

# Free Choice and Uncertainty

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## 1 Introduction

### The Challenge of Free Choice

Free choice: a family of phenomena that involve combinations of the following  
(Strengthening + Licensing, Strengthening + Uncertainty)

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

- free choice permission  
see ((1a), (2); (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 (subtriggering effect/arguments  
of certain predicates)  
see (3), (4),

**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 (5)

- (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. Yesterday's decree forbade any public gathering.  
b. I will try to take advantage of any opportunity (that comes along).
- (5) a. #Anyone of you is the murderer.  
b. Anyone of you may/#must be the murderer.

#### Another manifestation of the free choice problem

- In English free relatives with *-ever* (*who-/what-/whichever*-phrases) in an episodic, non-modal environment give rise to modal implications.
- In Greek all free relatives (headed by *opjos, opjosdhipote*) can give rise to modal implications in an episodic, non-modal environment.
- 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 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.

#### 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 (Dayal 1997, Iatridou & Varlokosta 1998, von Stechow 2000, Tredinnick 2005, Heller 2005)

- (6) 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 2000)

- (7) 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)

- (8)
- 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 (von Stechow 2000, Tredinnick 2005)

- (9)
- 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/Universal 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.

- (10) Whatever exit you take will get you onto MLK Blvd.
- (11)
- 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)
- Ignorance and Indifference show up consistently in the inventory of readings of FCIs studied by Vlachou (2007)

### Goals of this talk

- Propose an analysis of free choice free relatives
- Show that the analysis naturally extends to epistemic indefinites
- Show that the Ignorance and Indifference implications are the result of the enriched meaning contributed by the alternatives associated with FCIs and the way they are discharged
- Strengthening and Uncertainty are due to local and global discharge of alternatives, respectively

## 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 worlds compatible with the speaker's beliefs in the world of evaluation
  - variation condition: there are distinct i-alternatives
- (12) Dayal's analysis (in von Stechow'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?

- Negation must scope under the universal modal quantifier.  
Dayal allows both scopings for independent reasons.
- (13) 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 Stechow (2000) observes, in embedded contexts epistemic certainty (expected by (12b)) is not part of truth-conditional content, while the implication of epistemic uncertainty projects like a presupposition.
- (14) 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.*
- In hint-type uses, pointed by von Stechow, 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.
- (15) 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 (10):
  - my grounds for asserting (10) 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 (10) if I do not know what exit you will in fact take.

**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 (24a))
  - and provided the presuppositional content becomes truth-conditional content under embedding if the modal base is counterfactual (consider (24b))

(16) **Ignorance analysis:**

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

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

(17) **Indifference analysis:**

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

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

### Variation presupposition is not strong enough

- The variation presupposition in (12a)/(16a) is not sufficient to account for the infelicity of (7a):
    - 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 (7a) 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 (18a) and (18b) (only (18b) is predicted infelicitous, while in fact both are).
- (18) 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 (10), would be a contextual entailment: the result of presuppositional and truth-conditional content taken together.
- But an assertion of (10) 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:

(19) 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:

- (20) 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)

(21) 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?

(22) 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)

(23) 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 ((24b) vs. (24a)).
- (24) 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
- (25) can be used to simply commit the speaker to having returned all the books the addressee lent her; it can also give rise to the implication that the speaker does not remember what books the addressee lent her
- (26), pointed out by Dayal, shows that a free choice free relative can be used in a context where no ignorance or indifference is presupposed

(25) I’ve already returned whatever books you’ve lent me.

(26) 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 Enrichment and Alternatives

#### Main Idea

- In line with a lot of recent work (Aloni 2002, 2006; Kratzer & Shimoyama 2002; Chierchia 2006; Menendez-Benito 2005; Fox 2006) take FCIs to be associated with alternatives and the implications they give rise to to be the result of operations on the alternatives
- Get at the notion of *don't know/care what* not via potential referents of the description but via alternative, more specific descriptions.
- Allow for local discharge as well as projection of the alternatives

#### Enrichment operations

Chierchia's (2006) enrichment operators:

- (27) a.  $E(\langle p, C \rangle) = p \wedge \forall q \in C[p \subseteq q]$ , where  $C = Alt(p)$   
 b.  $O(\langle p, C \rangle) = p \wedge \forall q \in C[q \rightarrow p \subseteq q]$ , where  $C = Alt(p)$   
 (Exhaustivity)  
 c.  $O^-(\langle p, C \rangle) = p \wedge \forall q, q' \in C[q \rightarrow q']$ , where  $C = Alt(p)$   
 (Anti-exhaustivity)

- Enrichment operators can apply at the propositional level or the assertion level
- Exhaustivity at the assertion level, where the alternatives are totally ordered by semantic strength (entailment), gives rise to scalar quantity implicatures; Chierchia's (27b) corresponds to Krifka's (1995) (28) at the assertion level
- Anti-exhaustivity at the assertion level gives rise to uncertainty implications

(28)  $ScalAssert(\langle p, Alt(p) \rangle, c) =$   
 $\{w \in c \mid w \in p \wedge \neg(\exists p' \in Alt(p))w \in p' \wedge c \cap p' \subset c \cap p\}$

#### Semantics

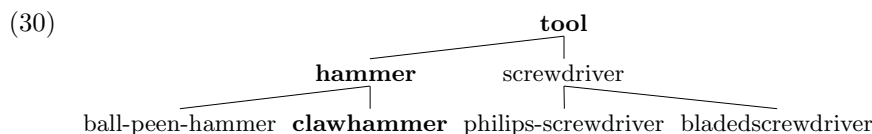
- Quantificational force: Free relatives are definites (Jacobson 1995; Dayal 1995, 1997; Rullman 1995; von Stechow 2000; Giannakidou & Cheng 2006)
- For an FR with descriptive content a given property  $P$ , the alternatives are more specific properties  $P'$  along a contextually given dimension
  - 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 (29) with the property hierarchy as in (30) 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*.

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



### Ordinary content vs. Alternatives

- Take the semantic value of FRs to be a BFA-structure, as in (31). This is the invariant part of the meaning.
- (31) *whatever*  $\bar{N}$  ( $\bar{N}$  denoting property  $P$ ) :
- $$\langle \lambda R \lambda Q \lambda w. Q(w)(\iota x. R(w)(x)), P, \{P' \mid P' \subset_{At} P\} \rangle$$
- ( $P' \subset_{At} P$  means that  $P'$  is an atomic subproperty of  $P$ )
- 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
  - The alternatives can also be discharged locally and incorporated into ordinary 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, 2006) implicature freezing
- (32) Application with projection of the alternatives (pointwise application):
- $$\langle \lambda w. Q(w)(\iota x. P(w)(x)), \{ \lambda w. Q(w)(\iota x. P'(w)(x)) \mid P' \subset_{At} P \} \rangle$$
- (33) Application with local discharge of the alternatives:
- $$\lambda w. Q(w)(\iota x. P(w)(x)) \wedge (\forall P' \subset_{At} P)(\exists w' \in \mathcal{WS}(w, P')) Q(w')(\iota x. P'(w')(x)),$$
- 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 (we will assume the set is always non-empty).
- (34) *whatever tool was in front of me*:
- $$\langle \lambda R \lambda Q \lambda w. Q(w)(\iota x. R(w)(x)), tool, \{P' \mid P' \subset_{At} tool\} \rangle$$
- (35) *I grabbed whatever tool was in front of me*:
- a.  $\langle \lambda R \lambda w. grab(w)(\iota x. R(w)(x))(me), tool, \{P' \mid P' \subset_{At} tool\} \rangle$
  - b.  $\langle \lambda w. grab(w)(\iota x. tool(w)(x))(me), \{ \lambda w. grab(w)(\iota x. P'(w)(x)) \mid P' \subset_{At} tool \} \rangle$   
(application with projection)
  - c.  $\lambda w. grab(w)(\iota x. tool(w)(x))(me) \wedge (\forall P' \subset_{At} tool)(\exists w' \in \mathcal{WS}(w, P')) grab(w')(\iota x. P'(w')(x))$   
(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 *WS* ensures that the universal condition on alternatives can be satisfied.
- Embedded contexts is where the effect of local discharge will be visible (consider (24)).

## Negation and local discharge

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

- (37) 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. (38a) does not have a reading equivalent to (38b) or (38c)
- (38) 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.

### Global discharge

- Projected alternatives as in (32) remain separate from truth-conditional content
  - They are discharged globally at the assertion level and are operated on by the anti-exhaustivity operator  $O^-$
  - The condition on the alternatives in (39) is a generalization of the Genuineness Constraint appealed to by Zimmermann 2000 and Simons 2005 for disjunction.
- (39)  $O^-(\langle p, Alt(p) \rangle, c) = c \cap p$ , provided  $(\forall p^{alt} \in Alt(p)) c \cap p \cap p^{alt} \neq \emptyset$  if  $c \cap p \neq \emptyset$
- 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 (39).
  - Obviously, if it is common ground knowledge who entered the house, then (40) cannot be used felicitously to imply ignorance since the compatibility requirement cannot be satisfied.
- (40) Whoever entered the house last saw what happened.
- You can use (40) 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 (40) 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 (39): *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.
- (41) 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  $\iota$  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 (42) 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 (44a)–(44d).
- (42) Whatever she is cooking doesn't smell good at all.  
*I don't know what she is cooking.*
- (43)  $p$ : 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

- (44) 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.

### Anti-exhaustivity as a 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 when they enter contextual update.

### Epistemic Indefinites

- German *irgend-ein/jemand* (Kratzer & Shimoyama 2003); French *un N quelconque* (Jayez & Tovenar 2002, 2006); Italian *un N qualsiasi* (Chierchia 2006); Spanish *algún* (Alonso-Ovalle & Menéndez-Benito 2003)
  - Same implications of ignorance or indifference
  - Same veridical implications
- (45) 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)
- (46) 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)
- (47) epistemic indefinite with descriptive content property  $P$ :  
 $\langle \lambda R \lambda Q \lambda w. \exists x. R(w)(x) \wedge Q(w)(x), P, \{P' \mid P' \subset_{At} P\} \rangle$

- With Chierchia (2006), we can assume that epistemic indefinites are associated with a scalar implicature
- Unlike Chierchia’s (2006) analysis, no covert modal operator (affecting the ordinary content) needs to be assumed since a free choice implication is consistent with a scalar implicature

### Cancelability

- 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.
- In downward entailing contexts there can be no free choice effect since the plain truth conditional content entails each one of the alternatives.

– In (48) *irgendein* has no free choice effect, and is rather interpreted like an NPI (S. Kaufmann, p.c.)

(48) 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).’

- Kratzer & Shimoyama cite (49) as evidence that the distribution requirement is a conversational implicature.
- But (49) 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 (50b) conveys, not what (50a) conveys.

(49) 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.’

(50) 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.

## 4 Conclusion

- 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.

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