

**Testing Condition C
and Crossover Effects in ASL***

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Background

■ Conditions A, B and C

A. An anaphor must be co-indexed with a c-commanding expression in its local domain.

B. A pronoun should *not* be co-indexed with a c-commanding expression in its local domain.

C. An R-expression (= proper name or definite description) should *not* be co-indexed with a c-commanding expression.

■ Crossover effects

1. A weak violation is obtained if a quantificational expression moves to the left of a co-indexed pronoun.

2. A strong violation is obtained if a quantificational expression moves to the left of a co-indexed pronoun which c-commands its trace.

Goals

■ Questions

- a. **Short-term question:** Do binding-theoretic constraints hold of ASL pronouns?
- b. **Long-term question:** Can we determine whether the pronominal system of sign language has essentially similar / different properties as/from that of spoken languages?

Goals

- **What we know** (see Sandler and Lillo-Martin 2006 for references)
 - a. Indexes as indices
 - b. Strict and sloppy readings
 - c. Conditions A and B
 - d. Strong Crossover

- **Filling some Gaps**
 - a. Condition C
 - b. Weak Crossover (WCO) and Strong Crossover (SCO)

- **Our (somewhat sad) conclusion**
 - a. We have stable evidence for Condition C and WCO/SCO effects in our main informant (and signer on videos).
 - b. We only have weak and partial evidence from two further signers: the effects are drowned out by other issues.

Elicitation Method

- **Native signers** of ASL of deaf, signing parents. **Inf 1** signed all videos; **EJ** and **WR** provided additional judgments.
- **Playback method**
 - Stage 1:** **Inf 1** signs sentences of interest, as part of **paradigms** taped on a single video.
 - Stage 2:** **Inf 1** immediately **assess** the videos for acceptability (usually by comparing several sentences), using **ratings on a 7-point scale**. (We provide raw scores.)
 - Stage 3:** Stage 2 is repeated with **Inf 1** (often multiple times), as well as with **EJ** and **WR**.
- **Advantages:** (i) quantitative, controlled judgments; (ii) repeatability; (iii) Stage 3 is uncontaminated by English.

Condition C

Condition C

Condition C Violation => coreference impossible

*He_i will apologize to John_i's teacher.



c-commands

No Condition C Violation => coreference possible

[His_i teacher] will apologize to John_i.



does NOT c-command

Condition C

■ Initial challenges

(i) Condition C violations in which a proper name c-commands a proper name are weak.....

(ii) but independently of Condition C pronouns don't like to precede their antecedents in ASL ('backwards anaphora')

(iii) ... unless the pronoun *also* has another antecedent in the preceding discourse...

(iv) ... and it can sometimes help if the proper name co-occurs with an index (e.g. *IX-a JOHN*).

■ Initial discourse : JOHN_a ...

Target sentence 1: ... IX-a ... JOHN_a

Target sentence 2: ... IX-a ... IX-a JOHN_a

Condition C: Possessives

■ Condition C configuration

IX-1 JUST CONVERSATION JOHN_a PETER_c.

'I've just had a conversation with John and Peter.'

a. **IX-a** WILL MEET JOHN_a 'S GIRLFRIEND
TOMORROW

1 1 1 2 1 2

b. **IX-a** WILL MEET **POSS-a** JOHN_a GIRLFRIEND
TOMORROW

1 3 3 1 1 1

Intended: 'He_a will meet John_a's girlfriend tomorrow.'

- a. Possible Condition C effect (but see the control!).
- b. Same when *JOHN* co-occurs with *POSS-a*.

Condition C: Possessives

■ Control: backwards anaphora without c-command

IX-1 JUST CONVERSATION JOHN_a PETER_c.

'I've just had a conversation with John and Peter.'

a. POSS-a GIRLFRIEND WILL MEET JOHN_a

TOMORROW

6 6 4 4

b. POSS-a GIRLFRIEND WILL MEET IX-a JOHN_a

TOMORROW

6 6 6 6

'His_a girlfriend will meet John_a tomorrow.'

■ Possible effect, but... not enough judgments on the control

Condition C: Possessives

■ Another paradigm

IX-1 JUST CONVERSATION JOHN_a PETER_c.

‘I’ve just had a conversation with John and Peter.’

a. Condition C

IX-a WILL APOLOGIZE TO JOHN_a POSS-a TEACH PERSON.

‘He [= John] will apologize to John’s teacher.’

1 3 1 1 1

b. Control: backwards anaphora

POSS-a TEACH PERSON WILL APOLOGIZE TO JOHN_a

‘His [= John’s] teacher will apologize to John.’

5 6 2 1 1

- Clear effect for Inf 1; the other informants are at floor-level on the control: we cannot conclude to a Condition C effect. ¹¹

Condition C: Relative Clauses

■ Condition C configuration

IX-1 JUST CONVERSATION **PETER_a** JOHN_c.

a. **IX-a** LOOK LIKE THAT PERSON **PETER** LOVE.

3 3 4 4 2 3 2

'He [= Peter] looks like the person that Peter loves'

b. **IX-a** LOOK LIKE THAT PERSON **IX-a PETER** LOVE.

6 5 6 6 3 4 4

'He [= Peter] looks like the person that Peter loves'

■ a. Possible Condition C effect (but see the 2nd control!)

b. Contrary to the possessive case we saw before, the effect doesn't remain with *IX-a ... IX-a PETER*.

Condition C: Relative Clauses

■ Control: backwards anaphora without c-command

IX-1 JUST CONVERSATION PETER_a JOHN_c.

a. THAT PERSON IX-a LOVE LOOK LIKE PETER.

7 5 6 6 4 5 6

'The person he [= Peter] loves looks like Peter.'

b. THAT PERSON IX-a LOVE LOOK LIKE IX-a PETER.

7 7 7 6 4 5 7

'The person he [= Peter] loves looks like Peter.'

■ a. The controls with backwards anaphora are fine.

b. The paradigm is semantically well-controlled: 'x looks like y' has the same meaning as 'y looks like x'.

Condition C: Relative Clauses

■ Control: c-command without coreference

IX-1 JUST CONVERSATION PETER_a JOHN_c.

a. IX-a LOOK LIKE THAT PERSON JOHN LOVE.

777 6 3 33

b. IX-a LOOK LIKE THAT PERSON IX-c JOHN LOVE.

777 7 4 54

■ a. *IX-a* and *JOHN* do not corefer => acceptable for Inf 1, who clearly displays Condition C effects.

b. For EJ and WR, close to Condition C ratings: no or weak effect! (The devil is in the controls...)

Condition C: Intermediate Summary

- a. Informant 1 displays clear Condition C effects in the *IX-a ... R-expression* configuration.
 - b. Results are less clear in: *IX-a ... IX-a R-expression*
- We cannot conclude to the existence of Condition C effects in **EJ** and **WR** (nor to their non-existence): the subtle effects, if any, are drowned out by other issues (e.g. distaste for pronouns that precede their antecedents).
- a. An experimental investigation would be necessary to settle the issue.
 - b. It is important to have results per subject in addition to aggregate results: differences across informants are considerable.

Crossover Effects

Crossover Effects

Strong Crossover => movement to the left of a coindexed pronoun that c-commands the base position

*[Which professor]_i does **he_i** think that Mary loves t_i



Weak Crossover => movement to the left of a coindexed pronoun NOT c-commanding the base position

??[Which professor]_i do [**his_i** students] love t_i



Crossover Effects: Background

■ Strong Crossover Effects:

Lillo-Martin 1991, Sandler and Lillo-Martin 2006

- (i) Strong Crossover effects exist when movement is to the left in ASL;
- (ii) the effects are obviated with:
 1. a resumptive pronoun, and
 2. a null pronoun licensed by verb agreement (= directional verbs) in the original position of the moved element

Crossover Effects: Background

■ Strong Crossover Effects: Lillo-Martin 1991

_____t
a STEVE a PRONOUN EXPECT 1 PRONOUN

a. *LOVE t_i

b. LOVE a PRONOUN

c. 1 FALL-FOR a (a PRONOUN)

Intended: Steve_i, he_i expects me to a. love / b. love him_i / c. fall for (him_i)

- a. We believe Lillo-Martin's conclusion is exactly right.
- b. But there is an alternative analysis of her data: obligatory reconstruction of the topicalized element combined with a Condition C effect.
- c. Our examples involve *bona fide* wh-expressions.
- d. For the moment, we leave out directional verbs.

Strong Crossover

■ Strong Crossover effects without resumptive pronouns

a. **WHO IX-a** THINK MARY LOVE NO-MATTER
WHAT?

2 1 2 2 5

b. **WHO IX-a** THINK MARY LOVE **WHO** NO-MATTER
WHAT?

1 2 1 2 1.5 5

c. **WHO IX-a** THINK MARY LOVE NO-MATTER
WHAT **WHO**?

2 2 2 2 1.5 5

Intended meaning: Which person x is such that x think that Mary loves x unconditionally?

Strong Crossover

■ Control: no binding

a. **WHO** IX-2 THINK MARY LOVE NO-MATTER
WHAT?

777 6 6 7

b. **WHO** IX-2 THINK MARY LOVE **WHO** NO-MATTER
WHAT?

66 6 2.5 3 1

c. **WHO** IX-2 THINK MARY LOVE NO-MATTER WHAT
WHO?

77 7 3 5 6

■ a. In a., all informants display SCO effects.

b. In b., only **Inf 1** does - other informants are at floor.

c. In c., **Inf 1** and **WR** display an effect, **EJ** doesn't.

Strong Crossover

■ Obviation of Strong Crossover with resumptive pronouns

a. **WHO IX-a THINK MARY LOVE IX-a NO-MATTER
WHAT?**

7 4 3 1

b. **WHO IX-a THINK MARY LOVE IX-a WHO NO-
MATTER WHAT?**

6 5 5 6

c **WHO IX-a THINK MARY LOVE IX-a NO-MATTER
WHAT WHO?**

7 5 5 6

Intended meaning: Which person x is such that x thinks that Mary loves x unconditionally?

■ Clear effect for Inf 1; not so clear for other informants.

Weak Crossover

Strong Crossover => movement to the left of a coindexed pronoun that c-commands the base position

*[Which professor]_i does **he_i** think that Mary loves t_i



Weak Crossover => movement to the left of a coindexed pronoun NOT c-commanding the base position

??[Which professor]_i do [**his_i** students] love t_i



Weak Crossover

■ Basic Weak Crossover effects

a. **WHO_a POSS-a PARENT LOVE NO-MATTER WHAT?**

2 2 3 3 3 2

b. **WHO_a POSS-a PARENT LOVE WHO NO-MATTER
WHAT?**

2 2 2 2 2 1

c. **WHO_a POSS-a PARENT LOVE NO-MATTER WHAT
WHO?**

2 2 3 2 2 1

Intended meaning: Which person x is such that x's parents love x unconditionally?

Weak Crossover

■ Control: no binding

a. WHO_a POSS-2 PARENT LOVE NO-MATTER WHAT?

7 6 6 3 3 1

b. WHO_a POSS-2 PARENT LOVE WHO NO-MATTER
WHAT?

6 6 2 3 2 1

c. WHO_a POSS-2 PARENT LOVE NO-MATTER WHAT
WHO?

7 6 6 3 3 1

■ Clear WCO effects for Inf 1; others are at floor.

Weak Crossover

■ Obviation by resumptive pronouns

a. WHO-a POSS-a PARENT LOVE **IX-a** NO-MATTER
WHAT?

4 5

b. WHO-a POSS-a PARENT LOVE **IX-a** WHO NO-
MATTER WHAT?

5 5

c. WHO-a POSS-a PARENT LOVE **IX-a** NO-MATTER
WHAT WHO?

7 2

- Inf 1 appears to show partial obviation of the WCO effect in the presence of a resumptive pronoun.

Conclusion

- **Inf 1 reliably displays:**
 - a. Condition C effects in *IX ... R-expression* configurations.
 - b. Strong and Weak Crossover effects, which are **obviated by resumptive pronouns** (and directional verbs - not discussed)
- We cannot conclude to the existence of Condition C effects with our other informants.
- a. In one condition, it seems that Strong Crossover effects can be detected for **all informants**.
 - b. We cannot conclude to the existence of Weak Crossover effects for our other informants.
- a. **Problem:** subtle effects, drowned out by other issues.
 - b. **An experimental investigation is needed.**

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