

In support of an articulated event layer

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- ☞ The goal of this talk is to argue, based on evidence from the Dravidian language Tamil, that the syntax and semantics of transitivity, ‘get’-like middles, and passives is distributed across three distinct heads.
- ☞ These heads are contiguous and have the following rigid ordering: PASS(IVE) > MID(DLE) > TRANS(ITIVE) > V.
- ☞ As such, it makes sense to talk about an articulated *v layer* or *domain* – much along the lines of the articulated C layer/domain proposed within the cartographic framework (Rizzi, 1997; Cinque, 1999) – rather than a single *v* head.

Tamil is a highly inflected agglutinative language:

- The verbal form consists of the verb root + a sequence of functional morphemes.
- These functional morphemes have a rigid relative ordering, thus serve as a window into the underlying structure above the verb root, in the region traditionally labelled *vP*.

Below, we will consider three types of marking, all of which occur between the verbal root/stem and morphemes that realize a higher portion of the structure, such as tense and agreement markers:

- ☞ Transitivity marking
- ☞ Middle marking (with a GET-type semantics)
- ☞ Passive marking

1 Transitivity marking in Tamil

- ☞ Transitivity distinctions in Tamil are typically marked by a systematic alternation on the final consonant of the verb stem or the immediately following suffix.
- ☞ In either position, a simplex consonant in the intransitive is geminated in the transitive (with phonologically regular devocing and cluster simplification).

Thus, in (1) below, the form of ‘break’ *oḍæ-nḍ-* is interpreted as unaccusative whereas the geminated variant *oḍæ-čč-* in (2) must be used transitively:

- (1) **Unaccusative:**

Paanæ odæ-**nɕ**-adǔ/*odæ-**čč**-adǔ.
 Pot[NOM] break-INTR.ASP-3NSG/*break-TR.ASP-3NSG
 “The pot broke.”

(2) **Transitive:**

Sri paanæ-jæ odæ-**čč**-aan/*odæ-**nɕ**-aan.
 Sri[NOM] pot-ACC break-TR.ASP-3MSG/*break-INTR.ASP-3MSG
 “Sri broke the pot.”

Further examples of the alternation are provided in Table 1 below:

TRANSLATION	UNACCUSATIVE PAST	TRANSITIVE PAST
SHRINK	<i>suru-ŋg-in-</i>	<i>suru-kk-in-</i>
MELT	<i>urug-in-</i>	<i>urukk-in-</i>
RUN	<i>ood-in-</i>	<i>oott-in-</i>
BREAK	<i>odæ-nɕ-</i>	<i>odæ-čč-</i>
GROW	<i>va ar-nd-</i>	<i>va ar-tt-</i>
BURST	<i>ved<i>i</i>-nɕ-</i>	<i>ved<i>i</i>-čč-</i>

Table 1: Transitive and unaccusative forms

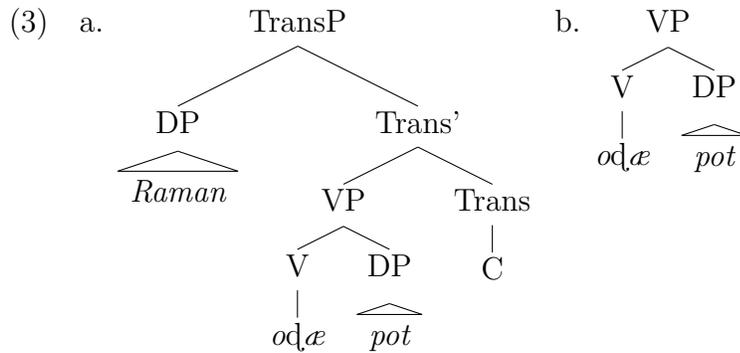
Morphophonologically, we propose that the following is happening:

- The marker is an underspecified consonant node, which copies place features from the closest geminable consonant autosegmentally (Christdas, 1988; Bye and Svenonius, 2012).
- Preferentially, this will be the final segment consonant of the verb root, but when the root ends in a vowel or a non-geminable consonant, it will be the initial consonant of the following suffix – usually T/Asp or the infinitival marker.

On the syntactic side, we propose that the following is happening:

- The marker responsible for the alternation is in fact the realization of the head that combines with the VP and introduces the external argument in its specifier – very much like the Voice head in (Kratzer, 1996).
- This is in line with the fact that the alternation directly tracks transitivity, and with its surface appearance in the verb form between the verbal root and T/Asp markers.
- We’ll shortly be arguing that there are other morphemes in the verbal complex that appear to perform other functions that one might also have associated with Voice, so to avoid confusion, we’ll thus label this head “Trans”.

We envision a transitive verbal structure like that in (3a), familiar again from the Kratzer (1996) structure for the introduction of an external argument, and an intransitive structure like that in (3b):



- The intransitive variant in (3b) is seen as basic, with the verbal root having the ungeminated form by default.
- In (3a), the presence of the underspecified C node in the Trans head will, lead to gemination of whatever suffix comes above it, since the root ‘break’ ends in a vowel.

2 Passive marking in Tamil

Now consider the passive structure below:

- (4) Paanæ (Sri-aal) odæ-**kkæ**-paṭ-t-adü/*odæ-jæ-pa-t-t-adü.
 Pot[NOM] (Sri-INSTR) break-TR-PASS-PST-3NSG/*break-INTR-PASS-PST-3NSG
 “The pot was broken (by Sri).”

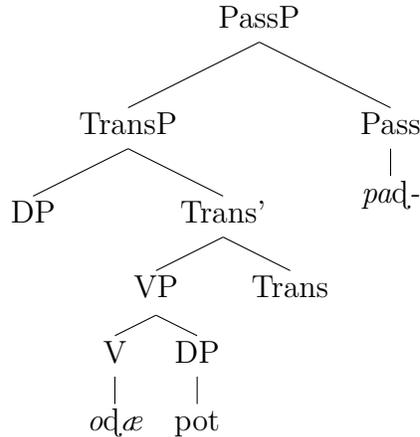
The structure in (4) is instructive in several regards:

- (4) shows that the passive has to be built on the transitive variant of the verb (seen in (2)).
- It thus supports the view (Embick, 2004, among others) that passives are more “agentive” than unaccusatives in some sense.
- Crucially furthermore, (4) shows that the passive applies to a verbal structure that has already had the phonological gemination process apply to it.
- This is most elegantly captured by proposing, according to the Mirror Principle, that the head that the passive marker *paṭ*- spells out (call it Pass) is above Trans.

This results is further articulation in the structural zone traditionally associated with a single head (namely *v*), as illustrated below:¹

¹We have drawn a specifier position for Trans and assume that this will either be filled by an empty operator controlled by the instrumental-marked agent (the equivalent of a ‘by’-phrase) or will be filled by the instrumental-marked agent directly. Of course, Embick (2004) proposes that the TransP (VoiceP in his terminology) is specifierless to begin with – I later present some evidence that might contradict this idea, however – but don’t take a firm stance on this position for now.

(5)



- ☞ The data from passives thus argues against the idea that there is a single head (e.g. Voice) which is responsible for the unaccusative-transitive alternation as well as the active-passive one.
- ☞ Rather, the evidence suggests that these alternations are encoded on two distinct heads, with the head responsible for encoding passivity being higher than that which introduces the external argument.

3 Introducing the *koɔ* morpheme

There is another type of morpheme which can occur in the Tamil verbal sequence:

- ☞ This is a morpheme *koɔ* which, we will argue, has a middle-like semantics.
- ☞ The distribution, syntax and semantics of this morpheme are also instructive in understanding the shape of the *v* domain in Tamil.

In the typical case, co-argument reflexivity in Dravidian is only possible under the presence of a morpheme *koɔ* suffixed onto the verbal stem, as (6) illustrates:

- (6) Sri_i tann-æ_{i,*j} aɔi-ččũ-kko-ɲɔ-aan/*aɔi-čč-aan.
 Sri[NOM] ANAPH-ACC hit-TR-*koɔ*[-PST-3MSG/*hit-TR.PST-3MSG
 “Sri_i hit himself_{i,*j}.”

koɔ also marks unaccusatives, as shown below:

- (7) Paanæ oɔɔ-**nɔũ**-ko-ɲɔ-adũ/*oɔɔ-**ččũ**-ko-ɲɔ-adũ.
 Pot[NOM] break-INTR-*koɔ*[-PST-3NSG/*break-TR-*koɔ*[-PST-3NSG
 “The pot got broken.” (rough translation)

- The distribution of *koɔ* seems to support popular analyses (see e.g. Alexiadou, Anagnostopoulou, and Everaert, 2004, for different proposals in this spirit) according to which reflexives and unaccusatives share an identical structural subcomponent, based on the observation that they are often identically marked crosslinguistically.

- I.e. it seems to bolster the idea that reflexivity is (always) a species of voice phenomenon.
- Based on very similar data, Lidz (2001, and subsequent), in fact, proposes that *ko|* in the closely related Dravidian language Kannada spells out a specifierless Voice head in unaccusative and reflexive structures, much along the lines of Embick (2004) for non-active morphology in Greek.

However, closer inspection reveals that *ko|* (at least in Tamil) realizes a head distinct from Kratzerian Voice (which I've been calling Trans):

I. *ko|*-suffixation on unaccusatives is fully optional, as illustrated in the minimal pair below:

- (8) Paanæ oɖæ-nɖ-ɖ-adũ/*oɖæ-čč-ɖ-adũ.
Pot[NOM] break-INTR.ASP-3NSG/*break-TR.ASP-3NSG
“The pot broke.”
- (9) Paanæ oɖæ-nɖũ-ko-ɖ-ɖ-adũ/*oɖæ-ččũ-ko-ɖ-ɖ-adũ.
Pot[NOM] break-INTR.ASP-middle-PST-3NSG/*break-TR.ASP-*ko|*-PST-3NSG
“The pot got broken.” (rough translation)

II. *ko|* marks not only reflexives and unaccusatives but may also optionally mark a (non-reflexive) transitive, as in (10):

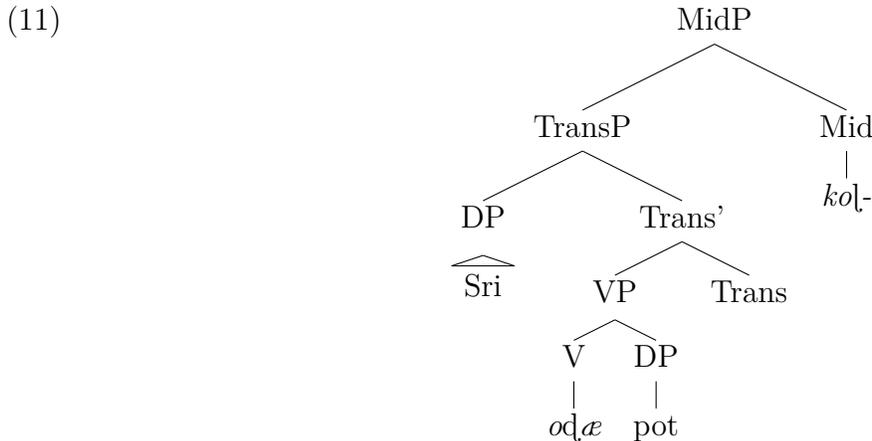
- (10) Sri paanæ-jæ
Sri[NOM] pot-ACC
oɖæ-ččũ-ko-ɖ-ɖ-aan/*oɖæ-nɖũ-ko-ɖ-ɖ-aan.
break-TR.ASP-*ko|*-PST-3MSG/*break-INTR.ASP-middle-PST-3MSG
“Sri got the pot broken.” (rough translation)

III. The verb form is phonologically marked as unaccusative vs. transitive even before *ko|*-suffixation. This is illustrated by the obligatorily non-geminated form of the morpheme immediately following the verbal stem in (9) and its obligatorily geminated form in (10).

We'll come back to the syntactico-semantic contribution of *ko|* momentarily, but it is important to note at this juncture that:

- ☞ Regardless of how *ko|* is ultimately analyzed, the data above show conclusively that the distribution of *ko|* has nothing to do the valency of the predicate it attaches to.
- ☞ I.e. it must represent a distinct syntactic head (call it F, for the moment) from Kratzerian Voice/Trans.
- ☞ This head is, furthermore, higher than Trans (as per the Mirror principle) since it linearly succeeds it.

Thus, a transitive *ko|* sentence like that in (10) would have the following structure:



3.1 Brief excursus into the syntax-semantics of *kol*

- *kol* is often treated in the Dravidian literature as a notoriously difficult morpheme to characterize, with a range of apparently internally inconsistent meanings, like self-benefaction or self-affectedness, volitionality, accident, inchoation from a state, the simultaneity or completion of an action (Schiffman, 1995; Annamalai, 1999; Steever, 2005).
- It is also often described as a reflexive marker, since its presence is typically obligatory to obtain co-argument binding – a characterization that the data above, however, reveals to be too simple.

Sundaresan (2012) investigates the effect of adding *kol* to a range of predicates culled from the Levin (1993) verb classes and also conducted a survey of such sentences against different discourse scenarios amongst native speakers, to hone in on its meaning contribution. Here, we briefly summarize the results:

- *kol* attaches to the derived result state of a main event predication such that the highest argument of this event *comes to hold* the result state of this event in their mental or physical space.²
- Thus, it introduces a semantics very much like those in Sells (1987)’s SELF and PIVOT roles.³

²This analysis of *kol*’s meaning is further supported by the extent to which *kol* is compatible with different verb-classes:

- Verbs that lack a result state (inherent statives) or actively resist the addition of one (involuntary emissives) are incompatible with *kol*.
- In contrast, change-of-state/location telic predicates (grooming, postural verbs, and change-of-state unaccusatives) especially “like” *kol*.
- All other verbs, which lack a telos but are compatible with the addition of one, are optional with *kol*.

³Sells characterizes as “SELF” “one whose mind is being reported” (Sells, 1987, 455). As for PIVOT, he states: “I understand PIVOT in a very physical sense . . . ; if someone makes a report with Mary as the PIVOT, that person is understood as literally standing in Mary’s shoes” (Sells, 1987, 455-456).

The contribution of *ko* is illustrated by the transitive *ko*-sentence below:

- (12) Mansi paal-æ uutt-i-ko-ŋd-aa].
 Mansi[NOM] milk-ACC pour-TR.ASP-*ko*-PST-3FSG
 “Mansi poured-*ko* the milk.”

- The addition of *ko* to the verb *uutt-* (‘pour’) in (12) contributes the information that the result state of milk-pouring comes to be evaluated from Mansi’s physical or mental space.
- Informally, we get the reading that Mansi either poured the milk *for* herself (mental space), or that she poured it *on* herself (physical space).

In a sense, therefore, *ko* associates the highest argument with an extra semantics, much like a θ -role:

- We propose that *ko* is a (thematic-)raising predicate (along the lines of Ramchand, 2008) (or a control predicate, as has been proposed for adjectival passives by Bruening (To Appear)) which raises the highest argument in the event predication to its Spec.
 - This raising property is crucial in explaining the obligatory presence of *ko* in typical cases of co-argument binding in Tamil.
 - Briefly, the addition of *ko* to a sentence like (6) allows the agentive DP to raise to a position where it can scope over the entire event predication giving it the right perspectival semantics required to antecede the anaphor.⁴
 - This in turn explains why, in structures where such a perspectival semantics is already encoded as part of the verb meaning, as in the case of psych-predicates, the use of *ko* is prohibited and co-argument binding still obtains.
- ☞ To sum up, the distribution of *ko* is thus very similar to that of *get* in English *kriegen* in German, and also to middles in languages like Ancient Greek (on which see Anagnostopoulou and Sevdali, to appear). This is why we refer to the head that *ko* spells out as Mid(dle).

$$(13) \text{ Formally: } \llbracket ko \rrbracket = \lambda Q_{\langle s,s,t \rangle} \lambda x \lambda e' \exists s. Q(s) \wedge Get(e') \wedge Locus(e', x) \wedge Theme(e', s)$$

- ☞ This denotation states that *ko* takes a stative proposition as its argument and binds off the state. It further takes an individual and a(n) (sub-)event and relates them to the result state. Specifically, *x-ko*-[AspP] means “x comes to hold the derived result state denoted by Asp”.⁵
- ☞ Note, finally, that the Locus predicate is underspecified with respect to whether it is interpreted as a mental or spatial locus. This information is contextually supplied.

⁴Anaphoric antecedence in Tamil, as in many languages, is perspectively determined. I.e. the antecedent denotes an individual in the evaluation context that holds a particular mental/spatio-temporal perspective with respect to the minimal predication containing the anaphor.

⁵This is incidentally a nice result because it is very close to the fully lexical meaning of *ko* in older stages of the language, where it means HOLD.

4 Putting it all together

Let us now return to the nature of the articulation within the *vP* layer:

- At this point, we have seen two markers that appear above Trans – the passive morpheme *paɖ-* in (4)/(5), and now the *koɭ* morpheme.
- One possibility – perhaps even a reasonable one, given that *koɭ* introduces a middle-ish ‘get’-type semantics – is that these markers are two alternative instantiations of the same structural position.
- The other logical option, of course, is that they represent two distinct structural positions.
- The latter possibility predicts that *koɭ* and the passive marker may co-occur, whereas the former predicts that they cannot.

As it turns out, *koɭ* and the passive marker *paɖ-* can co-occur, as illustrated below:

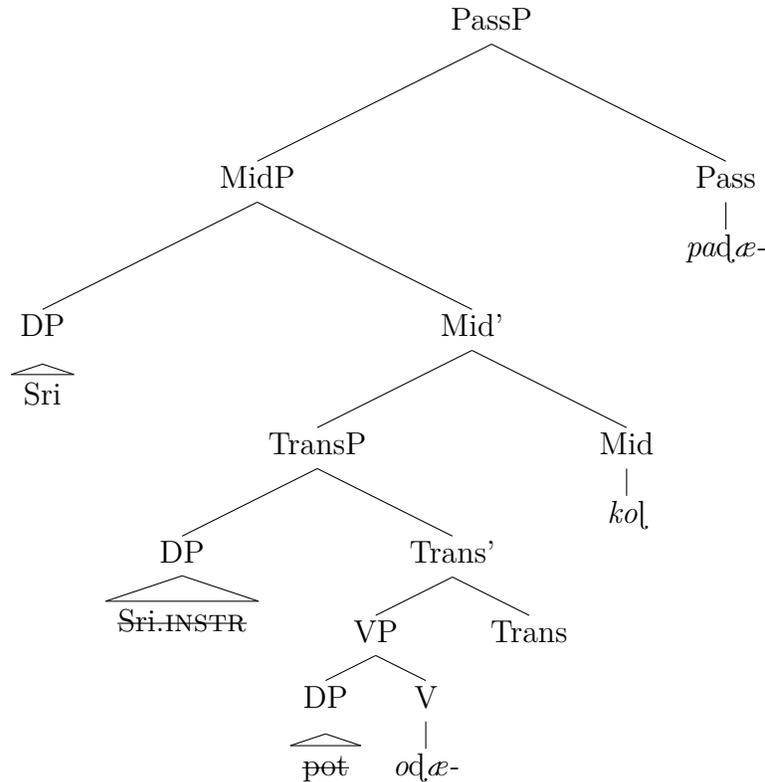
- (14) Paanæ Sri-aal
 Pot[NOM] Sri-INSTR
 oɖæ-ččũ-koɭ[æ-paɖ-t-adũ/*oɖæ-ččũ-paɖæ-ko-ɳɖ-adũ.
 break-TR-*koɭ*-PASS-PST-3NSG/*break-TR-PASS-MIDDLE-PST-3NSG
 “The pot got broken by Sri.”

- ☞ The possibility of a sentence like (14) shows conclusively that *koɭ* and the passive marker occupy distinct heads in the *v* domain.
- ☞ Furthermore, the ordering of *koɭ* and the passive marker is fixed: *koɭ* must linearly precede the passive morpheme, never succeed it, as shown above.
- ☞ This in turn indicates that Pass is higher than Mid, the head that *koɭ* spells out, which in turn is higher than Trans.

We thus have a final picture involving a higher degree of articulation in the *v* domain, as illustrated by the structure for (14) below:⁶

⁶Note, incidentally, that the DP that gets associated with the *koɭ* semantics – i.e. is raised into its specifier – is the AGENT Sri, not ‘the pot’. This is what we would expect if the external argument is still introduced in [Spec, TransP] even in the passive, but would require additional assumptions under a theory where the normal external argument position is empty and ‘by’-phrases are projected elsewhere.

(15)



5 Conclusion

- ☞ We have seen three pieces of data from Tamil: phonological gemination alternations that directly track alternations in transitivity, a middle marker *kol* with a semantics much like that of ‘get’ in certain ‘get’-passives, and a passive marker *padæ-*.
- ☞ These markers may crucially co-occur and do so in the following rigid relative ordering: Pass > Mid > Trans > V.
- ☞ Such data thus suggests that there isn’t a single *v* (or Voice) head in the *v*P, which is simultaneously responsible for encoding the syntactico-semantics of transitivity, reflexivity, and active-passive alternation.
- ☞ Rather, this information is distributed across a functional sequence of at least three distinct, rigidly ordered, contiguous heads.
- ☞ Thus, it makes sense to think of *v* as a layer or domain (much like with C), consisting of different heads manipulating various aspects of the event semantics, as proposed e.g. in Adger (2007) and more recently in Ramchand and Svenonius (To Appear).

A more general question is to what extent the nature and degree of this articulation is parametrized:

- ☞ If it is parametrized, we would need to show that passives, reflexives, and unaccusatives in other languages have systematically different meanings or have different possibilities for being combined with each other than in Tamil and Tamil-like languages.

- ☞ But if indeed it is *not* parametrized, and all languages have an articulated *v* layer such as that argued for here – a theoretically attractive idea – then the differences in surface patterns must be treated, not as a function of differences in underlying structure but of how that structure is realized (we could propose e.g. that the overt morphology in less inflected languages “spans” (Ramchand, 2008) a contiguous sequence in *v*).
- Potential empirical support for this alternative even in languages like English and German (which lack clear morphological evidence for the distinct heads) comes from constructions like the GET-passive, which shows ambiguity between “agent”-like and “patient”-like readings (as e.g. in “Susi got her teeth pulled out.”).
 - Simple voice-based “bundling” approaches must posit underspecification or syncretism to explain these facts whereas the current approach can deal with this quite easily by divorcing the semantics of transitivity from that of ‘get’.
 - Rather, this distinction would come about as a result of whether the ‘coming to hold’ semantics of ‘get’ (encoded in the Locus predicate in the denotation in (13)) is interpreted in a spatial or mental sense.

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