Grammatical illusions in sentence processing: At the interface of performance and competence

Brian Dillon

University of Massachusetts, Amherst

One question of interest for psycholinguists is the question of how closely real-time sentence processing routines align with grammatical knowledge: does the competence grammar directly constrain sentence comprehension, or does it play a secondary role, 'cleaning up' the results of a comprehension process driven by heuristic processes (e.g. Lewis & Phillips, 2015; Patson & Ferreira, 2007; Townsend & Bever, 2001)? Much experimental work has provided evidence for the view that the human sentence processor is fairly directly constrained by grammatical knowledge even at the earliest stages of analysis, suggesting a very tight link between grammatical knowledge and the sentence processor. However, a puzzle for this view is the observation that there are many apparently simple grammatical constraints, such as subject-verb agreement, that comprehenders seem unable to accurately apply during comprehension (e.g. Wagers, Lau & Phillips, 2009). Such 'grammatical illusions' have been accounted for by appealing to independently motivated aspects of the parser, such as an interference-prone working memory architecture (Phillips, Lau & Wagers, 2011; see also Frazier, 2015).

Research on grammatical illusions has generated a wealth of psycholinguistic data that bears on when, and how, grammatical constraints guide the analysis of linguistic input. Overall the data reveal a pattern of 'selective fallibility': some linguistic dependencies fall prey to grammatical illusions quite readily, others do not (Phillips et al, 2011). This leads to an important theoretical question which is the focus of my talk: when, and why, do comprehenders violate grammatical constraints during sentence comprehension? In this talk, I will review some of the work in this area, and discuss processing models that have been proposed to account for these processor-grammar divergences. I will then discuss two case studies from our group at UMass Amherst on the processing of reflexive binding dependencies (work with Shayne Sloggett) and the licensing of negative polarity items in comprehension (work with Jon Ander Mendia and Ethan Poole) that provide new insight into the factors that create grammatical illusions in comprehension. These studies suggest that some grammatical illusions actually have grammatical bases, reflecting 'subgrammatical' linguistic constraints. This study suggests that grammaticality illusions are no mere performance errors; instead, they are regular and predictable behavior that provides a unique window into normal grammatical mechanisms and normal processing mechanisms alike.