

The Dravidian Correlative and the Disjunction marker

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Abstract

The Dravidian correlative is formed with a *wh*-item containing clause that has the disjunction marker *-oo* at the clause edge. The disjunction marker *-oo* in Dravidian languages besides coordinating elements, also participates in forming indefinites, and questions. Given that the canonical semantics of correlatives (Dayal 1991, 1996) analyses them as definite descriptions, which bind the pronoun variable via predicate abstraction, the issue is what *-oo* is doing here, and how the semantic composition works. 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*, the disjunction marker that also participates in forming indefinites, and questions, and derive a number of properties of the Dravidian correlative from the semantics of questions and answers. In the literature, the typology of correlatives has been proposed to have two syntactic parameters – one, the kind of relative clause it originates from – EHRC, IHRC, FR; and two, the kind of left dislocation involved – HTLD, CLD, CLLD. We propose to add to this typology a third and semantic parameter, its denotation – property or propositional (we locate this semantic parameter itself in the denotation of the *wh*-items of the language, their lexical semantic entry – as sets of alternatives or as property free variables). We show that the Dravidian correlative is built out of a proposition-based denotation, Externally Headed Relative Clause, and Hanging Topic Left Dislocation.

1 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 – they are also seen in Sinhala (Slade 2011); Japanese (Kuroda 1982); among other languages. These have been dubbed *KA* particles – Mitrovic (2014), Szabolcsi (2015). The cross-linguistic patterns of *KA* particles are shown in (1).¹

(1)

	TB	DR	IA			
Roles of -KA	Mei	Tel	Sin	Jap	Hun	
disjunction			-hari	-ka	vagy	
polar question particle embedded	-ra	-oo				
polar question particle matrix	-la	-aa	-de			
constituent question particle						vala
existential quantifier particle	-no	-oo	-hari			

¹In the table, TB = Tibeto-Burman, DR = Dravidian, IA = Indo-Aryan, Jap = Japanese, Mei = Meiteilon, Tel = Telugu, Sin = Sinhala, Jap = Japanese, Hun = Hungarian.

1.1 KA in Dravidian

As a DISJUNCTION MARKER *-oo* appears on each of the disjuncts, as shown in (2).

- (2) a. John-*(oo) Bill-*(oo) Peter-*(oo)
 John-oo Bill-oo Peter-oo
 'John, Bill or Peter'
 b. john-oo bill-oo varum
 John-oo Bill-oo come-will
 'John or Bill will come.'

MALAYALAM

As a quantifier particle *-oo* when added to *wh*-words forms existential quantifiers – epistemic indefinites, as shown in (3)-(4).

- (3) MALAYALAM (Jayaseelan 2001)

aar-oo who-oo	somebody
ent-oo what-oo	something
ewiDe-(y)oo where-oo	somewhere
eppoozh-oo when-oo	sometime
eṅṅine-(y)oo how-oo	somehow

- (4) naan iruTT-il aar-e-(y)oo toTTu.
 I darkness-in who-ACC-oo touched
 'I touched somebody in the dark.'

MALAYALAM

As a clause-final polar/alternative-question particle *-oo* shows up in Malayalam polar/alternative questions in both matrix and embedded contexts, as shown in (5), where *-oo* is added to each clause. In Telugu/Tamil/Kannada only embedded polar/alternative questions have a clause final *-oo*, as shown in (6).

- (5) MALAYALAM
 a. John wannu-(w)oo?
 John came-oo
 'Did John come?'
 b. John wannu-(w)oo illa-(y)oo?
 John came-oo not-oo
 'Did John come or not?'

- (6) TELUGU
- a. John wacceeD-oo aDugu
 John came-oo ask
 ‘Ask if John came.’
- b. John wacceeD-oo leed-oo aDugu.
 John came-oo not-oo ask
 ‘Ask if John came or not.’

As a clause-final *wh*-question particle *-oo* appears in Telugu/Tamil/Kannada, where embedded *wh*-questions are formed by adding *-oo* to the clause, as shown in (7).

- (7) evaru wacceer-oo aDugu.
 who came-oo ask
 ‘Ask who came.’

TELUGU

So far what we have seen of the contexts where the *KA* particle appears across Dravidian are summarized in (8).

(8)

Role of <i>-KA</i>	Malayalam	Telugu	Kannada	Tamil
disjunction	-oo	-oo	-oo	-oo
existential quantifier particle	-oo	-oo	-oo	-oo
Pol/Alt-Q particle matrix	-oo	-aa	-aa	-aa
Pol/Alt-Q particle embedded	-oo	-oo	-oo	-oo
<i>wh</i> -Q particle matrix	-	-	-	-
<i>wh</i> -Q particle embedded	-	-oo	-oo	-oo

1.2 Why does *KA* take on multiple roles?

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 – Jayaseelan (2011), Szabolcsi (2015), Slade (2013), etc. The latest and perhaps most unificatory in this series is Uegaki (2018).

Uegaki (2018) 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:

$$(9) \quad \llbracket \alpha \text{ ka} \rrbracket^o = \llbracket \alpha \rrbracket^{alt} \quad \text{and} \quad \llbracket \alpha \text{ ka} \rrbracket^{alt} = \{ \llbracket \alpha \rrbracket^{alt} \}$$

When alternatives enter the ordinary dimension early in the sentence precipitated by a low attached *ka*, they cannot be handled by the semantic composition, and a repair strategy of folding the alternatives into a single (existential) element kicks in:

- (10) a. *ka* + *wh*-item = existential indefinite

- b. $ka + \alpha \dots \beta = \text{disjunction}$

But when *ka* attaches high, in the left periphery, the alternatives entering into the ordinary dimension can be handled by a question operator:

- (11) a. clause-final *ka* + *wh*-item = *wh*-Q
 b. clause-final *ka* + $\alpha \dots \beta = \text{Alt Q}$.

This nice bifurcation in the readings, at two levels, speaks to this explanation, as tabulated in (12).

(12)

-oo is:	sub-clausal	clause-final
$\alpha \dots \beta$	declarative disjunction	Alt Q
<i>wh</i> -	existential quantifier	<i>wh</i> -Q

2 Dravidian *KA* in Correlatives

2.1 -oo as correlative marker

As Subbarao (2006) notes: "When the head of the relative clause is indefinite, nonspecific, and hypothetical, the clause is labeled a free relative clause. In Dravidian languages and in some Tibeto-Burman languages the main clause and the subordinate clause in such cases are linked by a marker called the "dubitative marker" (dub mkr) in traditional grammars." The correlative construction in Dravidian is illustrated in (13).

- (13) a. [nii eng-enge pooriy-oo] angellam naanum varuveen
 you where-where go-oo there-all I-also will-come
 'I too will come wherever you go.' TAMIL
- b. [enn-e aarə nuLLi-(y)oo], awan duST-avan aaNə
 I-ACC who pinched-oo he wicked-man is
 'The person who pinched me is wicked.' MALAYALAM

In Telugu/Tamil/Kannada, the embedded question and the correlative have the same appearance of morphemes overtly, as shown in (14).

- (14) TELUGU
- a. *WH-QUESTION*
 eemi konnaaD-oo aDigeenu
 what bought-oo asked
 '(I) asked what (he) bought.'
- b. *CORRELATIVE*
 eemi konnaaD-oo (adi) tinnaanu
 what bought-oo that ate
 'What (he) bought, that (I) ate.'

Thus, the clause-final +*wh*- cell gets another occupant in Dravidian:

(15)

-oo is:	sub-clausal	clause-final
$\alpha \dots \beta$	declarative disjunction	Alt Q
<i>wh</i> -	existential quantifier	<i>wh</i>-Q/correlative

Now we can ask the question what semantic/syntactic role -oo has in correlatives in Dravidian.

2.2 What -oo is doing in the correlative: Jayaseelan (2001)

Jayaseelan (2001) treats the appearance of -oo in questions and correlatives as the disjunction operator. This disjunction operator has the semantics of the logical boolean operator \vee . For Jayaseelan, a correlative clause has the same structure as a question, but it is not interpreted as a request for information. Questions have an additional “request-for-information” meaning, which could be accommodated if the head of ForceP contained, besides the disjunction operator, “another” element. Also, the question’s illocutionary force may be signaled by intonation (or other means). Thus, there is no “question meaning” in the correlative.

2.3 Interrogative properties of the Dravidian correlative

Jayaseelan (2001) notes that the Dravidian correlative exhibits properties of the Dravidian *wh*-question: island-insensitivity; absence of subjacency; shows superiority effects; and allows multiple *wh*-items. The last property is illustrated in (16).

- (16) aarə aar-e eppool nuLLi-(y)oo, ayaaL matte aaL-ooDd appool-tanne
 who who-ACC when pinched-oo that-person other person-2ND.DAT then-EMPH
 kSama coodikk-aTTe.
 pardon ask-let
 ‘Who pinched whom when, let that person apologize to the other then.’

Jayaseelan attributes the parallels to 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 as propositions.

So similarities of features are not definitive proof that Dravidian correlatives and *wh*-questions have the same interpretation.

2.4 Correlative semantics: properties not propositions

The canonical semantics of correlatives (Dayal 1991, 1996) analyses them as definite descriptions, which bind the pronoun variable via predicate abstraction, as shown in (17).

- (17) HINDI

- a. [jo laDakaa gaayaa hai]_i vo_i mera bhai hai
REL-P boy sang is he my brother is
‘which boy sang, he is my brother.’
- b. [[$\iota(\lambda x.x \text{ sang and } x \text{ is a boy})$] [$\lambda_2 \text{ he}_2 \text{ is my brother}$]]

The question then is what *-oo* is doing here in the correlative, and if it has the denotation as formulated by Uegaki for κ_A , then how does the semantic composition work. Can we build the Dravidian correlative out of a question denotation? We stick to single-correlatives in this paper, left-adjoined and dem-adjoined, as shown in (18).

(18) TELUGU

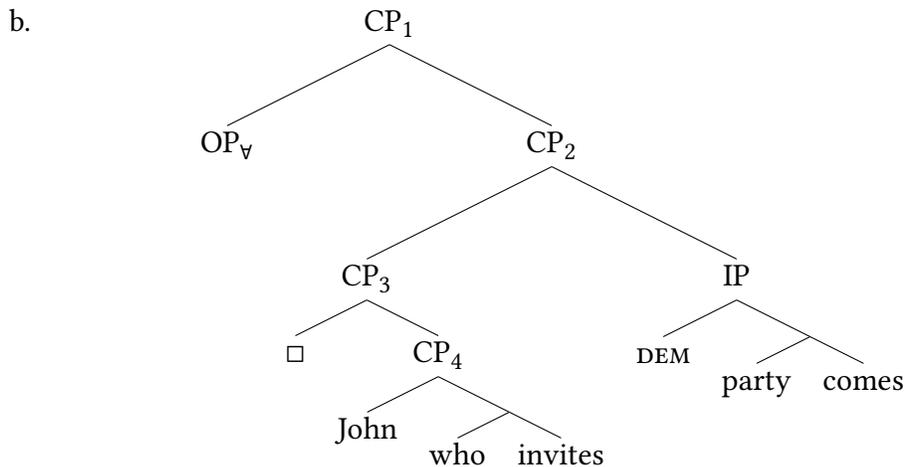
- a. LEFT-ADJOINED CORRELATIVE
[eemi tecceen-oo] ravi adi tinnaaDu
what brought-oo Ravi that ate
‘Ravi ate what (I) brought.’
- b. DEM-ADJOINED CORRELATIVE
ravi uma-ki [[eemi tecceen-oo] adi] icceeDu
ravi uma-DAT what brought-oo that gave
‘Ravi gave to Uma what (I) brought.’

3 A question semantics for the Dravidian Correlative

3.1 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, as shown in (19).

- (19) a. [John kim-i davet-et-ti-yse]_i o_i gel-di. TURKISH
John who-ACC invite-PST-SA DEM come-PST
‘Whoever John invited, came.’



In Demirok’s structure, each of the propositions in the question-denotation pointwise restricts the modal conditional, thus delivering a free choice (FC) meaning. We get a generalized conjunction of conditional statements. The main clause DEM is given an E-type denotation.

This structure works for Turkish because Turkish correlatives have a FC interpretation, but it won’t work for Dravidian because they do have a definite interpretation.

Chierchia & Caponigro (2013) propose that all free relatives (FRs) are built on top of a question denotation in two steps, as shown in (20).

- (20) a. a TP (‘Topical Property’) operator that extracts properties from questions:
 $TP(\text{what Mary cooked?}) = \lambda x . \lambda w \text{ Mary cooked } x \text{ in } w$
 b. a D_{rel} (determiner like) operator that shifts properties into DPs
 c. John ate [$_{DP}$ what [$_{CP}$ Mary cooked t]]
 $= \text{John ate } D_{rel}(TP(\text{what Mary cooked t?}))$
 $= \exists x [x = \iota x \text{ M cooked}_w x] \wedge \text{J ate}_w x$

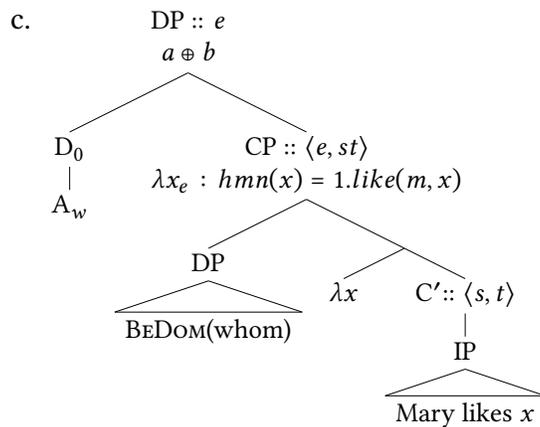
So for them, FRs are DPs with the same denotation as short answers to Qs. The subset relation of *wh*-items in free relatives to those of questions is due to the D_{rel} operator that is a partial function from question to free relative denotations, mediated by the formation of a property out of the 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 we can build directly on top of the answerhood operator, which occurs with all *wh*-questions.

However what we need to use is the short answer to a question (of type e), and not the full answer, of type $\langle s, t \rangle$, 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, as shown in (21).

- (21) a. John invited [$_{FR}$ whom Mary likes]
 (w : Mary only likes Andy and Billy.)
 b. $\llbracket A \rrbracket = \lambda w \lambda P. f_{CH} [\text{ANS}^S(\mathbf{P})(w)]$



The A-determiner selects an interrogative CP-complement and returns a nominal DP:

(22) A-determiner = choice function + Ans^S-operator.

It picks out a complete true short answer of the question denoted by the CP-complement.

But Xiang uses a categorial approach to question denotation, which if we adopt, we will lose the unified semantics of *-oo* coming from Uegaki.

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:

(23) *Dayal-answer*: a possible answer of Q is a focus-background pair $\langle F, B \rangle$ belonging to Q ; A Dayal-answer at w is the unique $\langle F, B \rangle$ that is the strongest true answer at w .

$$\text{Ans}(Q)(w) = \iota \langle F, B \rangle \in Q[(B)(F)(w) = 1 \wedge \forall \langle F', B' \rangle \in Q[(B')(F')(w) = 1 \rightarrow B(F) \subseteq B'(F')]]$$

The denotation of the short answer of a question can be directly read off its Dayal-answer, which is just the F-part of the latter.

We define the short answerhood operator that we will use in our analysis of the Dravidian correlative structure, (24), using the Fox (2013) version of answerhood (that allows mention-some interpretations), and Liu's \langle Focus Background \rangle structure.

(24) $\text{Ans}^s(Q)(w) = \{F \mid F \in \langle F, B \rangle \wedge w \in \langle F, B \rangle \in Q \wedge \forall \langle F', B' \rangle [w \in \langle F', B' \rangle \in Q \rightarrow \langle F', B' \rangle \not\subseteq \langle F, B \rangle]\}$

($\{F \mid F$ is the focus denotation of $\langle F, B \rangle$, a true proposition in Q , and $\langle F, B \rangle$ is not asymmetrically entailed by any true propositions in Q })

3.2 Advantages of a question-denotation for the correlative

This part of our analysis has the advantage that the mention-all vs. mention-some variation in the interpretation of the correlative can be attributed to the question complement that the correlative is formed out of, as shown in (25)-(26).

(25) TELUGU

a. naa-ku tea ekkaDa dorukutund-oo telusu
 I-DAT tea where find-will-oo know
 'I know where one can find tea.' (mention-some)

b. tea ekkaDa dorukutund-oo akkaDi-ki vell-daam
 tea where find-will-oo there-DAT go-shall
 'We shall go where one can find tea.' (mention-some)

(26) TELUGU

a. answer evari-ki telus-oo aDugu!
 answer who-DAT knows-oo ask
 'Ask who knows the answer.' (mention-all)

- b. answer evari-ki telus-oo vaallu nunco-vaali.
 answer who-DAT knows-oo they stand-must
 ‘Who knows the answer, they must stand.’ (mention-all)

It also has the advantage that the unique/non-unique variation seen with the correlative also comes for free from the question semantics, as shown in (27)-(28).

(27) TELUGU

- a. ee-ammai paaDind-oo telusu
 which-girl sang-oo know
 ‘(I) know which girl sang.’ (unique)
- b. ee-ammaai paaDind-oo aa-ammaai vaccindi
 which-girl sang-oo that-girl came
 ‘Which girl sang, that girl came.’ (unique)

(28) TELUGU

- a. ee-ammai paaDutund-oo telusu
 which-girl sang-will-oo know
 ‘(I) know which girl will sang.’ (non-unique)
- b. ee-ammai paaDutund-oo aa-ammai vastundi
 which-girl sang-will-oo know
 ‘Which girl will sing, that girl will come’ (non-unique)

Finally, the QVE effects with correlatives also get a ready explanation from the QVE inferences of answers (Lahiri 2002), as shown in (29)–(30).

(29) TELUGU

- a. naa-ku evaru vacceer-oo caalaa-varuku telusu
 I-DAT who came-oo lot-till know
 ‘I mostly know who came.’
- b. evaru vacceer-oo vaallu caalaa-varuku bhojanam ceeseeru
 who came-oo they lot-till meal did
 ‘Who came, they mostly had a meal.’

(30) TELUGU

- a. naa-ku evaru vacceer-oo koncam-varuku telusu
 I-DAT who came-oo some-till know
 ‘I partly know who came.’
- b. evaru vacceer-oo vaallu koncam-varuku bhojanam ceeseeru
 who came-oo they some-till meal did
 ‘Who came, they partly had a meal.’

Thus exhaustivity/non-exhaustivity, uniqueness/non-uniqueness, and QVE effects found in correlatives all come for free from question semantics and the answerhood operator (Dayal 1996, 2016).

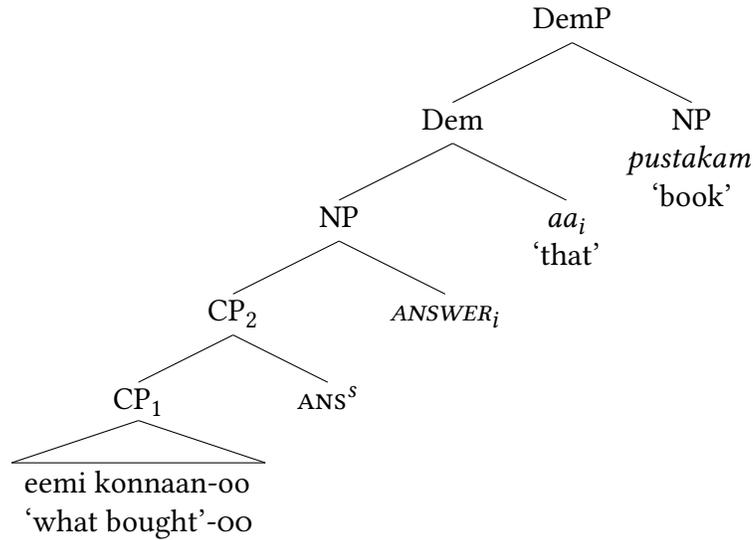
4 Composing the correlative CP with the demonstrative

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, as shown in (31):

- (31) a. ravi uma-ki [[eemi konnaan-oo] aa pustakam] icceeDu
 ravi uma-DAT what bought-oo that book gave
 ‘Ravi gave to Uma what book (I) bought.’

b.



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 (2018), 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, as shown in (32).

- (32) a. las manzanas que trajo Pedro
 the.FM.PL apples that brought Pedro
 ‘what apples Pedro brought’

b. $[DP_1 \text{ las } [CP [DP_2 \text{ Op}_{wh} \text{ apples}]_i [C' \text{ que}_{[+wh]} [\text{brought}]_j [TP \text{ Juan } t_j t_i]]]]$

c. $[[CP]] = \lambda p . \exists x[*\text{apples}(x) \wedge p = \lambda w'.\text{brought}(w')(\text{Pedro}, x)]$

d. $[[32b]] = \lambda w . \iota p[p(w) \wedge \exists x[*\text{apples}(x) \wedge p = \lambda w'.\text{brought}(w')(\text{Pedro}, x)]]$

e. $[[D_{ANS}]] = \lambda Q_{(st,t)}. \lambda w : \exists p[Q(p) \wedge p(w) \wedge \forall q[[q(w) \wedge Q(p)] \rightarrow p \subseteq q]]$
 $\iota p[Q(p) \wedge p(w) \wedge \forall q[[q(w) \wedge Q(p)] \rightarrow p \subseteq q]]$

But the operator used by Mendia is a full answer operator, and it works in Spanish because these constructions only occur as clausal complements, with a propositional denotation.

One other possibility for Dravidian is that there is a null determiner with the denotation of a short answerhood operator (Xiang 2018). This would then make the construction a *wh*-FR, which should be able to stand alone, without a demonstrative. But this is **not the case**, as shown in (33).

- (33) A: maamuulga eemi tinTaavu? B: amma eemi vanDutundoo *(adi)
 A: 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.

A final intriguing possibility that we haven’t explored is that the demonstrative is realizing the short answerhood operator (like in Spanish, where the determiner is a realization of the full answerhood operator, Mendia 2018).

4.1 The correlative left-dislocates to a topic position

The NP thus formed 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, as repeated in (34), from the base order, as repeated in (35).

- (34) LEFT-ADJOINED CORRELATIVE TELUGU
 [eemi tecceen-oo] ravi adi tinnaaDu
 what brought-oo Ravi that ate
 ‘Ravi ate what (I) brought.’
- (35) DEM-ADJOINED CORRELATIVE TELUGU
 ravi uma-ki [[eemi tecceen-oo] adi] icceeDu
 ravi uma-DAT what brought-oo that gave
 ‘Ravi gave to Uma what (I) brought.’

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.

The strongest evidence for movement of the correlative CP from a DP internal position in Hindi is island sensitivity (36). Telugu correlatives on the other hand are not island sensitive, (37).

- (36) *[jo vahaa rah-taa hai]₁ mujh-ko [vo kahaani [jo Anu-ne [us]₁-par likh-ii]
 REL there stays be I-DAT that story REL Anu-ERG he-on wrote
 pasand hai
 like be
 ‘Intended: I like the story that Anu wrote about who lives there.’

- (37) [ee abbai akkaDa unnaaDoo] [naaku Anu vaaDi gurinci raasin-a article
 which boy there be-oo I-DAT Anu him about wrote-REL article
 baagaa naccindi]
 lot liked
 ‘I like the story that Anu wrote about who is there.’

In Hindi there is evidence for reconstruction, (38a). But in Telugu, there is no such evidence for reconstruction, (38b).

- (38) a. [jis larke-ko vo₁ pasand kar-ti: hai]₂ [har larki]₁ [us larke-ko]₂ buddhima:n
 REL boy-DAT that like do be every girl that boy-DAT intelligent
 samajh-ti: hai
 thinks be
 ‘Which boy she likes, every girl thinks that boy is intelligent.’
 b. *[ee kukka-ni₁ vaaDu₂ penceeD-oo] [prati abbai]₂ [daani-ki₁ baagaa tinDi
 which dog-ACC he brought.up-oo every boy that-DAT well food
 peTTeeDu]
 gave
 ‘Intended: Which dog he brought up, every boy fed it well.’

Hindi is also sensitive to the Coordinate Structure Constraint, (39a). Telugu, on the other hand, is not, (39b).

- (39) a. *[jo kita:b Saira-ne likh-i:]₁ Rahul a:jkal [[vo₁] aur [[jo cartoon Shyam-ne
 REL book Saira-ACC wrote Rahul nowadays that and REL cartoon Shyam-ACC
 bana:-ya:]₂ vo₂]] parh raha: hai.
 made that read stay be
 ‘Which book Saira wrote, Rahul nowadays, that, and which cartoon Shyam
 made that, is reading’
 b. [ee pustakam Sai raaseeD-oo]₁ neenu adii₁ mariyuu [ee article Rahul
 which book Sai wrote-oo I that and which article Rahul
 pampinceeD-oo]₂ adii₂ caduvutunnaanu
 sent-oo that reading
 ‘Which book Sai wrote, I that, and which article Rahul sent, that read.’

Hindi shows Condition-C effects, (40a). Telugu, on the other hand, does not, (40b).

- (40) a. *[jo larkii Sita-ko₁ pyaar kar-tii hai]₂ [us-ne]₁ [us-ko]₂ thukraa di-yaa.
 REL girl Sita-DAT love do be that-ACC that-DAT decline gave
 ‘Which girl likes Sita, she declined her.’
 b. [ravi₁ ee pustakam konnaaD-oo]₂ vaaDu₁ daan-ni₂ cadiveeDu.
 Ravi which book read-oo he that-ACC read
 ‘Which book Ravi bought, he read that.’

The Telugu single-correlative thus behaves like the Hindi multi-correlative: all the structures which should be bad because of movement are good —island effects, condition-C effects. All the structures which need movement are bad —reconstruction effects.

4.2 Movement without Agree

Should we then conclude that base generation in the left-periphery of the main clause is the only possibility for the ‘left-adjoined’ correlative, since it seems to fail the movement tests?

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 Dravidian correlative, we propose, undergoes this type of movement, as illustrated in (41).

$$(41) \quad [\text{HangingTopicP } NP_i \dots [CP \dots [IP \dots [DP [\langle NP_i \rangle] \text{Dem}] \dots]]]$$

Hindi correlative movement on the other hand is sensitive to islands and allows reconstruction, and thus the movement operation must involve Agree. This is perhaps reflected in the *j*-morphology of the Hindi relative pronoun series. The advantage of adopting this kind of movement for the Dravidian correlative, 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.

If we don’t allow this type of movement, we would have to consider the possibility that the correlative-CP is base-generated at the left-edge, with a full-answerhood-operator, and that the Dem in the main clause gets interpreted as an E-type pronoun. We don’t explore this possibility here.

5 Towards a Correlative Typology

Cinque (2009) propose two syntactic points of variation for correlatives. One is the kind of left-dislocation: “Correlatives (at least those that do not contain multiple *wh*-phrases) are embedded in a DP which is left dislocated at the beginning of the matrix clause and is resumed by a correlative pro-form (or a full DP) inside the matrix clause.” The kinds of left-dislocations and some of the languages that instantiate them are shown in (42).

- (42) a. CLD (Contrastive Left Dislocation) = German, Bulgarian
 b. CLLD (Clitic Left Dislocation) = Italian
 c. HTLD (Hanging Topic Left Dislocation) = Dravidian

The other point of syntactic variation that Cinque (2009) proposes is the kind of relative clause: “The left dislocated DP may contain, depending on the language, either an externally headed postnominal, or an externally headed prenominal, or an internally headed,

or a headless (free), relative clause...”. The kinds of relative clauses and some of the languages that instantiate them are shown in (43).

- (43) a. Externally headed postnominal = Hindi, Slavic, Warlpiri
 b. Externally headed prenominal = Sinhala
 c. “headless”/”free” relative = Bulgarian, German, Italian
 d. Internally headed = Wappo, Bambara, Georgian (Bhatt & Nash 2018)

A third and ‘semantic’ point of variation that we would like to include in the typology of correlatives is the denotation of the correlative – property or propositional or individual:

- (44) a. properties = Georgian (Bhatt & Nash 2018)
 b. property-to-individual = Hindi-Urdu (Dayal 1996)
 c. propositional = Turkish (Demirok 2017)
 d. proposition-to-individual = Dravidian

The Dravidian correlative, we finally conclude, is a result of the following choices: proposition-based; Externally Headed RC; Hanging Topic Left Dislocation.

5.1 The *wh*-word semantic parameter

What is the semantic entry for interrogative pronouns? Demirok (2017), Simik (2018) consider the possibility of *wh*-words as property free variables, as shown in (45).

- (45) a. $\llbracket who \rrbracket = \lambda x. \lambda w. x \text{ is human in } w.$
 b. Movement creates a semantic predicate:
 $\llbracket \text{who } \lambda_i \text{ John hit } t_i \rrbracket = \lambda x. \lambda w. \text{ John hit } x \text{ in } w.$
 c. Combining with an iota operator turns the predicate into a definite description, that forms a *wh*-FR or correlative, etc:
 $\llbracket [D[\text{who } \lambda_i \text{ John hit } t_i]] \rrbracket = \iota x. \lambda w. \text{ John hit } x \text{ in } w.$

We considered in this paper another possibility, that *wh*-words denote sets of alternatives, and compose as illustrated in (46).

- (46) a. $\llbracket who \rrbracket^o = \text{undefined}$
 $\llbracket who \rrbracket^{alt} = \{ x \mid x \in \text{HUMAN} \}$
 b. Composing with a predicate:
 $\llbracket ran \rrbracket^o = \lambda x. \lambda w. \text{ ran}(x, w)$
 $\llbracket ran \rrbracket^{alt} = \{ \lambda x. \lambda w. \text{ ran}(x, w) \}$
 c. Since $\llbracket \alpha \text{ KA} \rrbracket^o = \llbracket \alpha \rrbracket^{alt}$ and $\llbracket \alpha \text{ KA} \rrbracket^{alt} = \{ \llbracket \alpha \rrbracket^{alt} \}$
 $\llbracket \text{who-oo ran} \rrbracket^o = \exists x. \lambda w. \text{ ran}(x, w)$
 d. By $\llbracket \exists \rrbracket^o$ repair:
 $\llbracket \text{who ran-oo} \rrbracket^o = \{ \lambda x. \lambda w. \text{ ran}(x, w). x \text{ is human in } w \}$

Combining this denotation with answerhood operators or pointwise restriction of conditional modals yields (definite) correlatives and FC correlatives respectively.

6 Conclusion

This sketch towards a compositional derivation of the Dravidian correlative based on a question denotation leads us to conclude that it is not only feasible but also quite advantageous:

1. We keep a unified semantics of *-oo*, the Dravidian *KA* particle.
2. We derive a number of properties of the correlative from the semantics of questions and answers.

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