

Canonical switch-reference and categorical judgments*

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Hypothesis 1: The pivot of canonical SR is an object of a categorical judgment.
Consequences: The appearance of canonical SR is a sign of a categorical judgment.
Since CSR appears when there is only a Davidsonian event argument, that argument must be able to be the object of categorical judgment.

Hypothesis 2: Categorical judgment in a situation semantics involves asserting a property of an individual of which a subsituation (a *slice*) is part of the topic situation.
Consequences: Objects of categorical judgment must be individuals, which under this framework are required to exist if slices of them do.

Hypothesis 3: SR restricts the range of choices of categorical object, imposing a grammatical hierarchy.
Consequences: Thetic clauses, which ignore this hierarchy, are licit only in clauses without SR. Since languages like German have no SR, thetic clauses are in general allowed.

1 Switch-reference

SR is the morphological expression of the relationship held between two prominent arguments of ‘adjacent’ clauses. Jacobsen, Jr. (1967); Haiman and Munro (1983).

- Kiowa (Kiowa-Tanoan; Oklahoma)— (Watkins, 1984) for a grammar.
 - Arguments marked in preverbal clitic.
 - SR-morpheme fused with certain connectives (‘and’, ‘when’, ‘expressive *and*’)
 - Extensive argument drop.
- When two ‘adjacent’ subjects co-refer, **same subject (SS-)** marking is used.¹

(1) ∅= hēbà=**chē** èm= sáú
[3s] enter.PF=**when.SS** [3s:RFL] sit.down.PF
‘When she_i came in,(she_{i/*j}) sat down.

If the two subjects do not co-refer, **different subject (DS-)** marking is used.

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¹I will gloss incorporation with ‘+’, cliticization with ‘=’, other morpheme boundaries with ‘-’, and portmanteaux with ‘.’.

- (2) \emptyset = h́ébà=è èm= śáu
 [3s] enter.PF=**when.DS** [3s:RFL] sit.down.PF
 'When she_i came in,(she_{*i/j}) sat down.'

SR is a morpheme found at the edge of a clause. The 'thing it compares' is called the **pivot** is often thought to be the subject of the clause. In fact, this idea spurred Finer (1984) and Broadwell (1997) to tie SR to the DP in [Spec, IP].

But SR shows up in cases where the subject clearly is not the pivot.

- Non-canonical SR: SR-pivot is the topic situation (McKenzie, to appear)

- (3) Kathryn gà= gút **gàu** Esther=àl gà= gút.
 K. [3s:3p] write.PF **and.SS** E.=too [3s::3p] write.PF
 'Kathryn wrote a letter and Esther wrote one too.' (Watkins 1993)

- NCSR is not the focus of this talk, but will be relevant later.

So what about canonical cases where the subject is not the pivot?

- Dative arguments Watkins (1993)

- (4) góm+jǎgá á= dǎu-mê **gàu** \emptyset =
 wind+grease [\emptyset ;**3s**];3s] be-HSY **and.SS** [**3s**]; \emptyset :3s]
 báuláu+fǎu-l-è
 butter+eat-IMPF-HSY
 'He had mentholatum (Mentholatum was to him) and he was eating it like butter.'

- And what about when there is no DP argument? 'Expletive' arguments do occur, and are marked 3rd-plural inanimate.²

- (5) háðy gà= dǎumê=è ch'egùn è= qǎujé-hèl
 later [3p] be.HSY=when.DS dog [3s:3du] meet.PF-HSY
 'It was some time later when the dog met them.' (Watkins, pc)

- Curious case from Choctaw: Possessor Raising (Broadwell, 1997, 2006)

- (6) Choctaw
 a. Normal
 John im-ofi'-at illi-h
 John III-dog-NOM die-TNS
 'John's dog died.'
 b. Possessor Raising
 John-at im-ofi'-(at) illi-h
 John-NOM III-dog-NOM die-TNS
 'John's dog died.'

SR can track either nominative-marked DP.

²Indefinite person arguments (*à la* French *on*) are marked 3rd person plural inanimate.

- (7) John-at of_i-at im-ambiika-took [sa-kisili-tok-at]
 John-NOM dog-NOM III-sick-PAST 1sPP-bite-when.SS
 one: 'John_i's dog_j was sick when he_i bit me.'
 two: 'John_i's dog_j was sick when it_i bit me.'

- Clearly, 'subject' is not the proper category for SR-pivot. So what is?
- I propose: Object of categorical judgment. (OC)

2 Thetic and Categorical judgments

- Thetic/Categorical distinction (T/C):
 - Categorical— A property is predicated of an individual, the object of categorical judgment (OC)
 - Thetic— A description of an eventuality; no predication.
- (8) a. C: [The President] [DIED.]
 b. T: [The PREsident died.]

- To make the hypothesis more clear:

The pivot of canonical SR is an object of a categorical judgment.

- T/C was first proposed by Brentano, then Marty. Kuroda (1972) was the first to tie it into modern theoretical linguistics. (Sasse (1987) wrote a thorough survey.)
- T/C has been related to a wide variety of phenomena.

Author	Language	Category corresponding to OCs
Ladusaw (1994)	English	Strong quantifiers, ILP subjects
Kuroda (2005)	Japanese	- <i>wa</i> topic
Doron and Heycock (2003)	Japanese	- <i>ga</i> -marked Major Subject
Jäger (2001)	Hebrew	Broad Subject
	German	discourse-linked topic
Carminati (2002)	Italian	Items in [Spec, IP]
Frey (2004)	German	aboutness topic in Middlefield
Kim (2007)	Korean	left-edge <i>nun</i> -marked topics

- Ladusaw derived Milsark's Generalization via a requirement that subjects of individual-level predicates (ILPs) be an OC.
 - (9) a. A guinea pig was *intelligent / sick. (weak reading only)
 - b. Every guinea pig was intelligent / sick. (strong)
- Broad subjects are nominative-marked DPs that serve as a kind of topic.

- (10) ruti yeʃ l-a savlanut
 Ruti there.is to-her patience
 'Ruti has patience.' (Hebrew)

- (11) john-ga kurma-ga seibihuryoo na (koto)
 John-NOM car-NOM ill-conditioned is (fact)
 'John's car is ill-conditioned.'

- D& H argue that Broad Subjects are OCs.³ They resemble the Possessor Raising cases from Choctaw. In Japanese, it may be possible for a Broad Subject to co-refer with the subject of an embedded clause.

3 Similarities

The properties of OCs match a lot with those of canonical SR-pivots.

- They (almost) always have a strong construal.

- (12) Sâ-dàu pá è= sáúáudè=**chè** fígá àn ét=
 child-INV some [3inv] get.angry-**when.SS** food HAB [3i:3p]
 kóbé+déd-òp
 deliberately+spill-IMPF
 'When some children become displeased, they do spill food deliberately.'
 (Watkins, p.c.)

- (13) Hájél èm= kíf-àu **nègáu** ét= gún
 person.INDEF [3s.refl] get.up-PF **and.DS** [1s.refl] dance.PF
 'Someone (specific) got up and we danced.'

- Wh- pivots licensed, though only if we know someone left.

- (14) hájèl gà= ái [à= chán=**è**?]
 person.Q [3s:3p] take.off.PF [1s] arrive.PF=when.DS?
 'Who left when I got here?'

- They allow quantified DPs.

- (15) John jè à= kòbét-jàu **gàu** háun èm= gún-àu
 John all [3p.3s]= dislike-**impf and.SS** not [3p.refl]= dance-NEG
 'As for John, everyone disliked him and would not dance [when he was there]'

- Dislocation is a different thing altogether, as the last example shows, and the next.

- (16) John Bill áu= áu cút+à-dàu=**chè**...
 John Bill [3s:3i:3s]= give.PF write+stick-INV=**when.DS**...
 'When John gave it to Bill, the pencil...'

- They occur to the right of left-dislocated elements.

³Kuroda claims that it's wa-topics that are OCs. D&H point out that OCs occur in contexts where wa-topics are unavailable, such as in embedded generics.

- (17) John cúit gà háugà gàu...
 John book [3s:3p] buy.PF and.SS
 'John bought a book and...'
- (18) a. náu John háun yá áum-âu
 me John not [3s:3p:3p] give-NEG
 'To me, John didn't give the book.'
 b. * John náu háun yá áum-âu

- There can only be one OC per phrase, also, only one SR-pivot
- Both OC and SR-pivot are okay in embeddings.

Not all the properties match up, as this table shows.

property of OC	Frey	Jäger	Ladusaw	D & H	Can. SR
A-position	yes	yes?	yes	yes	prob
presupposed existence	yes	yes	yes	yes	yes
weak construal possible	no	no	no	no	?
strong construal possible	yes	yes	yes	yes	yes
specific indefinite possible	yes	yes	yes	?	yes
possessor-raising	N/A	N/A	N/A	yes	yes*
good with ILP	yes	yes	yes	yes	yes
good with SLP	yes	yes	yes	yes	yes
multiple OCs	yes	no	no	no	no
must be in discourse	no	yes	no	no	no
must refer	yes	yes	yes	?	?
QPs allowed	no	no(??)	yes	yes	yes
wh-allowed	?	?	?	yes	yes
any argument	yes	yes	yes	yes	no
topic must be overt	yes	yes	yes	yes	no

- Frey (2004) argues that multiple OCs are allowable in German, based on his syntactic definition:

- (19) Da sie₁ ihn₂ mag, wird Maria₁ Hans₂ wahrscheinlich helfen
 since she him likes will M. H. probably help

One might say to address this example that these aren't all the same kind of topic. Kim (2007) points out that in Korean, topics of different sorts (including the OC) occupy the same position area. Jäger dissociates completely scrambling from topichood, saying only that they are compatible.

- Jäger argues that OCs must refer to discourse entities; specifically they must be discourse-linked and anaphoric (modulo bridging). However, Frey shows this not to be the case for German (20a). Also, Broad subjects don't have to point to the discourse (20b). And SR pivots don't either (20c).

- (20) a. Weil er₁ müde war, hat ein Student₁ leider während des
 Since he tired was has a student unfortunately during
 Seminars geschlafen
 the seminar slept

- b. kafe tov ma'amidim oto li-rʃut ha-orxim
 coffee good stand.CAUSE.3MP it to-disposal (of).the-guests
 ba-boker
 in.the-morning
 'Good coffee (generic) is made available to the guests in the morning.'
- c. b́ená+è gà= káun nàu Tom qáú+è ∅= káun.
 ?+bread [1s:3s] bring.PF and.DS Tom fry+bread [3s] bring.PF
 'I brought cake and Tom brought frybread.'

I am not sure why OCs would need to be discourse entities. If categorical judgment involves picking an individual and predicating over it, the choice would be being made out of discourse entities. But the choice must be made out of DPs in the sentence itself.

Jäger and Frey both claim that quantified DPs make bad OCs, at least from a syntactic standpoint.

- (21) *Während des Vortrags haben mindestens zwei leider geschlafen
 during the lecture have at.least two unfort. slept

However, Frey's examples involve a small set of infrequent quantifiers ('at least two', 'almost everyone'), while Jäger merely says they're dispreferred.

More difficult are the cases where switch-reference differs from the other phenomena. For instance, OCs are claimed to need to be overt. Broad subjects do, and as Jäger puts it, "clauses without overt topics are always thetic" (p.119). This clearly doesn't apply in Kiowa or in most SR languages (e.g. see (1))

The most difficult stumbling block to equating canonical SR-pivots to OCs is that OCs can be filled by any argument, or even non-arguments. But canonical SR-pivots must be the highest argument. We'll explore this block later.

4 Semantics of switch-reference

A situation semantics based on Kratzer (1989, 2002, 2004)

- A situation refers to a part of a possible world. Situations are *particulars*; they are objects expressed in natural language, most often covertly.
- Situations are minimal (an idea originating with Berman 1988 and Heim (1990))
- Situations are related to each other by part-whole relations. Any situation is part of a larger situation ($s \leq s'$), except for worlds, which are defined as situations not part of any other.
- Situations need not be spatio-temporally contiguous, if the parts are coherently related—Poesio (1993); McKenzie (2007), and see Bennett 1988. (Resource situations are a useful diagnostic for this fact.)
- Truth-conditions differ from possible world semantics. Propositions are sets of situations, not sets of worlds, and are true not of the entire world, but of some part of it.

- In a discourse, topic situations are the situations an expressed proposition is true in. Asserting a proposition involves reference to a specific situation.
- All members of the set of individuals are in the set of situations.
- The situation semantics assumed here is not incompatible with Davidsonian event semantics; events are situations as well.
- Aspect is a relation between the event situation (e) and the topic situation (s), e.g.:
 $\llbracket \text{perfective} \rrbracket = \lambda P \lambda s. \exists e [P(s) \ \& \ e \leq s] : \langle st, st \rangle$

(22) A sample proposition: Alissa kicked Travis =
 $\lambda s. s \prec s^* \ \& \ \exists e [\text{kick}(\text{Travis})(e) \ \& \ \text{agent}(\text{Alissa})(e) \ \& \ e \leq s] : \langle s, t \rangle$
The set of situations s in the past where there is an event within s of Alissa kicking Travis.

4.1 Canonical SR

- Individuals are situations
- Topic situations are minimal, so any part of an individual not in the topic situation (or event situation) is excluded. Only a slice of the individual is involved (Kratzer, 1989). If he was 60 when this took place, his 30-year-old slice did not run the marathon. In fact, the slice of Bob that ate a big breakfast that morning didn't either.⁴
- So, every individual contains a bunch of slices, and each of these slices is a slice of a unique individual. So a slice of me will not be a slice of you. This means that the slices involved in a given situation must have corresponding individuals, which, assuming persistence, must exist— at least in the world containing that situation. (cf. Ladusaw's "much fuzzier" existence)
- A categorical judgment highlights an individual and predicates over it. Let us hypothesize this statement in terms of our situation semantics:

Hypothesis 2: Categorical judgment in a situation semantics involves asserting a property of an individual of which a subsituation (a *slice*) is part of the topic situation. The property corresponds to the proposition that is the set of situations saturated by the topic situation.

For instance, take the sentence *Travis arrived*. The entire situation *Travis* did not run the marathon— only enough of him did to do so.

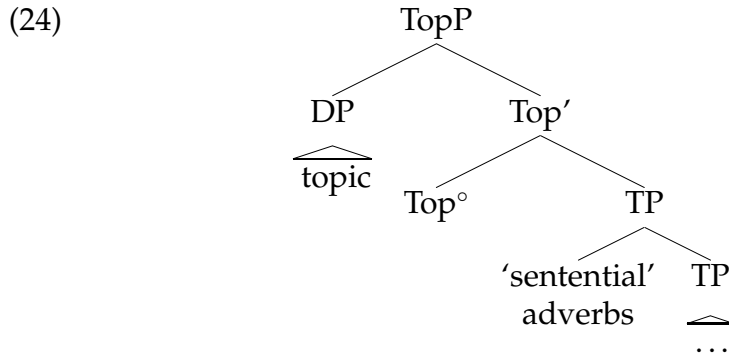
If a speaker makes the slice of Travis an OC, they assert that the property *slice.of.Travis ran the marathon in s* is a property of the individual Travis.

- (23) a. Variables: Individuals = $d : s$; Slices = $b : s$; propositions = $P \langle s, t \rangle$
 b. 'Individual' relation = $I(b)(d)$
 c. Names. Travis_b = the slice of Travis in a given s ; Travis_d = Travis.
 d. Existence entailment: Given an s , $\forall b [b \leq s \rightarrow \exists(d). I(b)(d)]$

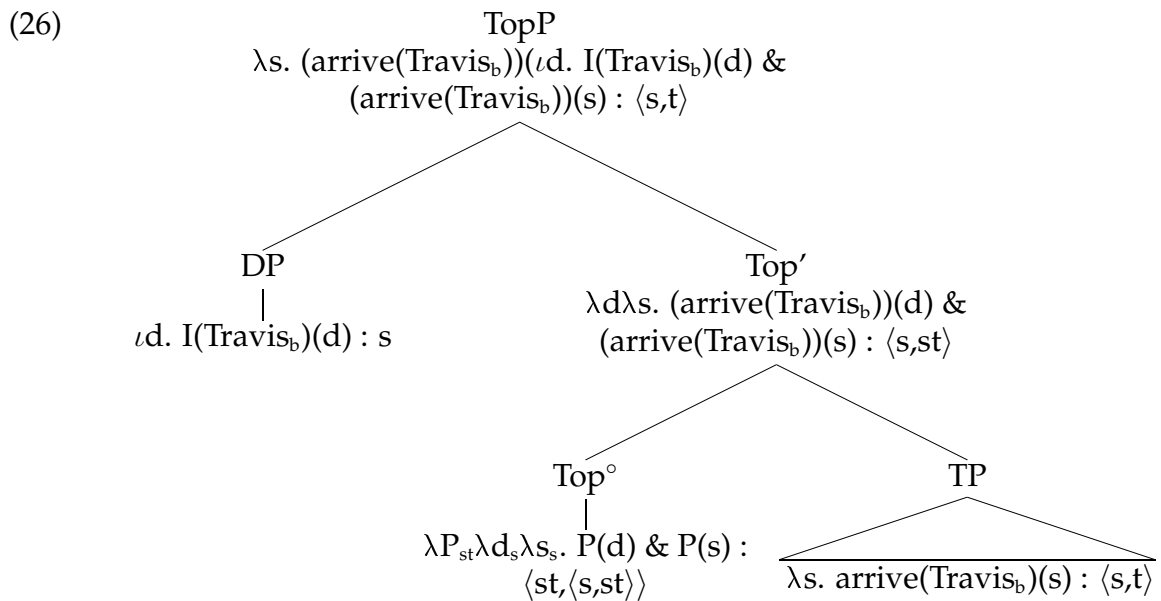
⁴Except perhaps under some extended meaning of the predicate that includes preparation, cool down, etc.

e. Categorical judgment = $\lambda P \lambda d \lambda s P(d) \ \& \ P(s)$

Here is an LF for a phrase like *Travis arrived*. The placement of the categorical judgment is as the head of a functional projection (call it TopP) superior to TP.



- (25) a. $\llbracket \text{Top}^\circ \rrbracket = \lambda P_{st} \lambda d_s \lambda s_s. P(d) \ \& \ P(s) : \langle st, \langle s, st \rangle \rangle$
 b. $\llbracket \text{Travis}_d \rrbracket = \iota d. I(\text{Travis}_b)(d) : s$



- There is no necessary discourse link, so OC/SR-pivot can be newly brought up.
- Imposes no constraint on what can be an OC.
- Proposition with categorical judgment \neq Proposition withthetic judgment.
 $[\text{Travis}] [\text{arrived late}] \neq [\text{Travis arrived late}]$
- It doesn't seem like this difference is truth-conditional, though. The following dialogue seems ridiculous:

(27) A: [The President] [DIED]

(28) B: You liar! #[The PRESident died!]

- Perhaps, then, a more accurate expression is one where the categorical judgment is asserted 'to the side', requiring a multi-dimensional theory of meaning.

5 SR restricts the choice of OC

- What about those cases when an SR-marked clause has no DP argument? There is an SR-pivot, but only the Davidsonian event argument, which triggers 3pl-inanimate marking.

(29) $[[s\acute{a}l]] = \lambda e. \text{be.hot}(e) : \text{'be hot'}$

- Events being OCs: Jäger equates this to theticity, and so does Carmi-nati (2002). That is, there is no actual distinction between thetic and categorical.
- In Kiowa, though, events can only be SR-pivots when there are no DP arguments. In this respect, Kiowa differs from German with respect to OC choice.
- Kiowa isn't alone in this: the same facts apply in other SR languages (Austin, 1981; Haiman and Munro, 1983; Bowe, 1990; Brill, 2004). So maybe SR is responsible for this restriction.
- The presence of the SR morpheme grammaticizes the choice of OC.

(30) **Hierarchy of OC choice with SR**
agent > dative > internal argument (objects, intr. subj.) > event

Hypothesis: What SR does is force two things: A categorical judgment, and a hierarchical choice of pivot.

- Both are perhaps derivable by a need for SR to deal with individuals. The categorical judgment is the only way to refer to complete individuals within a phrase.
 - The hierarchy may also be derivable along these speculative lines: Perhaps it reflects a hierarchy of individuation. Agents are more easily individuated than datives. The least individualizable are internal arguments and events. This may help explain why internal arguments are often of property-type, while external ones are not.
 - The need to deal with individuals will need to be expressed in any formal denotation of the canonical SR morpheme.
- Note that categorical judgments are not restricted to SR phrases. For instance, generic subjects are available without SR. It's just that SR tells us that we are dealing with one, even if it's about the event.
 - SR doesn't occur in the other languages we've looked at, and there's no restriction on OC. Not all Kiowa phrases bear SR; is OC-selection freer there? There's no evidence that any argument is prevented from being the OC when there's no SR. However, since overt DPs are so rare in Kiowa (Watkins, 1990), positive evidence may be hard to find. One encouraging fact is that most sentences with 'presentational' feel do not bear canonical SR, no matter what the language (Dahlstrom, 1982; Watkins, 1993; Stirling, 1993; Lungstrum, 1995).

6 In closing

Open question: How does SR do this? This restriction is in effect whether SS- or DS-marking is used. The solution to this question probably lies in the ultimate meaning of canonical SR. If canonical SR means what non-canonical SR does, then it means that *b* is part of some contextual *d*, that is identical to the *d* that was the topic of the previous or dominant clause. Typological facts indicate that it does mean the same thing, but what do semantic facts say?

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