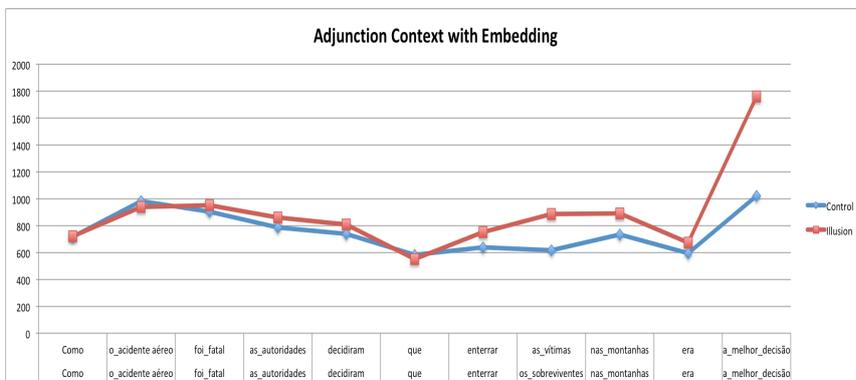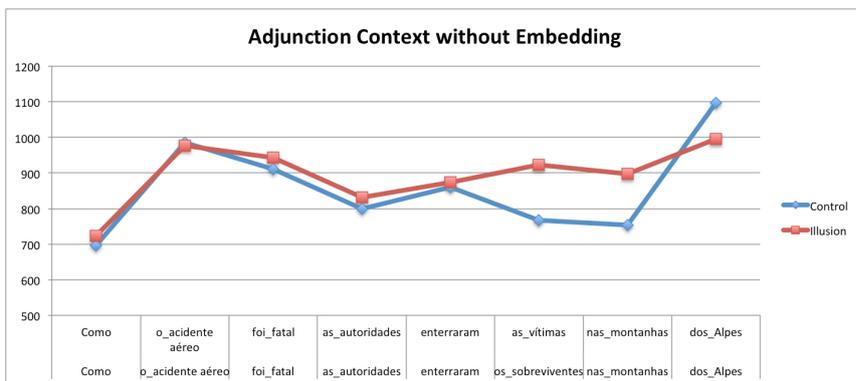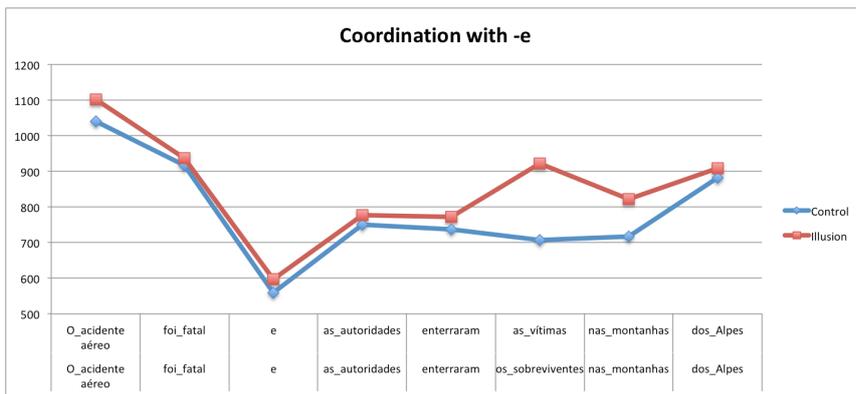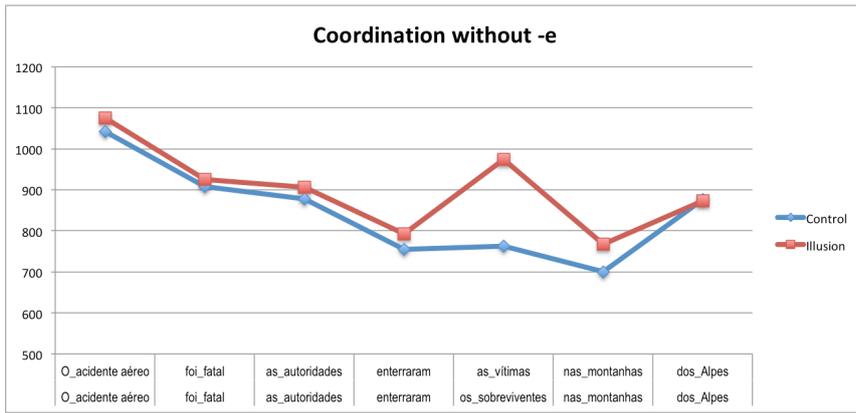# IS IT POSSIBLE NOT TO NOTICE THE EVIDENCE?

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ABSTRACT:

Understanding a linguistic expression typically requires integrating it into a discursive context. This often requires resolving ambiguities at different conceptual levels and, in some cases, the incremental stimulus seems to deceive the *parser* and cause a *semantic illusion*, as in (i) '*As the plane crash was fatal, the authorities buried the survivors in the mountains*'. In order to explain the operations involved in fully processing and resolving the illusion caused by the use of *survivors* instead of *dead* in (i), there is a dispute between theories as to whether comprehenders should resort to pragmatic knowledge in addition to lexical and syntactic restrictions. Seeking to better understand the impact of structural complexity in sentence computation, where there is a mismatch between the processor and the final representation, we designed an online self-paced study (PCIbex Farm Platform) in Brazilian Portuguese, comparing clauses at three levels: (1-2) Coordination – *The plane crash was fatal (and) the authorities **buried the survivors** on the mountains*, (3) Adjunction – *Since the plane crash was fatal, the authorities buried **the survivors** on the mountains* and embedding), and (4) Embedding – *Since the plane crash was fatal, the authorities decided that burying **the survivors** on the mountains was the best option*) with control sentences, such as, *The plane crash was fatal, (and) the authorities buried **the dead** in the mountains*. Evaluating the participants' ability to notice the evidence –***the survivors***, that is the semantically unexpected word, our results show that the susceptibility to *semantic illusions* can be influenced by *structural complexity*: 67% of the participants fail to notice the evidence in the most structurally complex sentences (4-Embedding) *versus* 39% in less complex sentences (1-2 Coordination) (t (69) = 0.05 p* <0.0541). We also found different reaction times (RTs) between the conditions explored: reflecting higher processing costs in sentences with a higher degree of structural complexity – embedding clauses (4) obtained average processing times for the critical segment greater than (1-2) coordinated clauses (CO: 756ms *versus* EMB: 889ms - t (69) = 0.93 p * <0.0355). In this study, the *semantic illusion* was used to measure *the difficulty of processing syntactic embeddings vis-à-vis* other constructions and, the relationship between *noticing the unexpected word and structural complexity seems to be inversely proportional*: the more complex the structure, the less we are able to notice the *semantic illusion*.

Coordination without -e

Legend: Control, Illusion

X-axis labels (top row / bottom row):
O_acidente aéreo / O_acidente aéreo; foi_fatal / foi_fatal; as_autoridades / as_autoridades; enterraram / enterraram; as_vítimas / os_sobreviventes; nas_montanhas / nas_montanhas; dos_Alpes / dos_Alpes

Coordination with -e

Legend: Control, Illusion

X-axis labels (top row / bottom row):
O_acidente aéreo / O_acidente aéreo; foi_fatal / foi_fatal; e / e; as_autoridades / as_autoridades; enterraram / enterraram; as_vítimas / os_sobreviventes; nas_montanhas / nas_montanhas; dos_Alpes / dos_Alpes

Adjunction Context without Embedding

Legend: Control, Illusion

X-axis labels (top row / bottom row):
Como / Como; o_acidente aéreo / o_acidente aéreo; foi_fatal / foi_fatal; as_autoridades / as_autoridades; enterraram / enterraram; as_vítimas / os_sobreviventes; nas_montanhas / nas_montanhas; dos_Alpes / dos_Alpes

Adjunction Context with Embedding

Legend: Control, Illusion

X-axis labels (top row / bottom row):
Como / Como; o_acidente aéreo / o_acidente aéreo; foi_fatal / foi_fatal; as_autoridades / as_autoridades; decidiram / decidiram; que / que; enterrar / enterrar; as_vítimas / os_sobreviventes; nas_montanhas / nas_montanhas; era / era; a_melhor_decisão / a_melhor_decisão

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