sort?
- Instead let’s motivate the universal quantification over alternatives as a conventional means of suspending a potential implicature (like e.g. *at least* suspends strengthening scalar implicatures).
- The question ultimately is whether the exclusion of no alternatives is a conventional part of meaning or something that can be plausibly derived via Gricean principles.

Scalar Implicatures

- Scalar implicatures are listener moves based on an ‘informed speaker’ assumption.
- Suspending an implicature is a speaker move preempting a potential listener move.
- Supposing p is the proposition expressed and p_1 an alternative proposition entailing p , a scalar implicature arises from the listener’s move from the state depicted in (46) to the state depicted in (47).

(46)

$\neg p_1$	p_1
p	p

(47)

$\neg p_1$
p

Free Choice Effect

- The free choice effect ought to be the suspension of an implicature by conventional means.
- The relevant implicature ought to be a potential listener move about an information state based on some assumption.
- On the ignorance reading, the listener move is about the epistemic state of the speaker and is based on an ‘informed speaker’ assumption.

Ignorance Reading

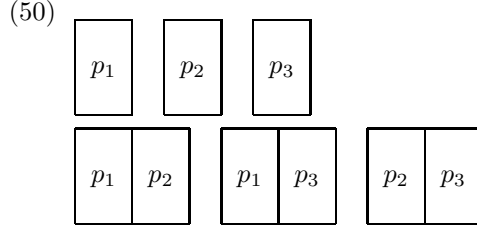
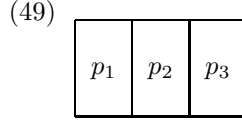
Definite FCIs

- Suppose a sentence of the form *Whatever P Q’d* is uttered in a context where the relevant domain partitioned by the alternatives is set to be the epistemic state B_s of the speaker.

Implicature: speaker can pin down more specifically than she indicated which is the P that Q ’d (this implicature can arise with plain definite descriptions)

$$(48) \quad \exists P' \in \text{Alt}(P) : \forall w \in B_s : \\ \neg P'(w)(ix.P(w)(x)) \text{ (the } P \text{ is not a } P') \\ \text{implying} \\ \neg \exists x.P'(w)(x) \wedge Q(w)(x)$$

- The listener move is to assume that the speaker is more informed than her utterance indicated
 - E.g., the implicature is a potential listener move about the information state of the speaker from (49), based on the plain truth-conditional content of the assertion, to the set of the more informative states in (50)



Free choice effect: speaker conveys that she cannot pin down more specifically which is the P that Q 'd

(51) $\forall P' \in \text{Alt}(P) : \exists w \in B_s :$
 $P'(w)(ix.P(w)(x))$ (the P is a P')
 implying
 $Q(w)(ix.P'(w)(x))$

- By using a free choice item the speaker preempts the potential listener move, e.g., from (49) to any one of the states in (50), thereby indicating her own ignorance

Indefinite FCIs (Epistemic Indefinites)

- Suppose a sentence of the form *Irgendein P Q'd* is uttered in a context where the relevant domain covered by the alternatives is set to be the epistemic state B_s of the speaker

Implicature: speaker can pin down more specifically than she indicated which (kind of) P Q 'd (this implicature can arise with plain indefinite descriptions)

(52) $\exists P' \in \text{Alt}(P) : \forall w \in B_s :$
 $\neg \exists x.P'(w)(x) \wedge Q(w)(x)$

Free choice effect: speaker conveys that she cannot pin down more specifically which (kind of) P Q 'd

(53) $\forall P' \in \text{Alt}(P) : \exists w \in B_s :$
 $\exists x.P'(w)(x) \wedge Q(w)(x)$

A pragmatic motivation for Strengthening?

- It remains an open question whether the universal condition associated with local discharge can be motivated pragmatically.

- What is clear is that it cannot be derived from an assumption of ignorance.
- Kratzer & Shimoyama (2003) and Chierchia (2005) aim to derive the ‘anti-exhaustiveness’ implicature pragmatically.
- To what extent can the ‘anti-exhaustiveness’ implicature be derived on plausible Gricean principles?
- The leap of enlightenment:
 - By having preempted a potential inference from (54) to (55) on the part of the listener about the intended strength of the assertion, thereby indicating ignorance, the speaker is taken to indicate an alternative move, from (54) to (56), thereby signaling complete knowledge.

(54)

D_i	$D \setminus D_i$	D
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(55)

D_i

(56)

D_i	$D \setminus D_i$
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Cancellability

- Appearance of cancellation is not due to the fact that the implicature is conversational but rather a case of the ordinary truth conditional content entailing the enriched content.
 - Kratzer & Shimoyama cite (57) as evidence that the distribution requirement is a conversational implicature.
 - But (57) is used felicitously only if the obligation is tied to different authorities and background conditions. For instance, it can only be used to convey what (58b) conveys, not what (58a) conveys.
- (57) Du musst irgendeinen Arzt heiraten, und das darf niemand anders sein als Dr. heintz.
 ‘You must marry some doctor or other and it can’t be anybody but Dr. Heintz.’
- (58) a. Marry some doctor (# or other) and make sure you marry none other than Dr. Heintz!

- b. To appease your parents you must marry some doctor or other and, as far as I am concerned, you had better marry none other than Dr. Heintz.

5 Conclusions

- Free choice effects do not arise solely out of basic disjunctive meanings.
- Motivated distinction between presuppositional vs. ordinary vs. enriched content.
- Strengthening and Uncertainty as exhibited by free choice free relatives are the result of enriched meaning contributed by the alternatives.
- Global and local discharge of alternatives result in radically different implications (Uncertainty vs. Strengthening).
- The intensionality of alternatives is behind the implicit modality of free choice free relatives.
- Many points of contact with other approaches, especially Chierchia (2005), but drawing the lines differently.