

The 'Big DP' Hypothesis: Evidence from Gender Agreement in a Language Contact situation

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Clitics in Romance have been analyzed either as generated in the inflectional area of the clause matching or identifying the true argument (references) or as generated in argument position. In the second type of analysis, they adjoin to the verb as heads and move to inflection. One particular instantiation of this proposal is the idea that clitics are generated as determiners of a "big DP", which we label DP-CL in (1) ([1,2,3]). The big-DP analysis proposes that clitics are Ds generated under similar conditions to other Ds, and should therefore have similar distributional patterns ([4]). In this paper, we present an exploratory study that suggests a way to test the "Big DP" hypothesis experimentally in bilingual speakers of Spanish in contact with Shipibo, a language that lacks pronominal clitics and gender. We compare gender agreement patterns inside traditional DPs ("local DP agreement), with gender agreement between a clitic and its antecedent ("long-distance agreement"), as shown in (2). Similar agreement patterns in (2a) and (2b) would be consistent with the big-DP analysis, whereas dissimilar patterns would be more consistent with the alternative analysis.

(1) [_{IP} CL-V+T [_{VP} [_{DP-CL} CL [_{DP} D NP]]]]

(2) a. [_{DP} D_G [_{NP} N_G]]]

b. [CL_G ant_G]

From a second/bilingual language acquisition perspective, gender is known to be a divergent property ([5,6]). The study of Shipibo L1-Spanish L1/L2 speakers allows us to test the acquisition of local vs. long-distance clitic agreement in bilinguals, assuming some level of feature reassembly of gender takes place ([7, 8]) due to contact with Shipibo. We first determine whether gender is used to generate masculine and feminine noun classes in their Spanish as evidenced by local agreement, and we then test whether long-distance clitic gender agreement is operative.

-Methods. **Long-distance gender agreement (1).** Participants saw drawings of objects together with a bare noun naming the object in Spanish, ensuring familiarity with the noun's meaning. Then, they heard an imperative with a clitic, (3a) and b, and were asked to pick one of two images referring to a masculine and a feminine noun, respectively ([9]). This indicated clitic-antecedent gender agreement patterns. **DP-internal Gender agreement task (2).** After task 1, they were asked to provide a definite determiner for the same objects they saw at the beginning of task 1. The determiner indicates the assignment of the noun to a gender class through local agreement, which we could then match to the morphological ending of the noun. This task was given last to avoid priming.

(3) a. Cógelo

Take-CL.M

b. Cógela

Take-CL.F 'Take it'

-Participants. 20 Shipibo-Spanish bilinguals from Callería (Ucayali, Perú), ages (21-79) and living in a contact situation completed the two tasks using Psychopy, in addition to a linguistic background questionnaire and a proficiency task as part of a larger study. Participants underwent several training rounds to familiarize them with the computer and the task. **Results** showed a task difference. In the DP-internal agreement task, participants consistently assigned nouns to gender class (Table 1) whenever the noun ends in -o or -a ($\chi^2 (1, N = 439) = 249.10 p = 0.001$).

	-a	-o	-e	-C
MASC	14%	91%	50%	79%
FEM	86%	9%	50%	21%

Table 1. Task 1: % of Masc/Fem Ns indicated by determiner

In task 1, If the clitic's gender matched the gender assigned to the corresponding noun when they produced the determiner in task 2 it was coded as a case of successful agreement, otherwise, it was considered non-matching. The four possibilities are illustrated in Table 2.

	Clitic gender	Antecedent gender
Matching agreement (1)	Fem (<i>la</i>)	Fem (<i>la araña</i> , 'spider')
	Masc (<i>lo</i>)	Masc (<i>el cerro</i> , 'mountain')
Non-matching agreement (0)	Fem (<i>la</i>)	Masc (<i>el araña</i>)
	Masc (<i>lo</i>)	Fem (<i>la cerro</i>)

Table 2. Clitic agreement options in Task 2

As seen in Table 3, choice of antecedent was almost random (51.5% gender-matching antecedents vs. 48.5% non-matching ones). A generalized linear model (R, lme4) with Clitic-gender agreement ("Yes", "No") as dependent variable and noun Antecedent Gender-Assignment ("Masc", "Fem") as predictor revealed that gender-assignment of the antecedent was close to significant (Table 4). Specifically, Feminine had lower percentages of matching as shown in the agreement differences between *lo* and *la* clitics in the last two columns of Table 3.

	w/ <i>Lo</i> clitic	w/ <i>La</i> clitic
Matching	51.5%	61.5%
Non-matching	48.5%	38.5%
Total	100%	100%

Table 3. Percentages of total gender matching clitics by gender

N	gender-assignment (Masc/Fem)	Estimate	SE	P
		-0.33	0.18	0.07

Table 4 Effect of gender assignment to N on clitic agreement

Likewise, we tested whether the gender of the clitic would predict matching agreement patterns, but the generalized linear model with Clitic-gender agreement ("Yes", "No") as dependent variable and Clitic gender ("Masc", "Fem") as predictor did not show clitic gender as significant, suggesting that the gender of the clitic does not determine whether the clitic will agree or not with its antecedent. In sum, 1) nouns are assigned to gender classes, as signaled by local DP agreement; 2) long distance, CL-antecedent gender agreement is only a tendency, higher for masculine than feminine antecedents; 3) clitic gender does not seem to affect gender agreement with the antecedent.

-Discussion. We propose that DP-internal agreement is not the same operation as long-distance CL-antecedent agreement in these bilinguals. Shipibo-Spanish speakers systematically assign Ns to gender classes, as seen by agreement patterns between determiners and nouns, which also tracks morphological endings of nouns. However, clitic gender does not systematically match antecedent gender, particularly with feminine antecedents. These results are compatible with theories that do not assume clitics are generated in argument positions, inside a big DP, at least for this bilingual variety.

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