

Non-native Acquisition from a Biolinguistic Perspective

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A perennial debate in SLA is whether non-native acquisition (NNA) is constrained by UG the way native-acquisition (NA) is.

At least two different positions can be distinguished in the debate:

- A Full Access Hypothesis (FAH)
NNA is no different from NA: both are constrained by UG.
- A No-access Hypothesis (NAH)
NNA is fundamentally different from NA: UG does not constrain NNA.
But the L2 learners can have access to the principles of UG via their L1s.

Two Facts of Language Acquisition

Fact 1: NA is different from NNA when compared with respect to the properties of *reliability* and *convergence*:

Reliability: Children always acquire their L1s

Convergence: Children end up with a mature language that is very similar to the language of others in their speech community.

NNA is not reliable: adults do not always acquire L2s

NNA is not convergent: the language adult learners acquire is generally different from the system spoken by the target language community.

A number of researchers have voiced this fact (e.g., Chomsky 1965, 1986, 1997, 2001; Lenneberg 1967; Bley-Vroman 2009). Below is a quote from Chomsky 1997

Like other kinds of growth, language acquisition happens easily at a certain age, but not later. There comes a time when the system doesn't work anymore. There are individual differences [...] **but for most people**, after adolescence, it becomes very hard. The system is just not working for some reason, so, **you have to teach the language as something strange**. (p. 128, emphasis added)

Fact 2: L2 learners often acquire subtle properties that are underdetermined by the input, and not explicitly taught.

In linguistic theory knowledge of such kind of properties is often assumed to derive from UG (i.e. to be innate, e.g. White 2003, Belikova and White 2009, a.o.). Such properties are said to highlight a poverty-of-the-stimulus (POS) problem, which means that the property in question cannot be derived from the input itself, but must involve knowledge of general principles not available in the input.

Disagreement between the FAH and the NAH with respects to facts 1 and 2:

FAH: The important fact is fact 2. Knowledge of an innate principle by the L2 learners demonstrates access of L2 acquisition to UG.

NAH: The important fact is fact 1. Knowledge of an innate principle by the L2 learners must come from their knowledge of their L1.

Which approach is right?

Researchers have tried to answer this question by conducting studies while keeping two conditions constant:

Condition 1: The phenomenon under investigation is a universal principle P (so that there is a POS problem)

Condition 2: P does not operate in the L1, but operates in the L2

Alleged predictions

NAH: Adult L2 learners cannot acquire knowledge of P, because NNA has no access to UG and P is presumably part of UG.

FAH: Adult L2 learners will acquire knowledge of P because NNA has full access to UG.

Example of such research: P = The Overt Pronoun Constraint (OPC) (Montalbetti 1984).

(1) **The Overt Pronoun Constraint (OPC):**

In languages overt and null pronouns, only the null pronouns can take a quantified expression as antecedent (Examples of quantified expressions: *nobody, someone, everyone, who*, etc).

The OPC is active in every language with the overt/covert pronoun distinction like Japanese and Spanish. (Pérez-Leroux and Glass 1997, 1999)

Spanish (Pérez-Leroux and Glass 1999)

- (2) Pedro_j y Juan_i están participando en un concurso.
Peter and John are participating in a contest.
- (3) a. Juan_i cree que él_{i/j}/Ø_{i/j} ganara el premio.
John thinks that he/Ø will win the prize.
- b. Nadie_i cree que él*_{i/j}/Ø_{i/j} ganara el premio.
Nobody thinks that he/Ø will win the prize.
- (4) Todo el mundo_i dice que el presidente habla de él_i/*Ø
'Everyone says that the president speaks about him'

Japanese (Kano 1997, White 2003)

- (5) a. Dareka-ga [kare-ga/Ø Kaataa-san-o sitteiru to] ittemimasita yo
Someone-Nom [he-Nom/Ø Carter-Mr-Acc know that] was-saying
'Someone was saying that he/Ø knows Mr Carter'
- b. Tanaka-san-wa [kare-ga/Ø kaisya de itiban da to] itte-iru
Tanaka-Mr-Top [he-Nom/Ø company in best is that] saying-is
'Mr Tanaka says that he/Ø is the best in the company'

Pérez-Leroux and Glass 1999 and Kano (1997) conducted studied native speakers of English studying Spanish and Japanese respectively.

Table 1: knowledge of the OPC by L2 learners of Spanish

Antecedent	Pronoun	L2 Spanish (n=18)	Native Spanish (n=20)
Quantified	él	0%	14%
	Ø	93%	85%
Referential	él	32%	68%
	Ø	58%	31%

Table 2: knowledge of the OPC by L2 Learners of Japanese

Antecedent	Pronoun	L2 Japanese (n=28)	Native Japanese (n=20)
Quantified	kare	13%	2%
	Ø	79%	83%
Referential	kare	42%	47%
	Ø	82%	100%

Conclusions:

- a. L2 learners seem to have knowledge of P.
- b. P cannot be attributed to the L2 learners' knowledge of L1: P is not active in the L1.
- c. P has been taken to prove NNA access to UG.

But then why does fact 1 obtain? There's a big tension here, a kind of paradox!!!

Question: Is the logic right?

The debate is based on the assumption that universal principles of language are principles of UG. But after the advent of the Minimalist Program, the assumption is not longer valid. Chomsky (2005) considers three factors in language design: Genetic endowment (UG), experience (Data) and principles not specific to the faculty of language.

The paradox only obtains if P is necessarily a principle of UG, but not if P is a principle of the third kind, like the principles of computational efficiency (e.g. principles of economy)

Alternative to the previous conclusion:

Investigate whether P is a principle of economy or the side effect of the interaction of a more abstract principle P' with principles of economy. Alternatives like this one has already been pursued to some extent in the field of native acquisition, e.g., by Grodzinsky and Reinhart 1993, Reinhart 2006, Di Sciullo and Agüero-Bautista (2008). **Extending it to the SLA can resolve the paradox.**

Part 2: Reducing the OPC to crossover phenomena.

Strong Crossover (Postal 1971/Wasow 1979)

- (6) a. *Who_i does he_i love t_i?
- b. Who_i t_i said that he_i was happy.
- c. *He_i loves every student_i
- d. Three body guards escorted every candidate ($3 > \forall$; $\forall > 3$)

Weak Crossover (WCO)

- (7) a. *?Who_i does his_i mother love t_i?
- b. Who t_i said his_i mother is happy.

- c. *?His_i mother loves every student_i
- d. **One of her children** accompanied **every candidate** to the stage. (inverse scope)

These contrasts appear in every language that we know of (exceptions are principled, e.g., languages with clitic pronouns)

Question: What is the relevant Principle?

Principles Proposed:

- (8) *Leftness*: An operator cannot bind a pronoun to the left of its variable (Chomsky 1976)
- (9) *A-Binding*: Pronouns can only be bound by traces (i.e. from argument positions) (Reinhart 1976)
- (10) *The Bijective Principle*: An operator can only bind one variable and a variable can only be bound by one operator (Koopman and Sportiche 1982).
- (11) **Definitions**:
 - a. **Binding**: A binds B iff A c-commands B and A and B are co-indexed.
 - b. **C-command**: A c-commands B iff every branching node that dominates A also dominates B.

Counterexamples:

- (12)
 - a. Who_i does [PRO_i fixing a car] get t_i fired?
 - b. Who_i does [PRO_i fixing his_i car] get t_i fired?
 - c. Who_i did [Bill's [vP **crashing his_i car**]] get t_i fired?
 - d. [The teacher's [vP **writing to his_i parents**]] got each child_i in my class into trouble.

New Principle:

- (13) **Overt Variable Constraint (OVC)**
 A variable v cannot depend on an operator O if v is overt and it is spelled out in the same spell-out domain of O or any of the copies (or traces) of O.
- (14) *Dependence*
 α depends on β iff whenever the value of β changes, the value of α changes as well.

Example: Three body guards escorted every candidate ($3 > \forall$; $\forall > 3$)

Assumption: The engine of language (i.e., narrow syntax, the computational system) derives sentences in a step-by-step/chunk-by-chunk fashion.

The OVC applies to variables/pronouns that are derivationally close or local to the trace of an antecedent operator. (*local* here means belonging to the same spell-out domain as its antecedent)

What's a spell-out domain?

Who did Roger Rabbit frame? the history of a sentence.

1: Merge ($\langle \text{frame}, \text{who} \rangle$) \Rightarrow [VP frame who]. 2: Merge ($\langle v, [\text{VP frame who}] \rangle$) \Rightarrow [vP v [VP frame who]]. 3: Merge $\langle \text{Roger Rabbit}, [\text{vP v [VP frame who]}] \rangle \Rightarrow$ [vP Roger Rabbit v [VP frame who]]. 4: Move *who* to the edge of vP \Rightarrow [vP who Roger Rabbit v [VP frame t]]. 5: **Spell out complement of v** \Rightarrow [vP who Roger Rabbit v [VP frame t_{wh}]]. 6: Merge $\langle \text{did}, [\text{vP who Roger Rabbit [VP frame } t_{wh}\text{]}] \rangle \Rightarrow$ [TP did [vP who Roger Rabbit v [VP frame t_{wh}]]]. 7: Move Roger Rabbit to TP \Rightarrow [TP Roger Rabbit did [vP who t_{sub} v [VP frame t_{wh}]]]. 8: Merge ($\langle C, [\text{TP Roger Rabbit did [vP who } t_{sub}\text{ [VP frame } t_{wh}\text{]}]] \rangle$) \Rightarrow [CP [TP Roger Rabbit did [vP who t_{sub} [VP frame t_{wh}]]]]. 9: Move *did* to C \Rightarrow [CP did [TP Roger Rabbit t_{did} [vP who t_{sub} v [VP frame t_{wh}]]]]. 10: Move *who* to CP \Rightarrow [CP who did [TP Roger Rabbit t_{did} [vP t_{wh} t_{sub} v [VP frame t_{wh}]]]]. 11: **Spell out complement of C** \Rightarrow [CP who did [TP Roger Rabbit t_{did} [vP t_{wh} t_{sub} [VP frame t_{wh}]]]]

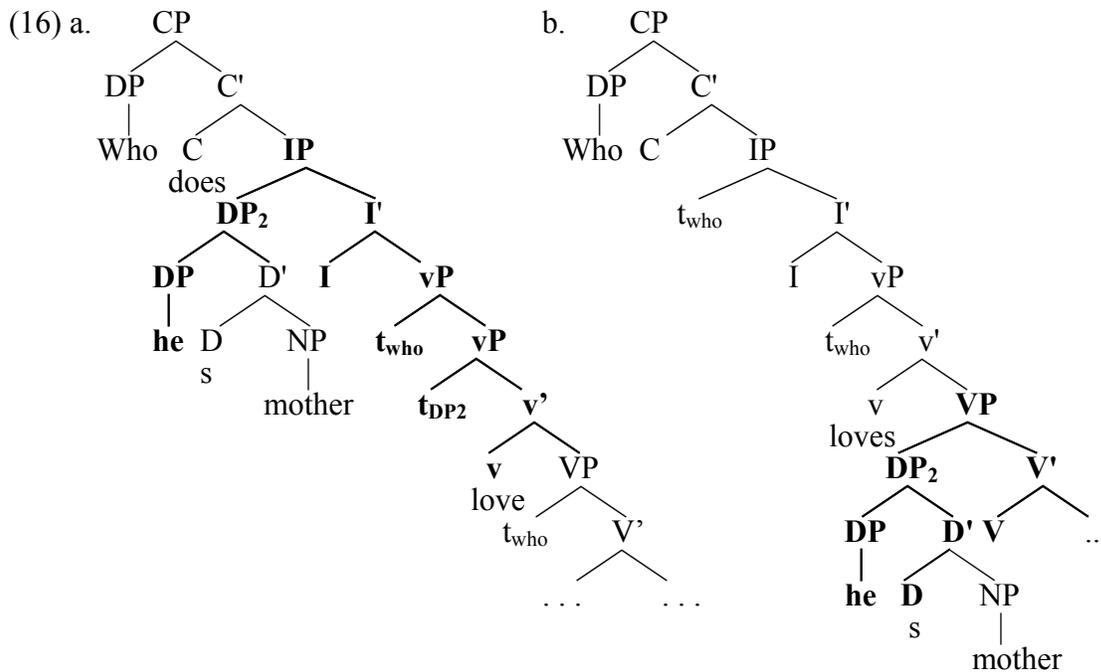
What are the spell-out domains? Answer: the complements of certain phrases like vP, CP and (possibly) DP (e.g., IP, VP, NP).

Does the OVC apply to the pronoun below? It depends on how close it is to the operator on which it depends.

(15) Who_i [vP t_i v said [CP that Mary [vP asked Susan to [vP kiss him $_i$]]]]

It doesn't, because the pronoun and the operator belong to different spell-out domains.

How does the OVC explain the contrasts above?



The OVC can explain the previous contrasts. Are there counterexamples?

(17) Who did Mary [vP t_{who} t_{Mary} introduce[VP t_{who} [PP to his advisor]]]

This sentence will be ruled-out by the OVC if the principle is not somehow turned off.

Possible Solution: the OVC is turned off by Richards' (1997) Principle of Minimal Compliance (PMC)

(18) *Principle of Minimal Compliance*

For any dependency D that obeys constraint C, any elements that are relevant for determining whether D obeys C can be ignored for the rest of the derivation for purposes of determining whether any other dependency D' obeys C.

(19) *Relevance*

An element X is relevant to determining whether a dependency D with head A and tail B obeys constraint C if

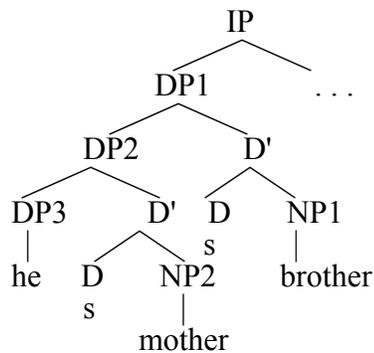
- X is along the path of D (that is, X = A, X = B, or A c-commands x and x c-commands B) and
- X is a member of the class of elements to which C makes reference.

Besides accounting for normal crossover phenomena, the OVC can account for the differential effect of embedding on the WCO effect.

- (20) a. ?*Who the hell_i does his_i mother love t_i?
 b. ?*Who the hell_i does his_i mother's brother t_i love t_i?
 c. Who the hell_i does his_j mother's brother love t_i?
- (21) a. Which employee_i did Bill's crashing his_i car get t_i fired
 b. Who the hell_i did Bill's washing his_i car upset t_i?

Why the asymmetry? Right embedding, but not left embedding, places the pronoun in a spell-out domain different from the one to which the operator or its trace(s) belong.

- (22) Left Embedding Structure for the Subject DP in (43b).



Independent evidence that the OVC view of crossover is the right one comes from a new kind of crossover that I call team WCO (TWCO).

- (23) a. Who put everything on the platter (pair-list possible)
 b. Who_i put everything on his_i plate (pair-list impossible)
- (24) a. Someone put everything on the platter (inverse scope possible)
 b. Someone_i put everything on his_i plate (inverse scope impossible)

Wide scope for the object quantifier is not possible if it has to cross over the higher quantifier and the latter binds an overt pronoun. The two operators combine to yield a crossover effect, hence the term TWCO. The inverse scope interpretation is possible if not crossover is involved:

- (25) a. [Who]_i did [everyone]_j t_j introduced t_i to his_i advisor? (√ PL)
 b. [Who]_i did [every witness]_j t_i say t_i put the sandwiches on his_i plate?
 (√ PL)
 c. Who_i did [each witness]_j t_j say t_i put the dishes on his_i tray? (√ PL)
- (26) a. [Someone from New York]_i seems to [everyone] t_i to have put the

sandwiches on his_i plate. (√DR)

What's the relation between the OVC and the OPC?

Suggestion: The OVC is the universal principle, the OPC is an interface strategy driven by computational economy. For any speaker with knowledge of the OVC, using bound null pronouns will be more economical than using bound overt pronouns, because null pronouns are exempt from the OVC.

For an English speaker the choice will never arise in English, but it will arise when he/she acquires languages with null pronouns like Spanish or Japanese.

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