A cross-language reversal in illusory agreement licensing

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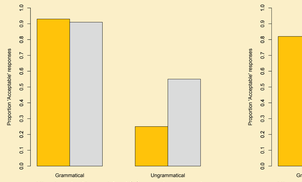
CONTEXT.

Speakers are more likely to erroneously produce a plural verb when an intervening plural noun is present [1]. Likewise, comprehenders are less likely to notice errors in similar structures [2]. This effect has come to be known as **agreement attraction**.

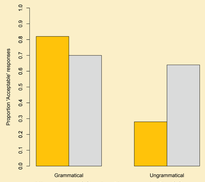
Several studies have found an asymmetry in the agreement attraction effect in English. The effect is always in the same direction: agreement attraction consistently creates illusions of grammaticality, but very rarely creates illusions of ungrammaticality.

The asymmetry in agreement attraction has been explained in terms of faulty retrieval processes, which are engaged only when correct agreement fails. A possible scenario: At the subject, a prediction is made about the features to expect on the verb. On the verb, if the prediction holds true, parsing continues as normal. Otherwise, the parser attempts to retrieve the error and makes a retrieval into memory to search for the subject. Some proportion of the time, the retrieval process retrieves the wrong NP, the intervener, and the sentence passes as grammatical [3].

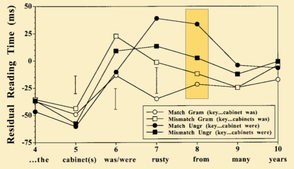
TYPICAL PREVIOUS RESULTS



The key to the cabinet(s) was/were rusty...
Speeded grammaticality judgment.
Experiment 7, Wagers, Lau, & Phillips (To appear)



The player(s) who the coach like(s) ...
Speeded grammaticality judgment.
Subexperiment 3, Wagers, Lau, & Phillips (2008)



The key to the cabinet(s) was/were rusty...
Self-paced reading.
Pearlmutter, Garnsey, & Bock (1999)

SUMMARY.

QUESTION What is the status of the agreement attraction effect in a language with richer agreement morphology?

RESULTS When agreement takes place with auxiliary verbs (*va*, *van*), the attested agreement asymmetry is still present, but **the effect in Spanish is the exact opposite of the English effect**: rather than showing a *grammaticality* illusion, Spanish readers show an *ungrammaticality* illusion—a previously unattested effect. When agreement takes place with main verbs, readers show neither illusion.

DISCUSSION.

Spanish illusory agreement licensing shows two properties seen in previous studies on English.

- Non-local attraction from RC heads.
- A grammatical asymmetry.

In English, these properties have been offered as evidence against a feature-percolation account of illusory agreement, which would predict symmetrical illusions [3]. The same arguments apply to Spanish.

However, the sharp cross-language contrast challenges other aspects of the earlier account of the grammatical asymmetry. The account of the grammatical asymmetry in English was strongly linked to detection of ungrammaticality. That is untenable for Spanish.

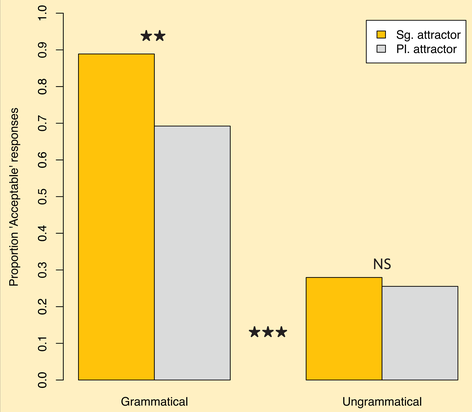
Evidence from English suggests that agreement illusions are entirely independent of thematic subject-verb processing [5], [7], and that illusion profiles are identical for main verbs and auxiliaries. In Spanish, the auxiliary vs. main verb contrast seen in Spanish suggests that thematic relations block agreement illusions.

The common factor between English and Spanish agreement illusions may be that it is **less marked** verb forms that are susceptible to interference.

ENGLISH	sees	**see**
SPANISH	**va**	van

EXPERIMENT 1A, SPANISH
AUXILIARY VERB AGREEMENT

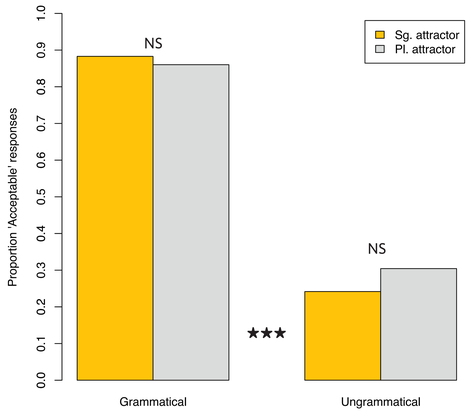
GRAM:	La nota que la chica va a escribir...
GRAM/ATTR:	Las notas que la chica va a escribir...
UNGRAM:	*La nota que la chica van a escribir...
UNGRAM/ATTR:	*Las notas que la chica van a escribir...



- Grammatical items are more likely to be judged ungrammatical with plural attractors than with singular attractors.
- No effect of number on ungrammatical items.

EXPERIMENT 1B, SPANISH
MAIN VERB AGREEMENT

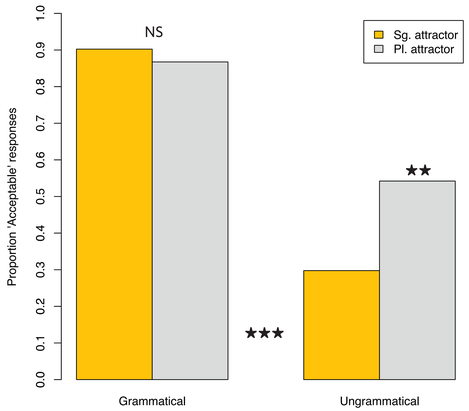
GRAM:	La nota que la chica escribió...
GRAM/ATTR:	Las notas que la chica escribió...
UNGRAM:	*La nota que la chica escribieron...
UNGRAM/ATTR:	*Las notas que la chica escribieron...



- No effect of number on ungrammatical or grammatical items.

EXPERIMENT 2, ENGLISH
INANIMATE INTERVENERS

GRAM:	The game that the girl plays...
GRAM/ATTR:	The games that the girl plays...
UNGRAM:	*The game that the girl play...
UNGRAM/ATTR:	*The games that the girl play...



- **Typical English effect observed.** Evidence that animacy is not the modulating factor in agreement attraction in Experiment 1.

We tentatively suggest that processing of an unmarked verb form triggers retrieval of agreement features on neighboring nouns, leading to illusions of grammaticality (English) and illusions of ungrammaticality (Spanish). However, much more work needs to be done to determine the exact source of this novel cross-language difference.

EXPERIMENT 2 RATIONALE In order to use the complementizer *que*, rather than the more complex *a los cuales*, preferred for animate RC heads, Experiment 1 used inanimate interveners. Previous English studies used animate interveners. This is a potential confound in the design of Experiment 1. It is possible that the intervener animacy is a factor that drives the attraction effect. This is addressed in Experiment 2, which shows that in English, inanimate interveners yield the same pattern of results as animate interveners.

MATERIALS AND METHODS **Procedure:** Speeded acceptability judgment task following RSVP. 300 ms/word, 2 s to respond. All experiments followed the same procedure. **Materials:** Examples presented above. 6 items per condition. Exp. 1A and 1B were run together, 48 targets total. An additional PP-subject agreement exp. was run concurrently (not reported here) with 24 targets, for a grand total of 72 targets. **Fillers:** 192 items, 50% contained errors not related to agreement. **Participants:** Experiment 1, n = 16, native Spanish speakers. Experiment 2, n = 16, native English speakers.

REFERENCES.

[1] Bock & Miller (1991) *Cog. psych.,* 23:45-93. [2] Pearlmutter, Garnsey, & Bock (1999) *JML* 41:427-456. [3] Wagers, Lau, & Phillips (In press) *JML* [4] Wagers, Lau, & Phillips (2008) CUNY. [5] Lau E., Wagers, M., Stroud C., & Phillips, C. (2008) CUNY. [6] Lau, Wagers, & Phillips (2007) CUNY. [7] Lau, Wagers, & Phillips (2009) CUNY.

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