FREE CHOICE INDEFINITES AND SERIAL UNIVERSALITY EFFECTS

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Abstract: The paper focuses on two contexts which license universal free choice items: future sentences and episodic subtrigged sentences, where the universal flavor of free choice items is dependent on temporal structure. Generally, the universal flavor of free choice items is an outcome of the constraints they impose on the interpretation of individual alternatives. The aim is to show that the two environments produce a serial universality effect (in the sense of chronological order): the free choice item is constrained to vary with respect to the values for the variable ranging over entities and with respect to an event variable. The alternatives are distributed in the time-world segments of a branching *W× T* framework. The non-specificity of the free choice interpretation amounts to domain shift, which, in its turn, is guaranteed by non-settledness within a metaphysical modal base.

Keywords: serial universality, metaphysical modal base, branching world, non-settledness, domain shift.

1. Introduction

1.1 Two universal flavors

The topic of the paper[1] are universal free choice items (FCI), including English *any*, Catalan *qualsevol*, French *n'importe quel* and *tout*, Romanian *orice*[2]. The view supported here is that these FCIs are Heimian indefinites (Heim (1982, 2002)) with special constraints which derive their quodlibetic non-specificity. FCIs introduce individual-level alternatives which expand into propositional alternatives (see Kratzer and Shimoyama (2002)) and obey a constraint of maximality on the set of alternatives, which is responsible for the universality effect. Quodlibetic non-specificity amounts to prohibiting any alternative from being either preferred or dismissed. A closer look at the pattern of distribution indicates that there are two types of universality effects, which I will call parallel and serial. The latter case is sensitive to the distribution of individual alternatives on a time-world axis. It is this class of contexts which constitute the focus of the rest of the paper. Parallel and serial universality are illustrated in (1) and (2) respectively:

(1) You may take any book.
   a. ANYx (MAY (book(x) Ù take (you,x))
   b. Maximality: [[book]] = {a, b, c}; ALTANY = {You may take a, You may take b, You may take c}

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[1] This work was possible with the financial support of the Sectoral Operational Programme for Human Resources Development 2007-2013, co-financed by the European Social Fund, under the project number POSDRU/107/1.5/S/80765.

[2] Horn (2005), Chierchia (2006), Chierchia (forthcoming), Dayal (1998, 2009, 2013) for English; Quer (1998, 2000) for Spanish and Catalan, Jayez and Tovena (2005) for French, Farkas (2005) for Romanian.

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c. parallel universality effect:
∃w', wRw': You take a;
∃w", wRw": You take b; → taking all three not explicitly allowed
∃w"', wRw"': You take c.

Assuming the model contains only three books (a, b and c), maximality requires that the alternative set should contain propositions in which the free choice DP is assigned each of these individual values. The parallel universality effect is obtained by the application of the meaning of the possibility modal *may* to each of the propositions. For each alternative, there is a world in which it is true.

(2) After the talk, the professor will answer any question.
a. ANYx,e (WILL (question(x, e) ∧ answer (you, x, e'));
b. Maximality: ∀w' ∈ MB_{FUT}, if x is a question asked in w', then the professor answers x;
c. serial universality:
w': question a asked and answered; question b asked and answered; question c asked and answered; no other question asked;
w": question a asked and answered; question b asked and answered; no other question asked;
w"': question c….

For (2), maximality requires that, for every event of a question coming up, there should be an event of answering that question. In no future inertia world can a question be left unanswered and it is of course possible that more than one question is asked in any of these worlds. An important distinction to remark is that (1) does not involve domain shift (the denotation [[book]] is constant across worlds. In (2), however, domain shift is obligatory. D-linking is unproblematic when domain-shift is not required (3), but not when domain shift is obligatory (4).

(3) You may take any of these books. We have a, b and c.
(4) ??Next, I will answer any of the questions on the list. The questions are a, b and c. The answers are…

Other cases of serial universality effect on FCIs are subtrigged episodic sentences (5) and habituals (6)[3]. Subtrigging is defined in section 4.1.

(5) John spoke to any woman *(who approached him at the party).
(6) When she was in high-school, Mary read any assignment carefully.

(5) does not mean that John spoke to a woman, whoever she might be, therefore it is not a case of epistemic uncertainty. If epistemic uncertainty were the relevant factor, (5) would

[3] Habitual sentences will be left for another occasion, but see Deo (2009) for an implementation in a *W´T* framework.

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be just as felicitous as an existential FCI with a covert epistemic operator, such as Romanian *oarecare*, and wouldn't require the presence of a relative clause:

(7) Ion a discutat cu o femeie oarecare (pe care a văzut-o la petrecere).
Ion has discussed with a woman any (*pe* whom has seen her at party
'Ion spoke to some woman (he saw at the party).'

Moreover, (5) conveys that John spoke to more than one woman and that this occurrence was not accidental: had other women come up to him, he would have spoken to them as well. Given all these facts, the type of universality effect at work here is serial.

The question to ask at this point is: what are the unifying properties of contexts with serial universality FC effects? It is useful to first present the notion of "domain shift" (or "domain variation"), as discussed with respect to French FCIs *n'importe quel* and *tout* in order to answer this question.

1.2 The universality effects of FCIs and domain variation: French *tout* and *n'importe quel*

The French FCIs *tout* and *n'importe quel* (Jayez and Tovena 2005) exhibit the contrast between parallel and serial universality. *N'importe quel* has a wider distribution and exhibits both types of universality (parallel and serial), as in (8) and (9). *Tout* has a much narrower distribution and, in future and imperative contexts, requires domain shift. It is exclusively associated with a serial type of universality.

(8) Ce soir, je lirai n'importe quel journal / tout journal pour me
tonight I read-FUT NIMPQ newspaper / TOUT newspaper for myself
détendre.
to relax
'Tonight, I will read any newspaper to relax.'

(9) Demain, nous exploiterons n'importe quelle / toute occasion.
tomorrow we exploit-FUT NIMPQ / TOUT occasion
'Tomorrow, we will take advantage of any opportunity.'

In (8), the speaker intends to read a single newspaper and intends to pick at random (parallel universality). This is compatible with an interpretation in which the set of newspapers is constant across worlds. Thus, D-linking is allowed: *Tonight, I will read any of these newspapers to relax. N'importe quel* and *any* correctly reflect this scenario, but *tout* does not. In (9), it is not established at the moment of utterance what occasions will be available tomorrow, and all occasions made available during that time span must satisfy the main predicate condition (being taken advantage of). Domain shift is present (the variation within the extension of the predicate *occasion* across worlds).

The same contrast is observable with imperatives:

(10) Prends n'importe quelle carte / *toute carte.
take NIMPQ card/ TOUT card
'Take any card.'

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(11) Punis n'importe quel / tout délit.
punish NIMPQ / TOUT misdemeanor
'Punish any misdemeanor.'

In habitual and subtrigged episodic sentences, which are contexts of serial universality, both French FCIs are allowed:

(12) A l'époque, n'importe quelle / toute commande était habituellement traitée en
at the time NIMPQ / TOUT order was usually treated in
moins de 48 heures.
less of 48 hours
'At that time, FCI order was usually processed in less than 48 hours.'
(13) Tout étudiant qui a triché a été renvoyé.
TOUT student who has cheated has been excluded
'Any student who cheated was excluded.'
(14) Il a lu n'importe quel livre au programme.
he has read NIMPQ book at.the reading list
'He read any book on the reading list.'

Having looked at the two French FCIs, it is important to notice that, among the class of so-called universal FCIs, there is at least one, *tout*, which seems to exclusively exhibit serial universality and to require domain shift for licensing (a characteristic first noticed by Jayez and Tovena). Whether or not *tout* is a universal quantifier[4], I concur with Jayez and Tovena (2005) that *n'importe quel* is part of the class of FC indefinites, together with English *any*, Greek *opjosdhipote*, Italian *qualunque*, Spanish *cualquiera* and Romanian *orice* among others.

The question brought up at the end of section 1.1 – what mechanism triggers (for habitual, subtrigging and future sentences) serial universal readings of FC indefinites? – will be addressed in the remainder of the paper.

1.3 The common features of serial universal contexts

Serial universal interpretations arise whenever the FCI combined with an NP denoting an event (*opportunity* in (15)), implicitly associated with an event (*question* in (16)) or containing a restrictive relative clause (17):

(15) Tomorrow, we will take advantage of any opportunity.
(16) After the talk, the professor will answer any question.
(17) John spoke to any woman who approached him at the party.

[4] Defended in Kleiber and Martin (1977), Paillard (2001), Tovena and Jayez (1999), Jayez and Tovena (2005).

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For certain[5] event-denoting nouns, the FCI is even licensed in simple episodic sentences (no subtrigging is necessary, against the general rule stated in section 1.1):

(18) A fost în casa noastră la orce întâmplare.
'He/ she was in our house at any event.' (O. Alexandrescu, *DLR*: 2590)

The common feature in all these contexts is that the NPs have an eventive component which induces domain shift and domain shift is associated with temporal branching. Intuitively, the "coming into being" of an occasion (or a question) in *w* at *t* is associated with a branching within the metaphysical modal base. The future histories differ from *w* in that either no event of the type *occasion* or *question* takes place at *t* in some of these worlds or a different event of the same type does.

An event is not metaphysically settled at a time *t* in a world *w* if, according to what *w* is like at *t*, the event may or may not occur. Non-settledness is a prerequisite for the free choice condition (for instance, in (16), the event of being asked a question guarantees that the professor will answer it). This explains why FCIs, which require variation, are nevertheless compatible with universal modals (such as future and deontic necessity). It also derives the rule-like (or non-accidental) interpretation of these FC sentences: the serial universality expresses a temporally-bounded regularity.

The following sections are dedicated to the explanation of the distribution of FC alternatives within a branching time-world frame. The contexts of interest will be confined to episodic subtrigged sentences and future sentences, where the evaluation takes place against a metaphysical modal base. The FC effect is of serial universality. The event associated with the free choice DP is not settled (historically necessary) and guarantees the occurrence of the VP-event. That is to say, a hidden conditional structure is at work. This amounts to a time-dependent causal link between the pairs of events (the ones introduced by the noun/ relative clause and the ones introduced by the main predicate).

2. Metaphysical modal bases and historical necessity

The hypothesis explored in this paper is that serial universality is interpreted w.r.t. a metaphysical modal base. Individual alternatives co-vary with segments of histories (or world-time segments). Segments may be shared by more than one world (equivalent worlds), but cannot be shared by all of them (we need domain shift). The FC variation condition is satisfied by forward branching leading to domain shift. For instance, (19) receives the interpretation below:

(19) For the next twenty minutes, the lecturer will answer any question.
for every continuation of w in which a question is asked, there is another branch in which a different question is asked, and there are also branches in which no

[5] Determined, historically necessary events do not qualify because no domain shift is allowed:

(i) ??Next week, I will enjoy any sunset.

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question is asked. One may say that the asking events are not settled, but that the answering events are.

2.1 Metaphysiccal modal base (Condoravdi 2002)

The distinction between metaphysical and epistemic modal bases is needed in order to explain the behavior of non-root modals. (20) has two readings, corresponding to two scopal positions of the perfective aspect:

(20) John might have won the game.
a. PRES (MIGHT (PERF (John win the game))) epistemic
b. PRES (PERF (MIGHT (John win the game))) metaphysical

Modals have future orientation by default, but perfective aspect in the scope of a modal produces a back-shifting effect.

The epistemic modal in (20a) sets utterance time as the modal perspective. The default forward-directed interpretation is overridden by the perfective aspect operator in the scope of the modal. Thus, the orientation of the modal is backward-shifted. John's winning the game at a time anterior to the time of evaluation is consistent with the information available to the speaker. The issue of his having won or not is actually settled, the speaker just doesn't know how.

The metaphysical modal for the past in (20b) receives a different interpretation. The untensed sentence *John win the game* must be verified in an interval that is posterior to the time of the modal perspective. The wide scope of the perfective over the modal translates into a back-shifting of the time of the modal perspective: we are now located in a world whose past included the unactualized possibility of winning the game (the untensed sentence in the scope of the modal is still forward-oriented). At some point in the past, the world was such that it could evolve into a world in which John won the game. Crucially, at that point, the issue had not been settled, even though now, in the actual *w*, it is, therefore the interpretation is counterfactual.

A metaphysical modal base describes the way the actual world may turn out to be, given a set of live possibilities at the given point of evaluation, called the modal perspective. The live possibilities depend on a series of circumstances, which may be chance events or human actions.

Settled events are historically necessary. Historical necessity has to do with whether an event is seen as settled at a given time of evaluation *t*: a sentence is historically necessary if it is true at *t* regardless of what the future is like[6].

The felicity condition for a metaphysical modal base is: from a given perspective, the past and present are settled (determined), while the future is not settled (indeterministic). Metaphysical modal bases, unlike epistemic ones, are forward-branching – only the past is historically necessary, where "the past" is determined with respect to the modal perspective. For instance, in (20b), it was not historically necessary

[6] See Thomason (2002).

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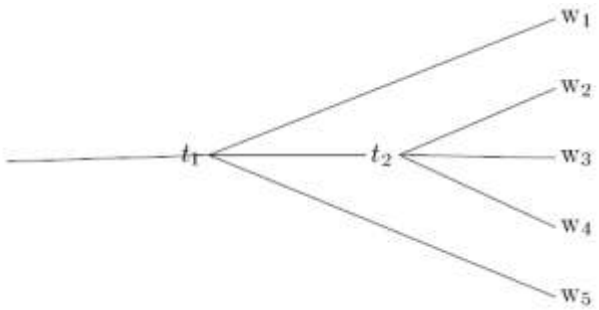
from a past modal perspective that John would win. The actual world is a development in which he did not, hence the counterfactual interpretation.

Metaphysical possibility/necessity is evaluated within a *T´W* frame, which is construed as follows. First, worlds are complete histories through time. Second, worlds are forward-branching (they have identical pasts, but distinct futures). Third, pairs of worlds may be characterized via a three-place (*T´W´W*) relation of equivalence relative to a time *t*, where "<" is a temporal ordering relation. The relation of equivalence is defined below:

(21) Relation of equivalence between worlds:
w ≅ t w' iff for any w, w' ∈ W and t, t' ∈ T, if w ≅ t w' and t'< t, then w ≅ t' w'
→ all worlds equivalent at t are also equivalent at any previous moment t'

The graphical representation in Condoravdi (2002), represented here as (21), is helpful in picturing a *T´W* frame: w_1, w_2, w_3 w_4 and w_5 are equivalent at t_1 ($w_1 \cong t_1$ $w_2 \cong t_1$ $w_3 \cong t_1$ w_4); w_2, w_3 and w_4 are equivalent at t_2 ($w_2 \cong t_2$ $w_3 \cong t_2$ w_4); the forward-branching base is represented in (22):

(22)



(23) $MB_{MET}(w, t) = \{w': w' \cong t\ w\}$.
= in (21), w_2, w_3 and w_4 are historical alternatives at t_2; w_1 and w_5 are not.

A metaphysical modal base consists of historical alternatives available at the time of evaluation – see (23) above. In order to clarify the mechanism, an additional notion needs to be introduced, that of cause.

2.2 Causes as non-settled events (von Kutschera 1993)

According to von Kutschera (1993), working in a branching time-world framework, a causing event is defined as an event which is not settled (determined) and whose occurrence first guarantees the occurrence of the effect. The effect is a necessary consequence of an event which in turn didn't occur necessarily (where necessity is to be understood as historical necessity).

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The truth value of a sentence about the future does not just depend on the present state of the world, but on its further development (if in all future continuations, event E occurs, then E is historically necessary from the present perspective). Propositions (intensions of sentences) are subsets of $W\acute{}T$, i.e. sets of world-time pairs. Events have well defined beginning and endings and occur at most once in a world. Here are the relevant definitions:

(i) The state of affairs that E occurs: $E^0 := \{w: \exists i(w_i \in E)\}$

(ii) E is determined in *w* at *t*: $DET(E,w,t) := W^{w(t)} \subset E^0$

(iii) In w, E is determined from its beginning: $DB(E,w) := \exists i(w_i \in E \wedge D(E,w,i_1))$ where *i* is a temporal interval and i_1= the first point of i, its beginning;

A cause is defined as follows: in a world *w*, event E causes event E' iff there is an interval *i* such that E takes place in *w* at *i* and, for all *w', i'* in which E also occurs, E' is determined from its beginning and E' is not determined from the beginning of E[7]:

(24) $CAUSE(w, E, E') := \exists i (w_i \ E \wedge \forall w', i' (w' \in W^{w(i1)} \wedge w'_{i'} \in E \rightarrow DB(E', w') \wedge \neg D(E',w',i1')))$

In words, a cause in *w* is an event occurring in w, hence $\exists i (w_i \in E)$ and the occurrence of E' is not guaranteed until E occurs, meaning that:

(i) it is certain that E' will occur if E occurs;

(ii) certainty is understood here as time-dependent necessity referring to the beginning of E in *w*, i.e. to i_1;

(iii) in view of the circumstances obtaining in *w* and i_1, E' must occur in all worlds w' in which E does, no matter how the world goes on ($w'_{i'} \in E \rightarrow DB(E', w')$).

That the occurrence of E' was not guaranteed until E occurred also means that in w and i_l it is not yet certain, i.e. necessary, that E' occur ($\neg D(E',w',i_1')$; the condition is satisfied due to the fact that the cause E is not determined before it begins ($\neg DB(E,w)$).

3. Future modality and free choice

3.1 Some intuitions

(25) During the next twenty minutes, John will answer any question.
= in the time interval of twenty minutes beginning with t_0 (the time of utterance), the event of someone asking a question x (P(e)) has the effect of the lecturer answering x (Q(e')).

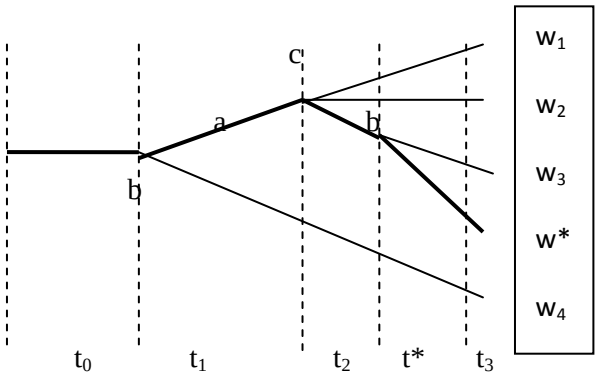
One may say that the occurrence of question x is not settled in the worlds of evaluation. In the future histories where it does occur, it guarantees the occurrence of the effect Q(e'), which amounts to time-dependent necessity of the effect given presence of the cause[8].

[7] i_1, i_2… are intervals of the form $[t_1, t_2]$, where $t_2 < t_2$. An event may be defined as a set E of segments w_τ of worlds, where w_i is the set of all world states (WSs) w(t) with $t \in i$.

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The modal base for (25) is given below:

(26)



a. The following P-events occur:
question *a* asked at [t_1, t_2] in w_1, w_2, w_3 and w* (but not in w_4);
question *b* is asked at [t_1, t_3] in w_4;
question *c* is asked at [t_2, t_3] in w_1;
question *b* is asked at [t_2, t_3] in w_3.

b. The following Q-events occur:
question *a* is answered in w_1, w_2, w_3 and w* before t_3;
question *c* is answered in w_1 before t_3;
question b is answered in w_3 before t_3;
question *b* is answered in w_4 before t_3.

c. Outcome (possible questions = {a, b, c});
w_1 → questions: {*a*,*c*}; answers: {*a*,*c*};
w_2 → questions: {*a*}, answers: {*a*};
w_3 → questions: {*a*, *b*}; answers: {*a*,*b*};
w* → questions: {a, b}; answers {a};
w_4 → questions: {*b*}; answers: {*b*}.

As can be seen in (26a-c), all possible questions are answered in some situation. The worlds fluctuate with respect to answered questions, therefore they satisfy the conditions for variation assumed to be defining for FCIs in certain FC accounts[9]. Still, the modal base doesn't correctly describe a FC situation – w* is clearly undesired, but not predicted to be excluded by FC accounts.

Settledness, rather, seems to play a role. The answering of question *b* is not determined after its coming into existence on the branch containing w_3 and w*. Even though the event of asking *b* occurred before t*, the event of answering *b* is not settled (there are two live options) and this is why w* does not correctly describe a free choice

[8] Not to be confused with either analytical or nomological necessity (see Kutschera 1993 for the distinction).
[9] For Giannakidou (2001), the FC component is variation over individual alternatives; for Menendez-Benito (2005), exhaustivity; for Jayez and Tovena (2005), non-individuation, Chierchia (2006) employs domain-variation, Dayal (2009) introduces the concept of fluctuation, etc.

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scenario. If one expects a regularity of the form "The asking of x guarantees the answering of x in [t_1, t_3]", then it is not surprising that the presence of w* is disturbing.

At least in the cases of serial universality, it seems that FCIs do not involve constraints on individual alternatives only, but on individual-situation pairs of alternatives (as in Dayal 1998 and Farkas 2005). One needs to observe that the same event (the asking of b) occurs earlier in w_1 and w_3, and the FCI projects alternatives for both occurrences.

Let us mark the differences in the present treatment from Dayal's account. First, the FCI is not a universal quantifier with intrinsic modal force. Rather, an FCI requires a modal operator for its distribution with temporally sequenced universality effects. As in all FC contexts, the propositional alternatives must be satisfied independently. Here, this distribution requirement is met by branching[10], and we are dealing with time-dependent causation. The FCI with serial universality expresses a temporally restricted regularity.

In (26), the rule is that John answers questions; the events which guarantee it are the actions of a contextually restricted set of agents (the audience), which may decide to ask one questions or refrain. Chance events are also viable causes, due to non-settledness (they are not pre-determined occurrences):

(27) Your mistake caused a lot of trouble.
(28) Any spelling mistake will lead to the deduction of points.

3.2 The interpretation of future sentences

(29) John will answer any question tomorrow.

At t_0, *w*, the modal base contains all the worlds which coincide with one another up to that point. Assume the future options are w_1, w_2, w_3 and w_4, as described in (26) above.

(30) a. Definition of a metaphysical modal base:
MB(w, t) = {w': w' $\cong_t$ w}
b. MB(w,t_0) for (29) = {w_1, w_2, w_3, w_4} – the set of worlds equivalent at t_0.

Any takes wide scope and contains an entity and an event index, which introduce the alternatives in c:

(31) $ANY_{x, E}$ [$\forall w_i$' (w' ∈ MB(w,t_0)) [w_i' ∈ E → $\exists w_j$' ∈ E' ∧ j ⊆ [now,_] ∩ tomorrow]]
a. E = the set of world-time segments w_i, each corresponding to the unique instantiation of asking question x in w;
b. E' = the set of world-time segments w_j corresponding to the unique instantiation of answering question x by the lecturer in w;
c. $ANY_{x, E}$ = {John answer in E_1' *a* asked in E_1, John answer in E_2' *b* asked in E_2, John answer in E_3' *c* asked in E_3}.

[10] I do not discuss other types of modality, but observe that serial universality is also present in universal modality. A sentence like *You must pick any flower you see* also requires a pairing of individuals and situations.

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The formula above does not prevent an undesirable scenario in which a certain E occurs at one time or another in all worlds (a settled event). The interpretation for (25) is actually stronger, involving a covert conditional structure which expresses metaphysical causation: CAUSE(w', E, E'). The asking precedes the answering but happens after t_0, therefore is not determined at t_0. Whenever it occurs, the answering also occurs in all the histories evolving from the time of asking. Each alternative obeys the following conditions. First, in all w' where E_1 occurs, question *a* is answered in E_1'. Second, in all w' where E_2 occurs, question *b* is answered in E_2'. Third, in all *w'* where E_3 occurs, question *c* is answered in E_3'. E_2 (the asking of *b*) can be instantiated at different times in different worlds. This allows for it to surface at an interval *i* in w_3 and at another interval *i'* in w_4 and obey the causal condition that the asking of *b* guarantees the answering of *b* by John.

4. Subtrigged sentences

4.1 Definition and characterization

Subtrigging is a phenomenon first pointed out by LeGrand (1975), where it is described as a rescue mechanism for FCI *any* in episodic sentences. The rescuing factor is the presence of a relative clause inside the FC-phrase. Without it, the sentence is anomalous:

(32) *Ieri, la petrecere, Ion a vorbit cu orice femeie.
yesterday at party Ion has spoken with FC woman
*'Yesterday at the party, Ion talked to any woman *(who came up to him).'

(33) Ieri, la petrecere, Ion a vorbit cu orice femeie care
yesterday at party Ion has spoken with FC woman which
l- a abordat.
him has approached
'Yesterday at the party, Ion talked to any woman who came up to him.'

I will enumerate four important characteristics of these contexts. First, the FC-phrase cannot be D-linked, so partitive constructions are excluded:

(34) ??Maria a citit oricare din cărţile pe care i le- a recomandat
Maria has read FC from books-the PE which to him them has recommended
profesorul.
teacher-the
*'Maria read any of the books which the teacher recommended.'

This is an indicator that subtrigging requires domain-shift, just as future sentences do. D-linking is excluded because the construction expresses a past temporally-bound regularity: for a certain past interval, if the teacher recommended a book, Mary would

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read it and, had the teacher, by chance, decided to make different recommendations, Mary would have read those.

Secondly, subtrigged sentences are characterized by non-accidentality (also referred to as attributivity and conceptual dependency[11]). Roughly speaking, the property expressed by the relative clause is relevant for the matrix predication. Ion's pattern of behavior in (33) suggests that if someone was a woman and came up to him, he engaged in a conversation. The correlation may be an exemplification of a general trait of John's or of a transitory disposition (say, because he was bored). The correlation expressed by the noun and relative clause, on the one hand, and by the main predicate, on the other, is non-accidental. For the same reasons, (35) is difficult to interpret, because it is hard to discover a non-accidental link between the two eventualities[12]:

(35) ??By a strange twist of fate, any boy John passed by yesterday afternoon wore a blue shirt.

The third feature of subtrigged sentences is temporal dependence. The tense of an eventive verb in a subtrigged FC sentence must be interpreted as anterior to the matrix tense (not the case for relative clauses in general: *John had spoken a week ago with the boy who visited us yesterday*), which rules out the inverted time relation in (36). The substitution of *any* with *every* produces a perfectly acceptable sentence, (37).

(36) *John had called last week any woman who attended the party yesterday.
(37) John had called last week every woman who attended the party yesterday.

The fourth feature is serial universality. One piece of evidence in favor of this view is that subtrigging is not required if the FCI modifies an eventive noun:

(38) A fost în casa noastră la orce întâmplare.
'He/ she was in our house at any event.' (O. Alexandrescu, *DLR*: 2590)

4.2 The interpretation of subtrigged sentences

To account for universality and non-accidentality, many authors[13] have assigned an underlying conditional structure to subtrigged sentences. The relative clause is indispensable because it functions as the restriction of the covert conditional operator. Quer (1998, 2000) and Giannakidou (2001) suggest an analysis of subtrigging as an underlying conditional structure, where the content of the relative clause functions as the restriction of the implicit conditional operator:

[11] The notion of attributivity is used in the sense of Donnellan (1966), Quer (1998) and Giannakidou (2001) mention it as a requirement for the felicity of subtrigging; Jayez and Tovena (2005) challenge the claim that attributivity constitutes a necessary or sufficient condition for subtrigging and prefer the notion of contextual dependency.
[12] This is the English translation in Jayez and Tovena (2005) for an equally infelicitous French example with FCI *tout*.
[13] Dayal (1998), Quer (1998, 2000), Giannakidou (2001), Dayal (2013), Chierchia (forthcoming) a.o.

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(39) a. John talked to any woman who came up to him.
b. ∀w, x [[**woman** (x, w) ∧ **came-up** (x, j, w)] → **talk-to** (j, x, w)]

The first question that comes to mind is what sort of worlds are considered. If all the worlds in the common ground are considered, then the fluctuation condition on FCIs requires that (39b) should express epistemic uncertainty (this is the route taken in Chierchia forthcoming). Then, the modal base projected at the time of utterance contains epistemic versions of the past. The time of the modal perspective is posterior to the time of evaluation, thus the modals base cannot be metaphysical because everything preceding the modal perspective is historically necessary. I have already offered arguments against this view in section 1.1. Another would be that in (40), where the subject is also an epistemic agent, the FC-phrase clearly conveys something other than epistemic uncertainty as to the actual women I talked to.

(40) At the party, I talked to any woman who came up to me.

Quer's (2000) solution interprets the two properties of subtrigged *any* discussed in Dayal (1998), attributivity and iterativity to argue that (most of the) subtrigged sentences are not actually episodic, but habitual or characterizing. The habitual reading is marked by the imperfective aspect in Spanish and Catalan, but is not visible in English, which employs the simple past. In the Catalan example (41), *speak* and *approach* are marked with past imperfective morphology in Catalan, but not in the English translation. Nevertheless, the Romanian examples in section 4.1 were all built with the perfective auxiliary. Notice that Romanian can also employ the imperfective, corresponding to past characterizing sentences, as in (42).

(41) Parlava amb qualsevol dona que se li apropava.
talk-IMPF.3SG with any woman that REFL.3SG him/her approach-PF.3SG
'S/he talked to any woman who approached her/him.'
(42) Orice femeie care auzea ştirea contribuia de obicei la campanie.
FC woman who hear-IMPF.3SG news-the contribute of custom at campaign
'Any woman who heard the news usually contributed to the campaign.'

The route taken here is to assume that the subtrigged configuration is indeed available (at least for English and Romanian) and that it involves a conditional structure, but it is not characterizing or habitual[14]. Subtrigged sentences express a past regularity bound to the reference interval: for a limited interval in the past, events of women coming up to John guaranteed events of his talking to them. From the past perspective where the modal base is projected, the coming of women events are not settled. The temporal ordering is the same as for Condoravdi's (2002) future-oriented modals for the past, associated with the following scoping order:

[14] See the discussion of (33) above: John talking to the woman because he happened to be bored.

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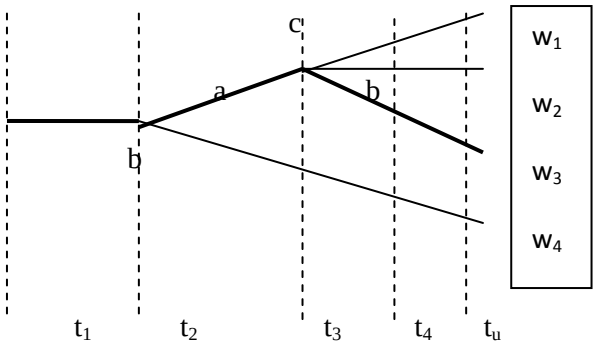
(43) a. He might have won.
b. PRES (PERF (MIGHT (He win)))

The temporal ordering for (44) would then be (45):

(44) John spoke to any woman who approached him.
(45) $ANY_{x, E}$ [∃ k [k < now ∧ ∀w' ∈ MB(w,k_1)) [w_i' ∈ E → ∃ w_j' ∈ E' ∧ j ⊆ k]]]
a. E = the set of world-time segments w_i, each corresponding to the unique instantiation of a woman x approaching John in w;
b. E' = the set of world-time segments w_j corresponding to the unique instantiation of John speaking to x in w;
c. $ANY_{x, E}$ = {John answer in E_1' *a* asked in E_1, John answer in E_2' *b* asked in E_2, John answer in E_3' *c* asked in E_3}

The association between the FCI and the perfective (which is an existential quantifier over intervals) is only interpretable as CAUSE(w', E, E'). Visually, the worlds are arranged in the same way as in the case of future universal modals, the difference being that the time of utterance ≠ modal perspective. The modal base is given below:

(46)



The relevant interval k existentially quantified by the perfective is [t_1, t_4]; in the actual world (highlighted) woman *a* came up to John at t_2 and John spoke to her in [t_2, t_3], *b* came up to him at t_3 and he spoke to her. Had other women come, John would have spoken to them, (e.g. *c* in w_1). The coming events were not settled ar t_1 (the beginning of k) and, when they occurred, they correlated with a talking event in k = [t_1, t_4].

5. Conclusions

In future sentences, subtrigged perfective sentences and imperfective characterizing sentences, FCIs introduce alternatives over individuals and eventualities. For events, the maximality + variation constraint amounts to serial universality + domain shift. The two combined ensure non-accidentality understood as an event (in the FCIs restriction) guaranteeing the occurrence of another (associated with the main predicate). These requirements induce an interpretation of perfective sentences in which they express a regularity holding at the reference interval;

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