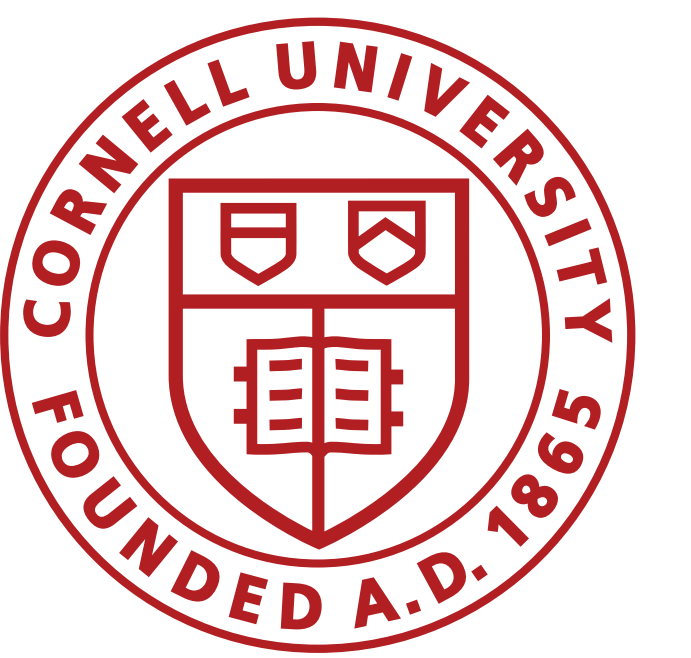


A SEMANTIC MODEL OF SWITCH REFERENCE IN KOASATI

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Objectives

- Model Koasati switch reference using Dekker's (1994) Predicate Logic with Anaphora

Introduction

- Switch reference (SR) is traditionally characterized as a way of indicating whether the subjects of two conjoined clauses are the same or different (Jacobsen 1993)
- Examples of SR in Koasati, a Muskogean language spoken in Louisiana and Texas, can be seen in (1)

(1) Joekak roomkã itcokhalihkok
Joe-k room[~] itcokhali:ka-k
Joe-SBJ room-OBJ enter-SS
Joe^j came into the room; (Koasati; Rising 1992: 4)

a. Edkã hihcok cokko:lit Ed[~] hi:ca-k cokko:lit
Ed-OBJ see-SS sat_down 'he_j saw Ed^k, and he_j sat down.'
b. Edkã hihcan cokko:lit Ed[~] hi:ca-n cokko:lit
Ed-OBJ see-DS sat_down 'he_j saw Ed^k, and he_k sat down.'

(2) Joe^j came into the room. He_j saw Ed^k. He_{j/k} sat down.

- Previous semantic analyses of SR include work by Stirling (1993) and McKenzie (2007, et seq.) analyze SR as tracking events or situations
- I pursue a reference tracking analysis for Koasati SR, modeling the switch reference data using Predicate Logic with Anaphora (PLA; Dekker 1994), a system that maintains an ordered list of individuals in a discourse
- The notation for the Two List system shown here is adopted from Bittner's (2001) Update with Centering

Background

- Koasati word order is typically SOV
- SR marking appears on the verb at the end of the clause
- The verbal ss and ds morphemes are homophonous with the nominal SBJ and OBJ markings

Morpheme	Attached to Noun	Attached to Verb
-k	subject (SBJ)	same subject (SS)
-n	object (OBJ)	different subject (DS)

Table 1: Subject, object, and switch reference morphemes

Breaking down the data

Clause	Verb Gloss	Subject	Object	SR Marker	Subject	Object	SR Marker
1.	entered	Joe	room	SS	Joe	room	SS
2.	see	Joe	Ed	SS	Joe	Ed	DS
3.	sat_down	Joe	-	-	Ed	-	-

Table 2: Breakdown of (1a) on left and (1b) on right

- The ss marker appears to maintain the order of subject and object while the ds marker swaps the order
- However, new, overt arguments can replace the ones made available by switch reference markers
- This is shown even more clearly in (3):

(3) Joekak roomkã itcokhali:kon. Edkak hihcan cokko:lit.
Joe-k room[~] itcokhali:ka-n Ed-k hi:ca-n cokko:lit
Joe-SBJ room-OBJ enter-DS Ed-SBJ see-DS sat_down
Joe^j came into the room, Ed^k saw him_j, and he_j sat down. (Koasati; Rising 1992: 4)

Clause	Verb Gloss	Subject	Object	SR Marker
1.	enter	Joe	room	DS
2.	see	Ed	Joe	DS
3.	sat_down	Joe	-	-

Table 3: Breakdown of (3)

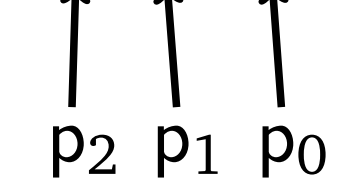
Data Summary

- SS marker:** makes SBJ and OBJ marked clause the available SBJ and OBJ, respectively, for the next clause
- DS marker:** makes SBJ and OBJ marked clause the available OBJ and SBJ, respectively, for the next clause

Predicate Logic with Anaphora (PLA)

(4) A PLA information state

$$s = \{ \langle a, b, c \rangle \}$$



- p_i : i indexes the position of the pronoun
- \exists : introduces individuals to information state

- Table 2 gives a PLA analysis of English (2)

English	PLA	Pronoun Interp.	Output State
a.			$s_0 = \{ \langle \rangle \}$
b. Joe _j came in.	$\exists x(x = j \wedge Cx)$		$s_1 = \{ \langle j \rangle \}$
c. He _j saw Ed _k .	$\exists y(y = e \wedge Sp_0y)$	$[p_0]_{s_1} = j$	$s_2 = \{ \langle j, e \rangle \}$
d. He _j sat down. He _k sat down.	$Dp_1 \quad Dp_0$	$[p_1]_{s_2} = j \quad [p_0]_{s_2} = e$	$s_3 = \{ \langle j, e \rangle \}$

Table 4: Analysis of PLA translations of (2)

One List PLA

- a-SBJ: $\exists z(z = a)$
- b-OBJ: $\exists x(x = p_0 \wedge \exists z(z = b))$
- intrans. verb: Vp_0
- trans. verb: Vp_0p_1
- SS: \emptyset
- DS: $\exists y(y = p_1)$

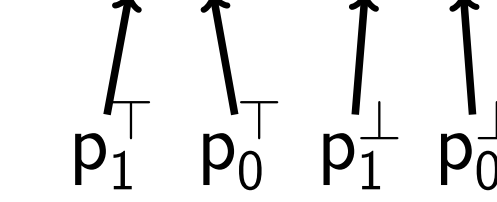
Gloss	PLA	Pronoun Interp.	Output State
a. Joe-SBJ	$\exists z(z = j)$		$s_1 = \{ \langle j \rangle \}$
b. room-OBJ	$\exists x(x = p_0 \wedge \exists z(z = r))$	$[p_0]_{s_1} = j$	$s_2 = \{ \langle j, r, j \rangle \}$
c. enter	lp_0p_1	$[p_1]_{s_2} = r, [p_0]_{s_2} = j$	$s_3 = \{ \langle j, r, j \rangle \}$
d. -DS	$\exists y(y = p_1)$	$[p_1]_{s_3} = r$	$s_4 = \{ \langle j, r, j, r \rangle \}$
e. Ed-SBJ	$\exists x(x = e)$		$s_5 = \{ \langle j, r, j, r, e \rangle \}$
f. see	Hp_0p_1	$[p_1]_{s_5} = r, [p_0]_{s_5} = e$	$s_6 = \{ \langle j, r, j, r, e \rangle \}$
g. -DS	$\exists y(y = p_1)$	$[p_1]_{s_6} = r$	$s_7 = \{ \langle j, r, j, r, e, r \rangle \}$
h. sat_down	Cp_0	$[p_0]_{s_7} = r$	$s_8 = \{ \langle j, r, j, r, e, r \rangle \}$

Table 5: Analysis of (3)

Two List PLA

(5) A two list information state

$$s = \{ \langle \langle a, b \rangle, \langle c, d \rangle \rangle \}$$



- a-SBJ: $\exists^T z(z = a)$
- b-OBJ: $\exists^T z(z = b)$
- intrans. verb: Vp_0^T
- trans. verb: $Vp_0^T p_1^T$
- SS: $\exists^T x(x = p_0^T \wedge \exists^T y(y = p_0^T))$
- DS: $\exists^T y(y = p_0^T) \wedge \exists^T x(x = p_0^T)$

Gloss	PLA	Pro. Interp.	Output State
a. Joe-SBJ	$\exists z(z = j)$		$s_1 = \{ \langle \langle j \rangle, \langle \rangle \rangle \}$
b. room-OBJ	$\exists^T z(z = r)$		$s_2 = \{ \langle \langle j \rangle, \langle r \rangle \rangle \}$
c. enter	$lp_0^T p_1^T$	$[p_0^T]_{s_2} = j, [p_1^T]_{s_2} = r$	$s_3 = \{ \langle \langle j \rangle, \langle r \rangle \rangle \}$
d. -DS	$\exists y(y = p_0^T) \wedge \exists^T x(x = p_0^T)$	$[p_0^T]_{s_3} = r, [p_0^T]_{s_3} = j$	$s_4 = \{ \langle \langle j, r \rangle, \langle r, j \rangle \rangle \}$
e. Ed-SBJ	$\exists z(z = e)$		$s_5 = \{ \langle \langle j, r, e \rangle, \langle r, j \rangle \rangle \}$
f. see	$Hp_0^T p_1^T$	$[p_0^T]_{s_5} = e, [p_1^T]_{s_5} = j$	$s_6 = \{ \langle \langle j, r, e \rangle, \langle r, j \rangle \rangle \}$
g. -DS	$\exists y(y = p_0^T) \wedge \exists^T x(x = p_0^T)$	$[p_0^T]_{s_6} = e, [p_0^T]_{s_6} = j$	$s_7 = \{ \langle \langle \dots, e, j \rangle, \langle r, j, e \rangle \rangle \}$
h. sat_down	Cp_0^T	$[p_0^T]_{s_7} = j$	$s_8 = \{ \langle \langle \dots, e, j \rangle, \langle r, j, e \rangle \rangle \}$

Table 6: Analysis of (3)

Conclusion

- The Two list version of PLA can account for the data here
- This analysis could be extended to
 - take into account agreement and other features
 - consider more complex argument structure

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