

The Random Choice indefinite in Telugu: high or low event modal anchor, total & equal variation

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ABSTRACT

In this paper we analyse the distribution and interpretation of the Telugu Random Choice indefinite *eedoo oka*. We show that *eedoo oka* is more free in its distribution than the Spanish equivalent as its lexical semantics allows more freedom for modal anchors (speech event or verbal event) and modal bases (epistemic or root). It introduces a layer of quantification over possible worlds, and induces a presupposition of variation on either root worlds or epistemic worlds. It triggers a total and equal variation modal presupposition. A high event anchor leads to an epistemic modal base, and a low event anchor gives rise to a circumstantial modal base. The Ordering Source is Bouletic, Deontic, Teleological, etc. Modal Harmony arises when *eedoo oka*'s modal anchor gets bound by the anchor of the verbal modal. Unlike with other verbal modals, *eedoo oka* does not show modal harmony with the ability modal, except in special circumstances, due to an 'equal variation' requirement. We model this total and equal variation that explains the puzzle about the lack of harmony of *eedoo oka* with the ability modal.

1 Introduction

Random Choice (RC) indefinites, existentials that trigger a modal inference of 'random' choice, have been investigated quite extensively in some languages, especially Spanish (Alonso-Ovalle & Menéndez-Benito (AM) 2011, 2013, 2016), where they are shown to be sensitive to certain semantic constraints, specifically in Spanish, the decision of the event's agent as the modal anchor, along with a teleological modal base. An RC indefinite is supposed to convey indifference (Choi 2007, Zabbal 2004) or indiscriminate action on the part of an agent (Alonso-Ovalle & Menéndez-Benito 2011, 2013, 2016). The modal component of these existentials is illustrated with the RC indefinite *eedoo oka* (EO) in Telugu in (1) & (2).

- | | |
|---|---|
| <p>(1) neenu oka card tiisukunnaanu
I one/a card took
'I took a card.'
Existential: $\exists x.card(x).took(I, x)$</p> | <p>(2) neenu eed-oo oka card tiisukunnaanu
I which-DISJ one/a card took
'I took some card or the other.'
Existential component: $\exists x.card(x).took(I, x)$
Modal component: It could have been any other card.</p> |
|---|---|

The question that gets asked in the context of RC indefinites is what kind of free choice modality does the RC indefinite bring into play. In some languages it is claimed to be a counterfactual presupposition. In other languages it is seen as a domain widening implicature, with a modality related to the preferences of the agent. And in yet other languages it is supposed to be hard-wired into the RC indefinite, with a decision-event modal anchor.

Another line of enquiry that crops up with RC indefinites is how the modality of the RC indefinite interacts

with verbal modality, which modals and what readings they give rise to with the RC indefinite.

Indefinites with free choice effects that have been examined include Spanish *un NP cualquiera*: Alonso-Ovalle & Menéndez-Benito (2011); Korean *-na* indeterminates: Choi (2007), Kim & Kaufmann (2007), Choi & Romero (2008); French *n'importe qu-*: Zabbal (2004); Italian *uno qualsiasi, un qualunque*: Chierchia (2013); Romanian *un oarecare*: Fălăuș (2015) and German *irgendein*: Kratzer & Shimoyama (2002). They differ from each other in the environments licensed –subject/object asymmetry, volitionality, modal interactions, interaction with negation, etc. In this paper we will examine the Telugu RC indefinite *eed-oo oka* ‘which-DISJ one’, which helps us advance our understanding of RC indefinites.

2 EO’s Profile

We begin by summarising AM’s analysis of the Spanish RC indefinite *un NP cualquiera*, to be used as a baseline of comparison with EO.

2.1 The Spanish solution: Agentivity

The Spanish RC indefinite’s distribution is linked to agentivity (Choi & Romero 2008, AM 2011, 2013, 2016). Unaccusatives are bad, as shown in (3). The RC indefinite in agent position is bad, as shown in (4). Non-volitional agents are bad, as shown in (6).

- | | |
|--|--|
| <p>(3) #Ayer Juan tropezó con un objeto cualquiera.
yesterday Juan stumbled with an object CUALQUIERA
‘Yesterday, Juan stumbled on a random object.’</p> | <p>(4) #Habló un estudiante cualquiera.
spoke a student CUALQUIERA
‘A random student spoke.’</p> |
| <p>(5) El panadero rompió un molde cualquiera.
the baker broke a pan CUALQUIERA
‘The baker broke a random baking pan.’</p> | <p>(6) #La levadura rompió un molde cualquiera.
the yeast broke a baking-pan CUALQUIERA
‘The yeast broke a random baking pan.’</p> |

The solution proposed by AM is volitional events as anchors: For every (relevant) referent y in w_0 , there is a world w where the agent’s goals at the preparatory stage of the event e are satisfied and the agent has the relation R (that she has with x in the event in the real world) with y in the event in w .

$$\llbracket \text{una carta cualquiera} \rrbracket = \underbrace{\lambda e \lambda R \lambda e' \lambda w. \exists x \left[\begin{array}{l} \text{CARD}_w(x) \ \& \\ R_w(x)(e') \end{array} \right]}_{\text{existential component}} \ \& \ \forall y \underbrace{\left[\begin{array}{l} \text{CARD}_w(x) \ \rightarrow \\ \exists w' \in f(e) \exists e'' \left[\begin{array}{l} R_{w'}(y)(e'') \ \& \\ \text{FULFILS}_{w'}(e'')(e) \end{array} \right] \end{array} \right]}_{\text{modal component}}$$

The existential claim entails that the event took place in the real world. The modal anchor is an event e . $f(e)$ is defined only if e has a part d that establishes a goal, i.e. it is a volitional event. Only actionable goals, where the agent knows how to achieve the goal, can be associated with d_e . Preferences and desires if not actionable, cannot be goals of d_e .

This readily captures the patterning of the data: unaccusatives don’t have agents, non-volitional agents don’t have goals, and subject RC indefinites lead to an agent’s decision to act fulfilled by another agent’s action - a contradiction.

2.2 Is EO also tied to Indiscriminate Decisions?

The Telugu RC indefinite does not show any agent restrictions. Unaccusatives are good, as shown in (7). Non-volitional agents are good, as shown in (8). EO in agent position is good, as shown in (9).

context: You have your back turned to a table crowded with bottles. You hear the shattering of glass. You say:

context: You have your back turned to a table crowded with bottles. A strong wind blows through the room. You hear the shattering of glass. You say:

- (7) eed-oo oka bottle pagilindi. (8) gaali eed-oo oka bottle-ni paDeesindi.
 which-DISJ one bottle broke wind which-DISJ one bottle-ACC dropped
 ‘Some bottle or the other broke.’ ‘The wind dropped some bottle or the other.’

context: Your friend is worried that she won’t wake up in time in the morning. You say:

- (9) evaroo ok-allu ninnu leeputaaru.
 who-DISJ one-person you wake-will
 ‘Someone or the other will wake you up.’

2.3 EO’s modal base

EO’s modal base can be epistemic worlds projected by the Speaker, where the identity is unknown, or root worlds, where the identity is irrelevant. We illustrate this below.

2.3.1 Epistemic worlds

For epistemic worlds projected by the Speaker, only Indirect Evidence is good, as shown in (10) & (11).

- | | |
|--|---|
| <p><i>context:</i> You are facing the table now, and can clearly see the bottles and identify which one fell. You say:</p> <p>(10) #eed-oo oka bottle pagilindi.
 which-DISJ one bottle broke
 ‘Some bottle or the other broke.’</p> | <p><i>context:</i> You have your back turned to a table crowded with bottles. Your pet is running around in the room. You hear the shattering of glass. You say:</p> <p>(11) eed-oo oka bottle pagilindi.
 which-DISJ one bottle broke
 ‘Some bottle or the other broke.’</p> |
|--|---|

2.3.2 Root Worlds

The identity of the referent is immaterial to the goals (of the Speaker), as shown in (12), where it is not relevant which bottle broke for the purposes of getting a broom and cleaning up. The identity of the referent could also be immaterial to the desires of the Speaker, as shown in (13), where the Speaker doesn’t care which book she gets.

- | | |
|---|--|
| <p><i>context:</i> You know which bottle among a table crowded with bottles fell and shattered. You ask your friend to get a broom to clean up. He asks which bottle broke:</p> <p>(12) eed-oo oka bottle pagilindi
 which-DISJ one bottle broke
 ‘Some bottle or the other broke.’</p> | <p><i>context:</i> Your friend is handing out her books to friends. She asks which book you want. You say:</p> <p>(13) eed-oo oka pustakam ivvu
 which-DISJ one book give
 ‘Give me some book or the other.’</p> |
|---|--|

To summarise the data so far, EO always has a RC reading, with (epistemic modal base) or without (root modal base) an added ignorance component. Like in Spanish, the RC reading of EO does obtain when the agent’s choice is indiscriminate. But in Spanish the RC reading is restricted and only obtains in the object position because the semantics requires a volitional agent, as the RC modality is anchored to the agent’s decision. With EO a RC reading is possible even in an unaccusative. Thus it can’t be tied to an agent’s volitionality, the Spanish agent analysis won’t do. Our solution will have to account for this wider distribution.

2.4 EO’s RC effect is a presupposition

The RC effect cannot be targeted by negation. Nor does it disappear under negation. It projects past negation, as shown in (14). It also projects when embedded under conditionals, as shown in (15), and Yes/No questions as well. Reinforcement leads to redundancy. Cancellation is bad.

- (14) ravi eed-oo oka pustakam cadavaleedu
 Ravi which-DISJ one book read-not
 ‘There is some book or the other that Ravi did not read.’
- (15) ravi eed-oo oka pustakam cadivitee pass ayyeevaaDu
 Ravi which-DISJ one book read-IF pass have-would

‘If Ravi had read some book or the other he would have passed.’

The modal component of German *irgendein* is an implicature. That of Spanish *uno cualquiera* and French *n’importe qu* is truth-conditional.

2.5 Modal Interactions

Embedded under various modal operators — epistemic, deontic, bouletic, imperative — EO shows two kinds of interactions: modal harmony, and modal separation. In modal harmony, the RC indefinite has the same modal domain as the verbal modal. In modal separation, the RC indefinite has a different modal domain from that of the verbal modal.

2.5.1 Embedding under Epistemic verbal modal operators

One possible reading is that of Modal Harmony, as shown in (16), where from what the Speaker knows, any of the medicines produces these powerful effects. Ravi may have chosen carefully, thinking he is taking a non-powerful medicine.

Context: The medicine cabinet is full of powerful and dangerous medicines.

- (16) ravi eedoo oka mandu veesukuni-unTaaDu (viiTiloo)
 Ravi which-DISJ one medicine take-must-have these-among
 ‘Ravi must have taken some medicine or the other.’

The second reading is that of Modal Separation, as shown in (17), where from what the Speaker knows, only a few of the medicines produces these powerful effects. Ravi must have indiscriminately taken a powerful drug, for this effect to occur.

Context: The medicine cabinet has only a few powerful medicines

- (17) ravi eedoo oka mandu veesukuni-unTaaDu (cuusukookunDaa)
 Ravi which-DISJ one medicine take-must-have seeing-without
 ‘Ravi must have taken some medicine or the other.’

2.5.2 Embedding under Deontic & Imperative verbal modal operators

One possible reading for the sentences in (18) & (19) is that of Modal Harmony, where the Speaker is satisfied with what the agent chooses, who could be very picky. Any gift that Ravi brings (even if he chooses carefully) satisfies the obligation of bringing a gift.

- (18) ravi eed-oo oka gift paTTukuraavaali (19) eed-oo oka pustakam paTTukuraa!
 Ravi-DAT which-DISJ one gift bring-must which-DISJ one book bring
 ‘Ravi must bring some gift or the other.’ ‘Bring some book or the other!’

The second possible reading for these sentences is that of Modal Separation, where the Speaker is specifically instructing the agent to be indifferent to what the agent chooses, Ravi must choose randomly.

2.5.3 Embedding under Bouletic verbal modal operators

Here again, there are two possible readings for the sentence in (20), the *Modal Harmony* reading where Ravi wants any of the toys, and the *Modal Separation* reading where Ravi wants one specific toy, the Speaker doesn’t know which.

- (20) ravi-ki eed-oo oka bomma kaavaali
 Ravi-DAT which-DISJ one toy want
 ‘Ravi wants some toy or the other.’

2.5.4 Embedding under the Ability verbal modal operator: A puzzle

But under the ability modal, a harmonic reading is not available, as illustrated with (21). The Modal Harmony reading where Ravi can drive any of the vehicles is bad. Only the Modal Separation reading is good, where Ravi is able to drive one of the vehicles (chosen at random).

- (21) ravi eed-oo oka banDi toolagalaDu
 Ravi which-DISJ one vehicle drive-can
 ‘Ravi is able to drive some vehicle or the other.’

2.5.5 Ability modal interactions with the 3 kinds of indefinites

The reading with EO contrasts clearly with the FCI *ee-NP-ainaa* here, instead of EO, which distinctly has a quantificational reading, as shown in (22)

- (22) ravi (viiTiloo) ee banDi ainaa toolagalaDu
 Ravi these-among which vehicle AINAA drive-can
 ‘Ravi is able to drive any of the vehicles among these.’

The plain indefinite, *oka NP*, has a specific/non-specific reading, as shown in (23).

- (23) ravi (viiTiloo) oka banDi toolagalaDu
 Ravi these-among one vehicle drive-can
 ‘Ravi is able to drive one vehicle among these.’

Thus the three indefinites we contrast, the plain indefinite *oka NP*, the RC indefinite *eedoo oka NP*, and the FCI, *ee-NP-ainaa*, have three distinct readings.

A summary of EO’s modal interactions is given in (24), next to that of the Spanish RC indefinite. The Spanish RC indefinite does not allow Epistemic harmony in addition, because of its agentivity restriction. Since EO does not have any agentivity restriction, it shows Epistemic modal harmony.

	Harmonic interpretation	<i>eedoo okaTi</i>	<i>uno cualquiera</i>
(24)	Bouletic modals		
	Deontic modals		
	Imperatives		
	Epistemic modals		*
	Ability modals	*	*

3 The meaning of EO

eed-/evar- is a Hamblin indefinite, a *wh*-indeterminate pronoun that contributes a set of alternatives, and is interpreted *in situ*. Pointwise FA (Hamblin 1973) makes the alternatives grow into propositions. *-oo oka* is the propositional operator, interpreted in an IP-adjoined or VP-adjoined position, that takes the propositional alternatives, closes the set existentially, and triggers the presupposition of modal variation across the alternatives, as shown in (25).

- (25) a. ravi eed-oo oka mandu veesukunnaaDu
 Ravi which-DISJ one medicine took
 ‘Ravi took some medicine or the other.’
 b. LF: [_{IP}-oo oka]_{IP}Ravi eed- medicine took]
 c. $\llbracket \text{eed- medicine} \rrbracket^w = \{a, b, c, d\}$
 d. $\llbracket \text{Ravi eed- medicine took} \rrbracket^w: \{\lambda w.\text{took}(R, a), \lambda w.\text{took}(R, b), \lambda w.\text{took}(R, c), \lambda w.\text{took}(R, d)\}$
 e. $\llbracket \text{-oo oka } (\varphi) \rrbracket^w =$
 f. $\lambda w.\exists p \in \varphi[p(w)]$ ASSERTION
 g. $\forall p \in \varphi[\exists w' \in \text{BEST}_{g(w)}(\bigcap f(w'))[p(w')]]$ PRESUPPOSITION

The presupposition states that each alternative is true in some accessible world, given the modal base and ordering source. This is like Dayal (1997)’s *i-alternative* analysis of English *-ever* FRs. The presupposition has universal quantification force over the plurality that the NP refers to.

Thus, *eedoo oka* has multi-dimensional meaning: an assertion and a presupposition. The assertion is like a plain indefinite, with existential quantificational force. The presupposition has a modal dimension and is

interpreted relative to the set of contextually relevant alternatives that the indefinite refers to. The modal base is contextually determined, as shown in (26).

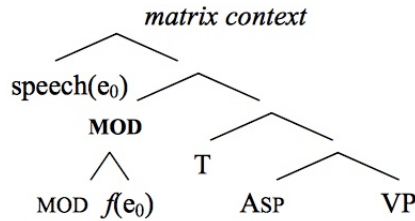
- (26) a. $\forall p \in \wp[\exists w' \in \text{BEST}_{g(w)}(\cap f_{epis}(w))[p(w')]]$ IDENTITY UNKNOWN
 b. $\forall p \in \wp[\exists w' \in \text{BEST}_{g(w)}(\cap f_{circ}(w))[p(w')]]$ IDENTITY IRRELEVANT

In this sense, it is similar to von Stechow (2000)'s formulation for English *-ever*, shown in (27).

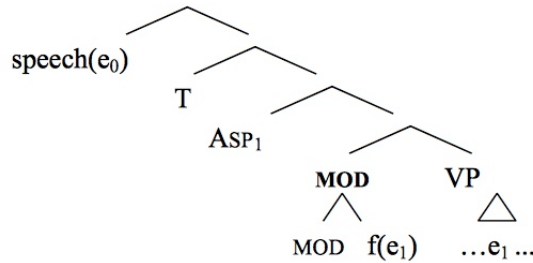
- (27) a. $\llbracket wh + ever \rrbracket = \lambda P \lambda x [P(w)(x)]$ MAXIMALITY
 b. $\exists w' \exists w'' \in F : \lambda x [P(w')(x)] \neq \lambda x [P(w'')(x)]$ IGNORANCE
 c. $\forall w' \in \min_w [F \cap (\lambda w' [\lambda x [P(w')(x)] \neq \lambda x [P(w)(x)]])] :$
 $Q(w')(\lambda x [P(w')(x)]) = Q(w)(\lambda x [P(w)(x)])$ INDIFFERENCE

Under an event-anchor conception of modality, modality is event-relative (Hacquard 2006, 2010). Modals are anchored to an event, have an event argument that needs to be bound locally. There are two positions for modals –‘high’ above TP, and ‘low’ above VP. High modals are anchored to the speech event, as illustrated by the tree in (28); Low modals are anchored to the VP event, as illustrated by the tree in (29).

(28)



(29)



The modal base for EO is contextually determined, tied to event anchors, high or low, as shown in (30) & (31).

- (30) a. $[\text{Speech}(e_0) \text{ } [_{IP} \text{-oo oka}(e_0) [_{IP} \text{ T Asp VP}(e_1)]]]$
 b. $\forall p \in \wp[\exists w' \in \text{BEST}_{g(w)}(\cap f(e_0))[p(w')]]$ IDENTITY UNKNOWN
 (31) a. $[\text{Speech}(e_0) \text{ T Asp } [_{VP} \text{-oo oka}(e_1) [_{VP} \text{ VP}(e_1)]]]$
 b. $\forall p \in \wp[\exists w' \in \text{BEST}_{g(w)}(\cap f(e_1))[p(w')]]$ IDENTITY IRRELEVANT

3.1 How do modal interactions arise?

Following AM (2016), on the harmonic reading, *eedoo oka* has the same modal domain as the verbal modal. This will happen if *eedoo oka* projects its domain from the same anchor as the verbal modal (and the same modal fixing function), as shown in (32a). If *eedoo oka*'s modal anchor is different from the verbal modal's anchor, the modal separation reading comes about, as illustrated in (32b).

- (32) a. $\text{LF}_1 : [[\text{Speech}(e_0) \text{ Mod}(e_0) [_{IP} \text{-oo oka}(e_0) [_{IP} \text{ T Asp VP}(e_1)]]]]$
 b. $\text{LF}_2 : [\text{Speech}(e_0) \text{ Mod}(e_0) [_{IP} \text{ T Asp } [_{VP} \text{-oo oka}(e_1) [_{VP} (e_1)]]]]$

3.1.1 Deriving the interaction with Epistemic modals

A sentence with EO and an epistemic modal, like in (33a), has two possible LFs, given in (33b) & (33c). The LF with the RC indefinite upstairs in the TP domain has the RC indefinite sharing the modal domain with the epistemic verbal modal which is also high, because both of them take the speech event as modal anchor. This gives rise to modal harmony, as shown in (34b). The LF with the RC indefinite downstairs in the VP domain has the RC indefinite taking the verbal event as anchor, and thus its modal domain becomes different from that of the epistemic verbal modal which is high and takes the speech event as its anchor. This gives rise to modal separation, as shown in (34c).

- (33) a. ravi eed-oo oka mandu veesukuni-unTaaDu
Ravi which-DISJ one medicine take-must-have
'Ravi must have taken some medicine or the other.'
- b. LF₁: [Speech(e₀) □ [_{IP} -oo oka [_{IP} Ravi T Asp [_{VP} e₁ eed- medicine taken]]]]
c. LF₂: [Speech(e₀) □ [Ravi T Asp [_{VP} -oo oka [_{VP} e₁ eed- medicine taken]]]]
- (34) a. ASSERTION:
□_S ∃x. *medicine(x).took(Ravi, x)*
- b. PRESUPPOSITION LF₁: MODAL HARMONY -
- i. [**Speech(e₀) Mod(e₀)** [_{IP} -oo oka(e₀) [_{IP} T Asp VP(e₁)]]]
ii. $\forall p \in \wp[\exists w' \in \text{BEST}_{g(w)}(\cap f(e_0))[p(w')]]$
- c. PRESUPPOSITION LF₂: MODAL SEPARATION -
- i. [Speech(e₀) **Mod(e₀)** [_{IP} T Asp [_{VP} -oo oka(e₁) [_{VP} (e₁)]]]]
ii. $\forall p \in \wp[\exists w' \in \text{BEST}_{g(w)}(\cap f(e_1))[p(w')]]$

3.1.2 Deriving the interaction with Root modals

A sentence with EO and a root modal, like in (35a), has again two possible LFs, given in (35b) & (35c). But now, the LF with the RC indefinite upstairs in the TP domain has the RC indefinite not sharing the modal domain with the root verbal modal which is low, because the one above takes the speech event as anchor and the one below takes the verbal event as anchor. This gives rise to modal separation, as shown in (36b). On the other hand, the LF with the RC indefinite downstairs in the VP domain has the RC indefinite taking the verbal event as anchor, and thus its modal domain is the same as that of the root verbal modal which is also low and takes the verbal event as its anchor. This gives rise to modal harmony, as shown in (36c).

- (35) a. ravi eed-oo oka button nokkaali
Ravi which-DISJ one button press-must
'Ravi must press some button or the other.'
- b. LF₁: [Speech(e₀) [-oo oka [T Asp □ [_{VP} e₁ Ravi eed- button press]]]]
c. LF₂: [Speech(e₀) [Ravi T Asp □ [_{VP} -oo oka [_{VP} e₁ eed- button press]]]]
- (36) a. ASSERTION:
□_A ∃x. *button(x).press(Ravi, x)*
- b. PRESUPPOSITION LF₁: MODAL SEPARATION -
- i. [**Speech(e₀)** [_{IP} -oo oka(e₀) [_{IP} T Asp Mod(e₁) VP(e₁)]]]
ii. $\forall p \in \wp[\exists w' \in \text{BEST}_{g(w)}(\cap f(e_0))[p(w')]]$
- c. PRESUPPOSITION LF₂: MODAL HARMONY -
- i. [Speech(e₀) [_{IP} T Asp **Mod(e₁)** [_{VP} -oo oka(e₁) [_{VP} (e₁)]]]]
ii. $\forall p \in \wp[\exists w' \in \text{BEST}_{g(w)}(\cap f(e_1))[p(w')]]$

4 Explaining lack of harmony with the Ability modal

We are finally left with the puzzle of why EO does not show modal harmony with the ability modal. Like sentences with the other modals, this should also give rise to two LFs, one leading to a modal harmony reading and the other leading to a modal separation reading. But this is not the case, and only a modal separation reading arises in a sentence with EO and the ability modal. How do we explain this restriction?

4.1 Attempt 1: The ability modal is not a modal

An attractive solution would be to say that the ability ‘modal’ is not a modal, following Bhatt (1999). It is a plain implicative predicate in the perfective, and in the imperfective, there is an added GEN operator, which derives the ‘able to’ reading. However, there is no quantificational reading with EO in the imperfective either, as shown in (37). Now, saying that the GEN operator cannot ‘harmonize’ with the modal anchor of *eedoo oka* won’t get much traction, as this is how Dayal (1997) derives the quantificational reading for *-ever* FRs, under GEN. So why should it not be possible here, with EO?

- (37) a. ravi eed-oo oka ceTTu ekka galigeeDu
 Ravi which-DISJ one tree climb could-PERF
 ‘Ravi managed to climb some tree or the other.’
 b. ravi eedoo oka ceTTu ekka galigeevaaDu
 Ravi which-DISJ one tree climb could-IMPERF
 ‘Ravi could have climbed some tree or the other.’

4.2 Attempt 2: The ability modal has universal force

One line of thinking about the ability modal proposes that the ability modal has universal modal force (Giannakidou 2001, Giannakidou and Staraki 2012), as shown in (38).

- (38) $can_{ability} p$ is true in a world w with respect to an ability modal base $K_{ability}(x)(w)$ and an ordering source \leq_w (“be at least as normal as”) iff: For all worlds w' in $K_{ability}$, there is a world w'' in $K_{ability}$ such that $w'' \leq_w w'$, and for every other world $w''' \leq_w w''$ in $K_{ability}$, p is true in w''' . (Giannakidou 2001: (132))

The variation requirement with *eedoo oka* on the other hand has an existential modal force, repeated here in (39). Hence one could say that the ‘ability with each member of the set’ reading does not arise. But universal modal force for the ability modal has been discounted in recent work (Mandelkern *et al* 2017), because its dual ‘cannot but’ does not have existential force, but expresses compulsion.

- (39) EO’s PRESUPPOSITION:
 $\forall p \in \wp[\exists w' \in \text{BEST}_{g(w)} \cap f(e) [p(w')]]$

4.3 Attempt 3 (Our Solution): Total & Equal variation

One property of EO that we have not elaborated on so far, is that it comes with a comparison class, and the interpretation that each member of the plurality that the NP denotes has an equal likelihood.

4.3.1 A graded notion of modality

This comes out most clearly in the difference between *eedoo*, the epistemic indefinite, and *eedoo oka*, the RC indefinite on its epistemic reading. We illustrate with the sentences in (40).

- (40) *Context*: You haven’t seen which bottle fell off the table. You just heard the shattering of glass.
 a. eed-oo oka bottle pagilindi.
 which-DISJ one bottle broke
 ‘Some bottle or the other broke.’
 b. eed-oo bottle pagilindi.
 which-DISJ bottle broke
 ‘Some bottle broke.’

It turns out that with *eedoo oka* there is a comparison class. Each bottle is as likely to have fallen as the other. With *eedoo* this component of the meaning does not exist. How do we model this equal likelihood? We illustrate with the toy modelling in (41), where there are three candidates in the witness set of the indefinite. EO is only good with the toy models that have equal variation among all the worlds. The epistemic indefinite *eedoo*, on the other hand, does not come with any such restriction, and is fine with all the toy models.

(41)	Equal Variation:		Un-equal Variation:	
	w1: a	w1: a	w1: a	w1: a
	w2: a	w2: b	w2: a	w2: a
	w3: b	w3: a	w3: a	w3: a
	w4: b	w4: c	w4: b	w4: c
	w5: c	w5: b	w5: b	w5: b
	w6: c	w6: c	w6: b	w6: c

We can model the equal variation requirement in the Kratzerian framework, as shown in (42).

- (42) a. LF: [Speech(e_0) [-oo oka(e_0) [eed- bottle T Asp [$_{VP}$ e_1 broke]]]]
 b. ASSERTION:
 $\exists x.bottle(x).broke(x)$
 c. PRESUPPOSITION:
 $\forall p \in \wp[\exists w' \in \text{BEST}_{g(w)} \cap f(e)[p(w')]]$
 d. EQUAL VARIATION REQUIREMENT :
 $\forall p, q \in \wp[\forall u.u \in \cap f(e) \& u \in p[\exists v.v \in \cap f(e)[v \leq_{g(w)} u] \& v \in q]]$

We can also model the equal variation requirement using the probability calculus (Lassiter 2011, Yalcin 2012), as shown in (43).

- (43) $\forall p, q \in \wp[Pr(p) \geq Pr(q)]$

4.3.2 Back to Ability modal readings with graded modality

Under modal harmony, the equal variation requirement with the ability modal would mean that the agent has 'equal ability' for all the members of the witness set. This is only possible if all the members of the plurality have identical difficulty. This condition is not met in most contexts. Hence the modal harmony reading is not usually available.

But what about contexts where all the members of the witness set do match in effort/know-how/capability? In such cases, modal harmony is now possible, as shown in (44), and this is the same interpretation as with the FCI *ee-NP-ainaa*, as shown in (45). In our toy models, only those with equal variation for ability give rise to a harmony reading with EO, those with unequal variation for ability do not.

Context: All the dumb-bells on the rack are of equal weight.

- (44) ravi eed-oo oka dumb-bell leepagaladu
 Ravi which-DISJ one dumb-bell lift-can
 'Ravi can lift some dumb-bell or the other.'
 Paraphrase: 'Ravi can lift any of the dumb-bells'
- (45) ravi ee-dumb-bell-ainaa leepagaladu
 Ravi which-dumb-bell-AINAA lift-can
 'Ravi can lift any dumbbell.'

5 Conclusion

We started by presenting the empirical profile of the Telugu RC indefinite, EO. As part of this, we have shown that it differs in behaviour from its Spanish counterpart, like the ability to occur in unaccusatives. We then presented an analysis of EO which models its meaning accordingly. Differences in possible readings with EO

are shown to be a function of differences in how the modal base is determined, structurally distinguished in terms of whether EO is anchored to the event high or low — the speech event or the verbal event.

We then attack the puzzle that EO presents in its interaction with the ability modal —under an ability modal, a modal harmonic reading is unavailable, while it is available under epistemic, bouletic, deontic and other types of modals. After rejecting certain candidate analyses, we propose that this unavailability stems from the notion that EO comes with a comparison class, and the interpretation that each member of the plurality that the NP denotes has an equal likelihood. Under modal harmony, the equal variation requirement with the ability modal would mean that the agent has equal ability for all the members of the witness set. This is only possible if all the members of the plurality have identical difficulty. This condition is not met in most contexts. But the modal harmony reading should be and is available if the members of the witness set have equally difficult ability in the discourse. What are the theoretical implications of this event-anchor-based graded-variation account of the modal indefinite EO in Telugu for the literature on modal indefinites cross-linguistically and how does it inform our theories of modal indefinites? We leave a precise answer to this for future exploration.

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