Grammaticality Judgments with Auditory Stimuli: Taking into Account Intonation and Interpretation of French *wh*-in-situ

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The increasing attention paid to the methodology for obtaining reliable grammaticality judgments constitutes one important development in grammar research in the last years. A number of authors have discussed this issue and presented their respective versions of a controlled experimental technique. This approach helped to highlight subtle, and sometimes theoretically crucial, nuances between constructions. However, we have missed a technique which also takes into account the intonation aspect of the sentence. This would allow the integration issues related to information structure, phonology and prosody into the experimental design. Therefore, this study presents a new methodology, a graded grammaticality judgment test with auditory stimuli (henceforth GGJA), and compares its results with those obtained by the graded grammaticality judgment test with written stimuli (henceforth GGJW). Such a complementary approach and the new method shall highlight the role that intonation plays in interpretation and acceptability of French *wh*-in-situ, a field with notorious disagreement among authors with respect to a number of crucial judgments.

There has been ample discussion concerning the question as to whether French *wh*-in-situ is sensitive to certain LF-interveners, like negation or embedding in *que*-sentences. Interestingly, Starke (2001) claims that French *wh*-in-situ in weak islands is well-formed, iff the sentence comes along with "a slight accent on the situ-wh" (p. 23). He distinguishes this intonation from a "standard" intonation, on the one hand, and from a (probably contrastive focus) accent, on the other. Referring to Starke's work (2001), Baunaz (2005) describes the "standard" intonation as "neutral" or rising, the one with the "slight accent" as fall-rise and the focussed one as a downfall intonation on the *wh*-element. Starke (2001) and Baunaz (2005) correlate the different intonation contours to distinct semantics with respect to presupposition: The "neutral" intonation can be non-presuppositional, the fall-rise intonation triggers a [+specific] presupposition and the downfall intonation a [+range] presupposition with respect to the *wh*-element. The crucial point is that Starke (2001) associates these different interpretations to different movement types: the non-presuppositional one (neutral intonation) to Q-movement and the two presuppositional ones to what he calls Qβ-movement. By adding the additional element β (the existential presupposition with wide scope), a configuration with extraction out of weak islands reads as (1), hence it is not precluded by Relativized Minimality.

(1) $Q\beta \ldots Q \ldots Q\beta$

In order to obtain a reliable basis of evidence, three possible cases of LF-intervention effects, namely *wh*-in-situ embedded in *que*- or *si*-sentences, as well as *wh*-in-situ with negation, were tested using the GGJA.

(2) *tu penses que Jean mange quoi?*
you think that Jean eats what
'What do you think does Jean eat?'

(3) *tu te demandes si Jean mange quoi?*
you yourself ask whether Jean eats what
*'What do you wonder whether John eats?'

(4) *Jean a pas mangé quoi?*
Jean has not eaten what
What has Jean not eaten?

Furthermore, both the GGJW and the GGJA were used to evaluate *wh*-in-situ questions (without possible interveners) of the type (5) and (6), in order to carry out a direct comparison between both methods.

(5) *Thomas voit le médecin quand?*
Thomas sees the doctor when
'When does Thomas see the doctor?'

(6) *Philippe appelle qui?*
Philippe calls who
'Who does Philippe call?'

The sample consisted of 102 French native speakers between 18 and 45 years from Paris. The methodology for the GGJW corresponds to the approach described in Adli (2004): The subjects essentially use, after ample instruction and training, the technique of graphic rating in order to judge each sentence in a graded manner, relative to a reference sentence which is a scale anchor. For the GGJA the test sentences had been recorded by a native speaker experienced in acting. In order to precisely reproduce the three different intonations, each test sentence was embedded for the recording session in a context, triggering the interpretation with specific or range presupposition, or without presupposition. The final test did not contain the context, but only the *wh*-questions with the corresponding intonation. The subject listened to the sentences by headphones and could decide to repeat a sentence.

(2), (3) and (4) were tested with the GGJA with all three intonation contours mentioned above. Two-way repeated measures ANOVAS show a significant effect of construction type ($p < 0.000$), of intonation ($p < 0.000$), and of the interaction construction x intonation ($p < 0.000$). *Wh*-in-situ with negation as in (4) is significantly better with fall-rise intonation, than with the two other contours, confirming Starke's (2001) intuition. Surprisingly, however, the lowest grammaticality values for (2) are observed with the fall-rise intonation. This fact could either be explained by assuming that French *wh*-in-situ in *que*-sentences does not trigger intervention effects and/or by assuming that the interpretation of the *wh*-in-situ does not only correlate with intonation but also with the type of the intervener, i.e. there is a complex interaction interpretation x intonation x intervener.

The latter is corroborated by the results of another two-way repeated measures ANOVA on constructions (5) and (6). These two construction types were tested with the GGJW, as well as with the GGJA (again with three intonation patterns). The main effect of "method type" reveals significant ($p < 0.000$): The highest grammaticality values are obtained with the GGJW and with the GGJA with neutral intonation. However, the values obtained with GGJA with fall-rise intonation are significantly lower ($p < 0.000$) - the same holds for GGJA with downfall intonation. It seems as if subjects do not consider a reading with specific or range-based presupposition, when they are confronted with written stimuli. This might well constitute a source of methodological error, when syntactic phenomena are under study which interact with interpretation and intonation.

Furthermore, I will argue that an intervener like NEG not only blocks the path to Q-movement but also "opens" the path to Qβ-movement, which explains the significant decrease in grammaticality in the case of Qβ-movement of *wh*-in-situ without such an intervener.

References

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