This paper reexamines the Ross (1967) claim that while interrogative (+Q) CPs are islands for wh-extraction, as shown in 1a, declarative (-Q) CPs are not, as shown in 1b. As noted in Bresnan (1970) and shown in Example 2, CP-taking verbs like claim subcategorize for -Q complements (that or $\emptyset$), whereas CP-taking verbs like wonder subcategorize for a wide array of +Q continuations (whether, if, and embedded questions).

We adopt the +Q hypothesis of islandhood, but unlike Ross (1967), we claim that weak islandhood results from failure of the parser to process the heightened ambiguity of +Q continuations. We implement a Derivational Minimalist Grammar (Stabler, 1997) which distinguishes between +Q and -Q complementizers, deriving the paradigm in Example 2, and use Entropy Reduction (Hale, 2006) to model the difficulty of whether-islands found by Alexopoulou and Keller (2007).

We hypothesize that the incremental ambiguity of wonder class verbs which subcategorize for +Q complements results in greater cognitive load for a predictive, incremental parser, triggering weak islandhood. When a DP is extracted from an embedded verb phrase, the parser must predict which possible extraction site the DP originated from. When underspecified elements are extracted from such environments, the parser cannot effectively commit to such predictions, resulting in unparsability.

Alexopoulou and Keller (2007) found via Magnitude Estimation (Bard et al., 1996) that speakers rated whether-island sentences less acceptable than that-sentence controls. We tested whether a Minimalist Grammar which encoded the greater diversity of +Q continuations would result in greater processing effort of island sentences using the Entropy Reduction (Hale, 2006) metric. Hale’s (2006) Entropy Reduction Hypothesis suggests that the reduction of parse forest entropy triggered by a new word measures the cognitive load that an incremental parser exerts to disconfirm predictions no longer congruent with the unfolding sentence. We computed entropy reductions for 18 sentences in Alexopoulou and Keller’s (2007) English Experiment 1 in two conditions: an Island condition with the frame in 1a; and a Non-island condition with the frame in 1b.

We built a weighted training corpus which reflects statistical subcategorization facts for the verbs in the experiment. We collected counts from the New York Times corpus (Sandhaus, 2008) for different complements subcategorized for by wonder and claim. We also obtained counts for how often each embedded verb token was transitive or intransitive. The training corpus utilizes a factorial design, such that each sentence varies across four parameters: Matrix Verb (claim vs. wonder); Complement Type (if, whether, embedded question, that, about); Embedded Verb (fire, phone, evict, hire, punish, support, elect, invite, arrest); and Embedded Verb Transitivity (transitive, intransitive). Each sentence is weighted by the products of counts from each of the four parameters, so that the weighted corpus represents an accurate statistical extension of the grammar.

We found that the Island condition exhibited greater mean entropy reductions (10.014 bits) than the Non-island condition (7.39 bits), deriving the Alexopoulou and Keller (2007) effect. The ambiguity hypothesis of weak islandhood parsimoniously derives the difficulty of islands as a direct processing consequence of the +Q/-Q hypothesis. Additionally, our account readily derives the fact that ‘D-linking’ or specification of the extracted DP ameliorates islandhood (Pesetsky, 1987; Hofmeister and Sag, 2010). When the extraposed DP is specified, as in 1c, the parser can utilize...
s-selection clues such as animacy to guide the parse towards more likely predictions, resulting in reduced ambiguity.

(1) a. # Who did Mary wonder whether they will fire?
   b. Who did Mary claim that we will fire?
   c. ? Which employee did Mary wonder whether they will fire?

(2) a. * Mary wondered that the supervisor will fire the employee.
   b. Mary wondered whether the supervisor will fire the employee.
   c. Mary wondered if the supervisor will fire the employee.
   d. Mary wondered who the supervisor will fire.
   e. Mary wondered who will fire the employee.
   f. Mary wondered when the supervisor will fire the employee.

Word Count: 661 words

References


