

David Potter Research Statement

In my research program, I explore how a speaker’s linguistic knowledge interacts with how we produce and comprehend language. The driving intuition is that we can use experimental and psycholinguistic methods to explore the theoretical questions about the grammar and its interface with the parser. Empirically, I focus on the nature of long-distance dependencies, locality constraints on these dependencies, and their interaction with prosodic and information structural phenomena. The key finding of this program is that, while the parser is sensitive to fine-grained grammatical properties, including the structural representation of information structure, the locality constraints known as islands are generally the result not of constraints on processing but rather structural and interpretational constraints.

Ellipsis and Island Constraints

The central aim of my research on ellipsis, prosody and information structure, and island configurations is to determine to what degree and in what way island constraints arise as a product of the narrow syntax, interface conditions, and language processing factors. Complicating the picture is the fact that certain types of ellipsis, where a fragmentary utterance is interpreted as if it were the complete counterpart of that fragment, appear to ameliorate the unacceptability that results from violations of various kinds of locality constraints.

In my dissertation (Potter, 2017) and subsequent work, I showed that non-contrastive Stripping, e.g. (1), completely ameliorates definite relative clause island effects, while contrastive Stripping, e.g. (2), only *partially* ameliorates them (Potter, 2017, 2019b, Potter & Carlson 2019c, 2019b). The partial amelioration of island constraints by ellipsis was a novel finding; prior discussion of amelioration effects generally take the amelioration to be complete, where it does apply. These findings raise new and interesting questions about island effects and why ellipsis should ameliorate them. This partial island sensitivity I attributed to a garden path effect: the ambiguous information structure of the antecedent in these constructions leads to a misparse of the antecedent. This confounding garden path is likely the source of the uneven judgments reported in the literature concerning the island (in)sensitivity of contrastive ellipsis. Thus, careful experimental work is crucial in controlling for confounding factors. In recently published work with Dr. Tim Hunter, and Dr. Masaya Yoshida, we explored the grammatical component of the amelioration effect, and, on the basis of experimental results using Binding Condition C manipulations, argued against the so-called “Evasion Approaches” to ellipsis island amelioration. Ellipsis genuinely *repairs* island violations (Potter, 2017; Yoshida, Potter, & Hunter, 2018). Ongoing work continues to explore three issues raised by this research.

- (1) a. A: Peter appreciated the student who studied a middle-eastern language.
b. B: Yeah, Turkish.
- (2) a. A: Peter appreciated the student who studied Arabic.
b. B: No, Turkish.
c. B: Yeah, and also Turkish.

First, the partial ellipsis island amelioration effect suggests that at least some island constraints are the result of some grammatical constraint, which can be ameliorated by ellipsis, and some other factor, which cannot. If this factor unfixable by ellipsis is the result of a processing constraint, then manipulating the factors that induce the processing difficulty should result in varying partial amelioration effects. Here, both on- and off-line experimental techniques will be crucial, including an exploration of the realtime correlates of processing difficulty using self-pace reading and eye-tracking while reading paradigms. Such online measures are crucial for examining how speakers incrementally build linguistic representations, and how these unfolding representations interact with non-linguistic factors, such as working memory span and attention. This approach to the nature of island violations is, to my understanding, novel, and promises to substantially move our understanding of the phenomena forward.

Second is exploration of locality constraints beyond the definite relative clauses examined in my

dissertation. It has been suggested that various types of locality constraints have a myriad of sources; some are due to derivational constraints on syntactic structures, and others due to representational constraints. Some have been claimed to be due to interpretational constraints, and some to processing constraints. If we take ellipsis to ameliorate only those aspects of island violations due to representational syntactic constraints, examining ellipsis island amelioration effects across various island types can diagnose the source of those constraints. Ongoing work examines subject islands, which show complete amelioration under ellipsis, and factive islands, which show no ellipsis island amelioration effect at all (Potter, & Carlson, 2019c, 2019d; Potter, 2019a, 2019b). Together, these results suggest that while subject and relative clause island constraints are due to PF-interface factors, rather than derivational, information structural, or processing constraints, factive islands have a source in interpretational constraints.

The third issue is that of the cross-linguistic generalizability of island effects and their amelioration by ellipsis. I have recently begun research on Turkish, with Dr. Emrah Görgülü, and we have found that Ellipsis in Turkish also ameliorates a variety of island violations (Potter & Görgülü, 2019). The project will include an experimental component conducted in the summer of 2020.

Prosody, Information Structure, and Parsing

The second thread of my research program stems from my work as a post-doctoral research associate for Dr. Katy Carlson. In this research, we examine how the grammatical properties of information structure interact with parsing mechanisms to impact how linguistic representations are constructed by listeners in real time. Examples like (3a) are ambiguous between a high and a low attachment of the temporal modifier *on Monday* (3b,3c). We explore how the resolution of this attachment ambiguity is impacted by prosodic and information structural factors. A pitch accent on either the matrix or embedded verbs in (3a) will draw the attachment of the ambiguously attached modifier; this is known as the *focus attraction effect* (Schafer et al. 1996; Lee & Watson 2011; Carlson & Tyler 2018). This attraction we argue to be due to the linguistic properties of focus, rather than the result of the salience associated with a pitch accented focus (Carlson & Potter 2018; Potter & Carlson 2018, 2019a).

- (3) a. James said that Mary arrived on Monday.
- b. James said, on Monday, that Mary arrived.
- c. James said that, on Monday, Mary arrived.

The key insight is that the information structure of an utterance can be cued, and constrained by, various grammatical constructions and prosodic features, including not just pitch accents, but also question-answer congruence and focus sensitive operators. We show that these various cues for focus attract ambiguously attached modifiers. Crucially, when multiple cues are present, the modifier is attracted to the focus sensitive operator itself, rather than to the position of the acoustically salient pitch accent. If the focus in such instances is associated directly with the focus sensitive operator itself, this suggests that the impact of information structure on sentence processing is properly characterized by linguistic structures interacting with parsing heuristics, rather than by cognition general attentional mechanisms.

Ongoing work examines how information structural cues impact the interpretation of various focus sensitive operators in ambiguous elliptical constructions, as illustrated in (4)-(5). Dr. Carlson and I have found that the focus cues in the antecedents (4a-4b;)5a-5b influence how Stripping continuations are interpreted. The location of the emphatic *do* in the antecedent guides where the negation in the stripping continuation is resolved with respect to the content of the antecedent. A high emphatic *do* leads to more resolutions in which the negation is interpreted as located within the matrix clause, e.g. (4c) and (5c) rather than (4d) or (5c). These results hold of island (5) and non-island antecedents (4) alike, which we argue is further evidence in favor of a structural analysis of ellipsis in which island violations are repaired, rather than evaded (Potter & Carlson 2020).

- (4) a. James DID say that Mary called Bill, but not Alex.

- b. James said that Mary DID call Bill, but not Alex.
 - c. ...but James didn't say that Mary called Alex.
 - d. ...but James said that Mary didn't call Alex.
- (5)
- a. James DID meet the student who called Bill, and not Alex.
 - b. James met the student who DID call Bill, and not Alex.
 - c. ...and James didn't meet the student who called Alex.
 - d. ...and James met the student who didn't call Alex.

Summary

Taken together, this research program represents the application of cutting edge on- and off-line experimental techniques to long-standing and deeply fundamental theoretical problems in the study of grammatical knowledge and its interaction with parsing mechanisms. This theory-driven empirically oriented approach to the nature of this interaction not only represents our best chance at making theoretical headway into the empirical phenomena, across all approaches to their explanation, but also serves as a bridge between traditional linguistics research and the broader cognitive science community.