Are gender and number different? Evidence from French binomials

Aixiu An & Anne Abeillé (Université Paris Diderot)
aan@mit.edu

Agreement is a way to establish a dependency between different elements (like Subject-Verb, Determiner-Noun) and involves different features: number, gender, person, which correlate with morphological and semantic properties. Whether number and gender features undergo a unitary matching process or different independent processing mechanisms has been discussed in the literature. However, previous studies have used different approaches and some have found differences (de Vincenci, 1999; Baber et al., 2005) while others did not (Nevins et al., 2007).

Inside a coordination phrase, agreement can target the closest conjunct (CCA), or the whole coordination (RES(olution)), e.g., singular and singular resolve to plural while masculine and feminine resolve to masculine (Corbett 1991). Recent experimental studies (An & Abeillé 2017) showed that CCA is allowed in French binomials *(N1 and N2)* and is different from attraction errors (Keung & Staub 2018).

This paper compares gender and number agreement in French binomials by an on-line and an off-line experiments and shows that they are not processed in the same way.

We built 24 experimental items with a 2*2 design: gender/number, match/mismatch with the closest conjunct (1). N1 and N2 are animate and differ in gender or number. We had 20 filler items (independent from this study). We ran Experiment 1 (acceptability rating on a 0-10 scale) with 38 Participants, and Experiment 2 (self-paced reading) with 41 Participants. Exp. 1 shows a significant interaction between feature and agreement strategies with a maximal mixed-effect linear model (fig.1): CCA is more acceptable than RES for gender, and has no significant difference with RES for number. We analyze reading times of Exp. 2 (Fig. 2) with a maximal mixed-effect linear model, with log transformed reading time as dependent variable and feature, agreement and word length as independent variables. The online reading time shows a significant slow down in the N1 region for mismatch. However, a significant interaction between match and feature is found in the N2 region. The reading time for number CCA is longer than for gender CCA. We do not find any spillover effect.

Gold et al. (2017) have argued that CCA is preferred when it matches Highest Conjunct agreement, but they don't distinguish between gender and number. We argue that CCA is preferred in French binomials because resolution causes a surprisal effect (Levy 2006) before seeing the coordinator, illustrated by a significant slow down of RES in the N1 region. However, the coordinator is considered as a cue for plurality (Schlueter et al. 2017). There is a conflict between the singular D that expects a singular N and the plurality of the conjunction (Liomor 2007), which results in a longer reading time for number CCA in N2 region. However, in contrast to number that is considered a meaningful feature for nouns, gender is a morphological maker (Ritter 1988). Thus, gender mismatch in the coordination is superficial and does not result in a slow down in N2 region. We conclude that number and gender are processed in a different way at least in coordination phrase and CCA is easier for gender than for number.

(1) CCA/ RES number]:

L'entretien | ennuie | la/les | candidate | et | recruteuse | malgré| les pauses.

The interview | bores | the.FSG/PL | candidate.FSG | and | recruiter.FSG | notwithstanding | the breaks.

[CCA /RES gender]:

L'entretien | ennuie | certaines/ certains | candidates | et | recruteurs | malgré| les pauses.

The interview | bores | some.FPL/MPL | candidate.FPL | and | recruiter.MPL | notwithstanding | the breaks.

Selected References

An, A & Abeillé, A. (2017). Agreement and interpretation of binominals in French. In Müller, S (Ed.): Proc. 24th HPSG Conference: 26–43. Keung, L.-C. and Staub, A. (2018). Variable agreement with coordinate subjects is not a form of agreement attraction. J of Mem and Lang, 103:1-18. Lorimor, H. (2007). Conjunctions and grammatical agreement: When wholes differ from the sum of their parts. PhD Thesis, U of Illinois. Nevins, A., Dillon, B., Malhotra, S., and Phillips, C. (2007). The role of feature-number and feature-type in processing Hindi verb agreement violations. Brain research, 1164:81-94. Schlueter, Z., Williams, A., & Lau, E. (2018). Exploring the abstractness of number retrieval cues in the computation of subject-verb agreement in comprehension. J of Mem and Lang, 99, 74–89. Vigliocco, G., Butterworth, B., and Garrett, M. F. (1996). Subject-verb agreement in Spanish and English: Differences in the role of conceptual constraints. Cognition, 61(3): 261-298.

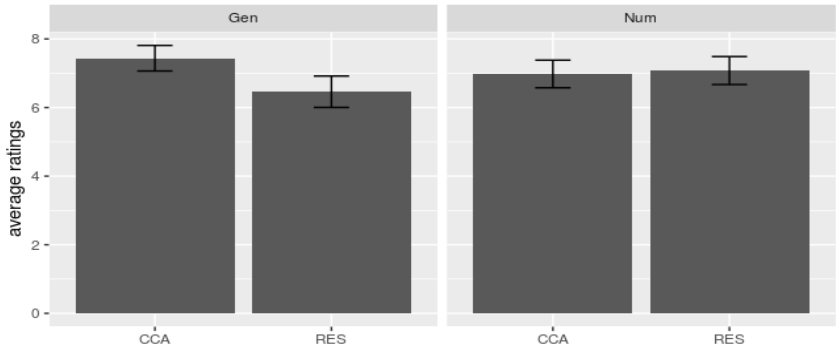

Figure 1

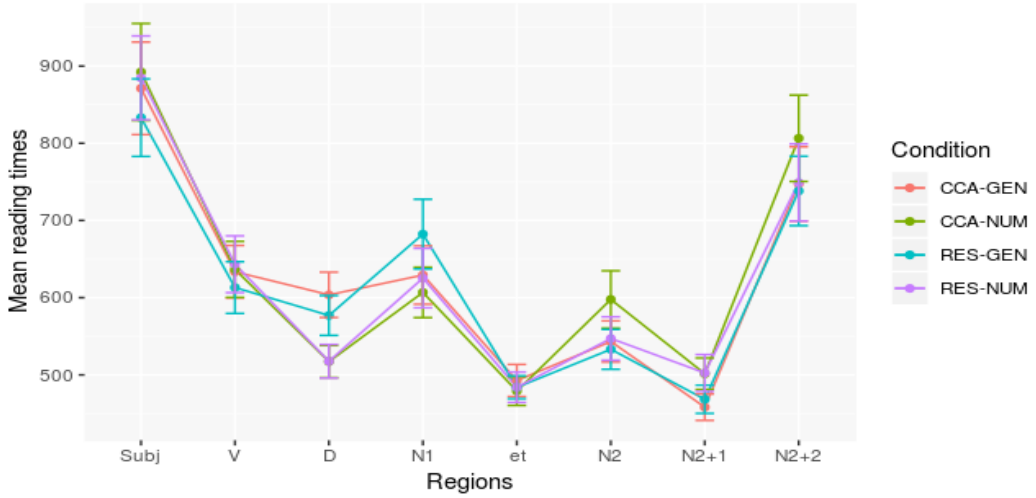

Figure 2