A question denotation for the Dravidian correlative   [*Keywords: Semantics, Syntax, Dravidian*]

INTRODUCTION: The disjunction marker *-oo* in Dravidian languages participates in coordinating elements, forming indefinites, forming questions, and even forming correlatives. These multiple roles for this marker are by no means special to Dravidian (Sinhala, Slade 2001; Japanese, Kuroda 1982; other languages). On one hand, this is taken to be homophony, and each role treated in isolation (Cable 2010). On the other, this is taken to signify an underlying property that justifies its many roles, and a unification is attempted. The latest and perhaps most unificatory in this series (Jayaseelan 2011, Szabolcsi 2015, and others) is Uegaki (2018) who treats each appearance of *ka*, the Japanese counterpart of *-oo*, as having only one semantic role, that of copying what is in the alternative semantic dimension into the ordinary semantic dimension, in a two-tier alternative semantics *wh*-in-situ (Beck 2006, Kotek 2014) model, (1).

(1) $[\![\alpha \text{ ka}]\!]^o = [\![\alpha \ ]\!]^{alt}$ and $[\![\alpha \text{ ka}]\!]^{alt} = \{[\![\alpha \ ]\!]^{alt}\}$

When alternatives enter the ordinary dimension early in the sentence precipitated by a low attached *ka*, they cannot be handled by the semantic composition mechanism, and a repair strategy of folding the alternatives into a single (existential) element kicks in, forming indefinites out of *wh*-words and narrow scope out of disjunction. But when *ka* attaches high, in the left periphery, the alternatives entering into the ordinary dimension can be handled by a question operator. Thus, affixing *ka* at the clause edge of a sentence containing a *wh*-word derives a constituent question and to a sentence containing disjunction yields an alternative question. This nice bifurcation in the readings speaks to this explanation.

THE PROBLEM: What complicates the picture is the Dravidian correlative. It is formed with a *wh*-item containing sentence with *-oo* at the clause edge, (2)-(3). Given that the canonical semantics of correlatives (Dayal 1991, 1996) analyses them as definite descriptions, which bind the pronoun variable via predicate abstraction, the question is what *-oo* is doing here, and if it has the Uegaki denotation, (1), then how does the semantic composition work. Can we build the Dravidian correlative out of a question denotation? We stick to single-correlatives (exemplified by Telugu in this abstract), to begin with.

(2)   [nēnu ēmi teccēn-oo] ravi adi tinnāDu   (3)   ravi uma-ki [[ēmi teccēn-oo] adi] iccēDu
         I   what brought-oo Ravi that ate   ravi uma-DAT   what brought-oo that gave
      'Ravi ate what I brought.'   'Ravi gave to Uma what (I) brought.'

INTERROGATIVE PROPERTIES OF THE CORRELATIVE: Jayaseelan (2001) notes that the Dravidian correlative exhibits properties of Dravidian *wh*-questions like island-insensitivity, absence of subjacency, multiple *wh*-items, and superiority effects. Jayaseelan takes this parallelism to fall out of the same structure for correlatives and *wh*-questions. But in many languages correlatives and *wh*-questions show the same properties (and both pattern differently from headed/free relatives), yet are interpreted quite differently (Citko 2009), the first as properties and the second propositionally. So similarities of features are not definitive proof that Dravidian correlatives and *wh*-questions have the same structure or interpretation.

INTEGRATING QUESTION DENOTATION INTO THE CORRELATIVE: Demirok (2016) already proposes that the Turkish correlative is built on *wh*-question semantics and an additional conditional semantics, reflected in the morpho-syntax. In a nutshell, each of the propositions in the question denotation pointwise restricts the modal conditional, thus delivering a free choice (FC) meaning. The demonstrative in the main clause is given an E-type denotation. This works for Turkish because they have a FC interpretation, but it won't work for Dravidian because they have a definite interpretation. Chierchia & Caponigro (2013) propose that all free relatives (FRs) are built on top of question denotations. The subset relation of *wh*-items in free relatives to those of questions is due to a D_{rel} operator that is a partial function from question to free relative denotations, mediated by the formation of a property out of the question denotation, through the answerhood operator of Dayal (1996). But in Dravidian, all the *wh*-words that occur in questions also occur in correlatives. So we don't need a partial mapping D_{rel} operator, and instead can build directly on top of the answerhood operator, which occurs with all *wh*-questions. But what we need to use is the short answer to a question (of type *e*), and not the full answer (of type *<s,t>*), since it has to bind the demonstrative in the main clause. Xiang (2018) uses exactly this, a short answerhood operator, to derive the nominal meaning of a *wh*-FR out of a *wh*-question. But she uses a categorial approach to question denotation, which if we adopt, we will lose the unified semantics of *-oo* coming from Uegaki, (1). Liu (2017) develops a structured meaning for questions in an alternative semantics framework, to explain the

Mandarin *wh*-conditional construction, out of which we can easily form a short answerhood operator, as he points out. We define the short answerhood operator, (4), using the Fox (2013) version of answerhood (that allows mention-some interpretations), and Liu's ⟨Focus Background⟩ structure.

(4) $\text{Ans}^s(Q)(w) = \{ F \mid F \in \langle F,B \rangle \wedge w \in \langle F,B \rangle \in Q \wedge \forall \langle F',B' \rangle [w \in \langle F',B' \rangle \in Q \rightarrow \langle F',B' \rangle \not\subset \langle F,B \rangle] \}$
({ F | F is the focus denotation of ⟨F,B⟩, a true proposition in Q, and ⟨F,B⟩ is not asymmetrically entailed by any true propositions in Q})

This part of our analysis has the advantage that the unique/non-unique variation and the mention-all/mention-some variation in the interpretation of the correlative can be attributed to the question complement that the correlative is formed out of. The QVE effects with correlatives also get a ready explanation from the QVE inferences of answers (Lahiri 2002). Thus exhaustivity/non-exhaustivity, maximality, uniqueness, all come for free from question semantics and the answerhood operator (Dayal 1996, 2017).

COMPOSING THE CORRELATIVE CP WITH THE DEMONSTRATIVE: The question-CP with the short answerhood operator further up in the left periphery then composes with a silent functional noun ANSWER, in the spirit of Kayne (2007). This forms the index-Phrase (Elbourne 2005) that anaphorically restricts the reference of the demonstrative. This is the structure of the 'demonstrative-adjoined' correlative, (3).
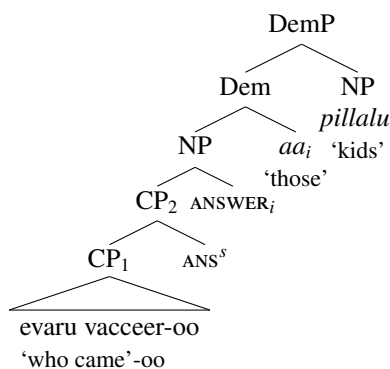
Similar proposals based on Elbourne's decomposition of demonstratives and pronouns exist for Hindi correlatives (Beshears 2016, Sachs 2017), and FRs in other languages (Gagnon & Mitrovic 2012).

Another possibility is that, like for Xiang, the answerhood operator could be a determiner which forms a DP out of the question CP (Mendia 2018 also uses a definite determiner with an answerhood operator semantics, that takes a question CP to deliver a DP. But that operator is a full answer operator, and it works in Spanish because they only occur as clausal complements, with a propositional denotation). This would then make it a *wh*-FR, which should be able to stand alone, without a demonstrative. But this is not the case, (5).

(5) A: nuvvu maamuulgaa eemi tinTaavu? B: amma eemi vanDutundoo *(adi)
     A: you   normally   what eat   B: mom what cooks-oo   that
     'A: What do you normally eat?' B: What mom cooks.'

The places where the demonstrative can be dropped in a correlative construction, are where a *pro* can occur. We have not found compelling evidence for FRs in Dravidian.

THE CORRELATIVE LEFT-DISLOCATES TO A TOPIC POSITION: This NP can then left-dislocate to a topic position in the matrix clause, as proposed by Cinque (2014), Lipták (2004), among others, to derive the 'left-adjoined' correlative, (2):

$[_{HangingTopicP}\ \text{NP}_i \ ... \ [_{CP} \ ... \ [_{IP} \ ... \ [_{DP} \ [<\text{NP}_i>]\ \text{Dem}] \ ... \ ]]]$
⤒——Match (+Move)———⌐

However, the diagnostics show lack of movement – the single-correlative of Dravidian exhibits the properties of multiple-correlatives of Hindi (Bhatt 2003), i.e. lack of reconstruction, island insensitivity, and no Condition-C effects. Is base generation in the left-periphery of the main clause then the only possibility for the 'left-adjoined' correlative, (2)? Here we go with Boeckx (2003) and Boeckx & Grohmann (2005) who analyse NP hanging topics with resumption even within islands, as being extracted by a certain movement. This type of movement, which involves only Match, differs from movement that involves Agree, in not being blocked by islands, and in not licensing reconstruction. The advantage of adopting this kind of movement, without agreement effects, for our analysis is not needing any other mechanism to ensure that the element denoted by the correlative and the demonstrative in the main clause be related.

CONCLUSION: This sketch towards a compositional derivation of the Dravidian correlative based on a question denotation proves that it is not only feasible but also quite advantageous – we keep a unified semantics of *-oo*, and derive a number of properties of the correlative from the semantics of questions and answers. If we take the typology of correlatives to have three parameters — one, the kind of relative clause it originates from – EHRC, IHRC, FR; two, its denotation – property or propositional; and three, the kind of left dislocation involved – HTLD, CLD, CLLD; then the Dravidian correlative is a result of the following choices – proposition-based, Externally Headed RC, and Hanging Topic Left Dislocation.

DemP
Dem   NP
       pillalu
  NP   *aa*$_i$ 'kids'
       'those'
CP$_2$ ANSWER$_i$
CP$_1$ ANS^s
evaru vacceer-oo
'who came'-oo