Contextual and Prosodic Disambiguation of French Concord and Discord.

Introduction. Although commonly classified as a Negative Concord (NC) language since it readily allows single negation readings of Negative Concord Items (NCI) sequences (1c), French has widely been acknowledged to also tolerate Double Negation (DN) or Negative Discord, albeit as a marked option (De Swart, Corblin, 1996). This DN tolerance, diagnosed by Zeijlstra (2004) as a symptom of the still ongoing historical change of the doubling negative head 'ne', is often regarded as a French exception. However, in a series of cross-linguistic experiments using a picture choice preference task, DN readings were shown to not only be sometimes preferred over NC readings in French, but also to arise to a much greater extent than previously thought in solid NC languages, like Catalan (Deprez & als (2015) and Deprez et als (2014, to appear). These results clearly underscore the theoretical significance of determining where and how DN readings can emerge for a deeper understanding of the nature of NC. Although prosody is an often-cited influencing factor for DN tolerance, it was not taken into account in these previous experiments, which relied on written presentation, due, to a large extent, to the current penury of relevant information. Indeed, although prosodic research recently conducted on Catalan: Tubau et al., 2015, Catalan and Spanish: Prieto et al., 2013, and Dutch: Fonville, 2013) confirmed the disambiguating role of intonation for NC/DN interpretation for some (Cat,Sp) but not all (Dutch) of these languages, there are at present, for French prosody, only informal notes in the literature (Corblin 1996, Tovena&Corblin 2008), but no solid experimental evidence of the potentially distinct intonation profile of either NC or DN readings for multiple negative sentences. This paper presents the results of experimental work that sought to address this current gap. Here, we experimentally investigated the roles of context and prosody in the disambiguation of simple French transitive sentences with two NCI.

Method: 28 native French speakers (18 women; 10 men: age range: 18-45) were presented with simple transitive sentences containing two NCIs respectively in subject and object positions (1c) each embedded in disambiguating contexts (40 items divided in 2 conditions (NC vs. DN context (1a.b)), with two controls (single NCI), and fillers, 8 tokens each, pseudorandomized) totaling 1,120 responses. Subjects reading contexts and targets, first silently, and then aloud, as if to a child, were recorded on a high quality Asus Orion PRO gaming headset with a noise-filtering microphone. Contrasting with previous experiments, the success of our elicitation contexts was controlled for, as each of our target sentences was followed with a verifying statement judged as T/F in relation to the target item (1d). Target sentences all used the same 8 monosyllabic verbs controlled for frequency. Use of sonorants was maximized, and sentences ended with a PP to avoid sentence final tone on the object NCIs. Context elicitation success and prosodic profile were analyzed. For the former, responses to verification questions were evaluated against intended context interpretation. For the latter, target sentences with context-matching interpretations were extracted and analyzed using Praat. Sentence contour, average pitch (F0 values for 10 time-normalized points per syllable, de-meaned by subject) and F0 peak value on NCIs were obtained using ProsodyPro (Xu, 2013) and analyzed statistically.

Results: ***NC/DN-Interpretation:*** (n=28). Responses matched context at 79.91%, showing that overall this is a very strong factor in determining French NC vs. DN interpretation. Mismatches occurred more in DN contexts (27.23%) than NC (12.95%) (errors in controls: 3.79%). For 8/28 participants, interpretation was context independent up to 75%, showing that NCI sequences are not equally ambiguous for all subjects (fig. 1). 7 favored NC, but 1 consistently choose DN. Non-consistently matching items and subjects were removed from further analysis, to ensure complete interpretation transparency for prosodic analysis. ***Prosody:*** (n=20) Average F0 values, obtained over a critical portion of experimental items, (10 value points per syllable over 6 syllables) (per/sonne/ ne/ [verb]/ rien/ + 1/[PP]) for each interpretation, showed a markedly higher average F0 on the second NCI in the DN (-9.11Hz) vs. NC (-13.57Hz) interpretation (p=.05) as well as a higher F0 peak value, still on the second NCI (DN 16.90Hz, NC 6.54HZ) (p=.05). Visual inspection of computed F0 average contours over the same segment per subject and per interpretation further revealed 2 distinct group profiles: a first one, obtaining for 70% of our subjects, shows an even more significant higher F0 average on the object NCIs in the DN (21.44Hz) reading as compared to NC (3.04 Hz) (p=01). For a second, smaller group (n=4), a markedly higher pitch was observed on the subject NCIs, in the DN vs. NC interpretation, with no pitch distinction on the object NCI. (2 subjects did not conform to either of these patterns, showing no significant difference between NC vs. DN readings). For subjects in the first group, Peak F0 value of the second NCI was found to be higher on the DN interpretation (p=.01). For those in the second group, the sample was too small to yield significance on a two-tailed statistical test but showed significance for one tail, at the .05 level for the difference in peak F0 value over the second syllable of the subject NCI (DN 109.58Hz, NC 74.43Hz). These results provide experimental evidence that NC and DN interpretations are indeed prosodically distinguished in French, with a higher pitch accent on one of the two NCIs, preferably the object one, in the DN interpretation, and both present in the same grammar with no evidence of historical divide.

Sample disambiguating contexts & critical item.

(1) a. *Dans notre famille, on est tous allergique à l'alcool :* NC Context
(In our family, we are all allergic to alcohol)

b, *Chez les jeunes, la consommation d'alcool est effrayante :* DN Context
(In the youth population, alcohol consumption is frightening)

c. ***Personne ne boit rien dans les soirées***. Critical test Item
(Nobody drinks anything/nothing at parties)

d. *Ils ne boivent pas d'alcool.* Interpretation verification sentence
(They don't drink alcohol) T for (1a)/F for (1b)

	NC Interpretation	**DN Interpretation**
NC Context	43.53% (195)	6.47% (29)
DN Context	13.62% (61)	36.38% (163)
Total	***57.14% (256)***	***42.86% (192)***

Fig. 1. NC vs. DN responses by subject

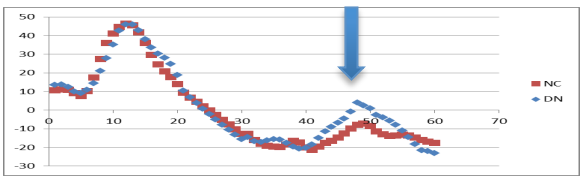

Fig. 2.average f0 pitch contour for NC vs. DN interpretations

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